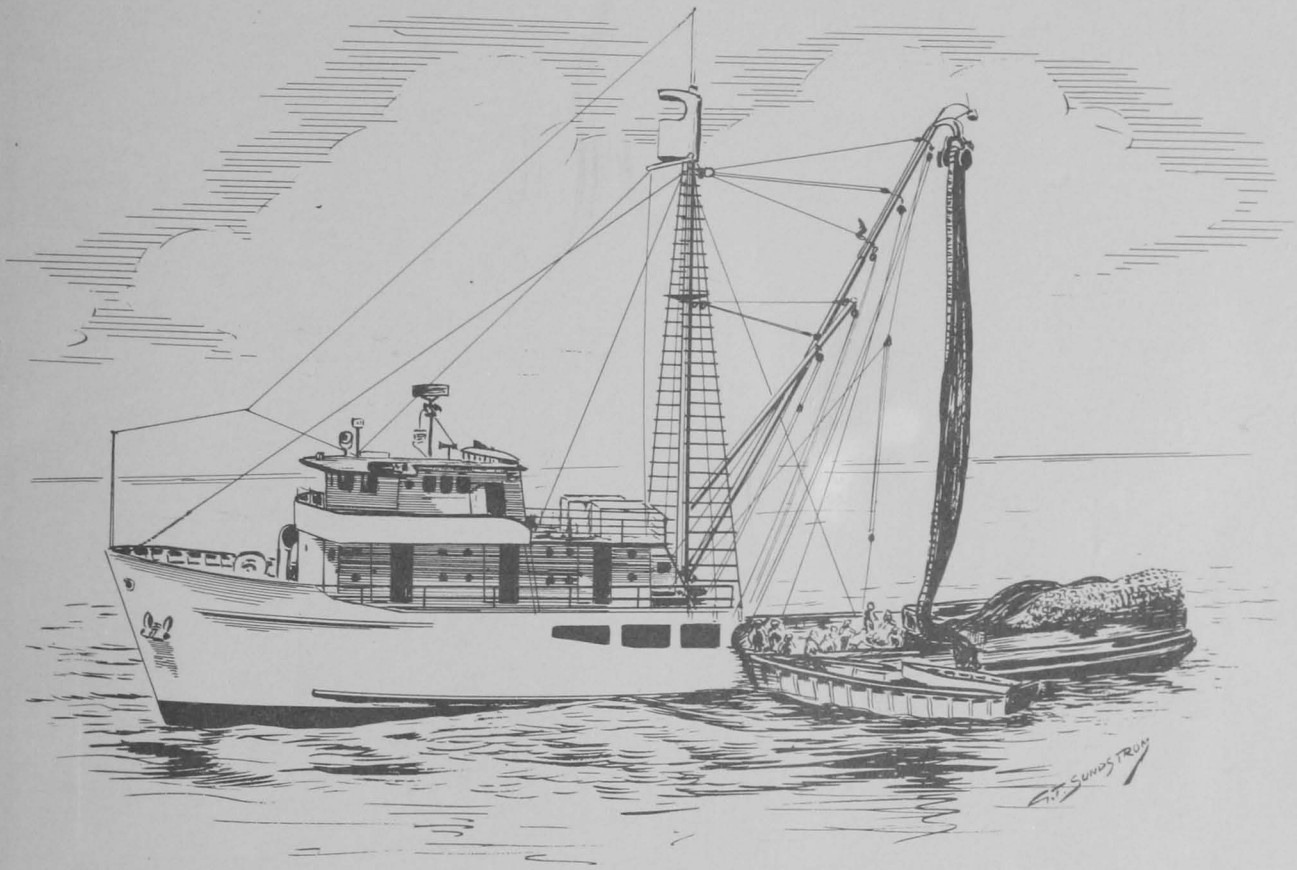


Mary S. Fukuyama

COMMERCIAL FISHING GEAR OF THE UNITED STATES



Circular 109

United States Department of the Interior
Fish and Wildlife Service
Bureau of Commercial Fisheries
Washington 25, D. C.

The front cover shows a sketch of a typical converted tuna purse seiner completing a set. The California deep-sea tuna fishing fleet, once a fleet of bait boats or clippers, is rapidly converting to this method of fishing. There were about 67 converted purse seiners operating by the end of 1960.

The success of these conversions has been outstanding. Tuna seiners demonstrated both efficiency and economy in 1960 by taking larger catches of yellowfin tuna in less than half the time required by clippers. Their success was reflected in lower operating costs; their fish was sold at profitable prices.

United States Department of the Interior, Stewart L. Udall, Secretary
Fish and Wildlife Service, Clarence F. Pautzke, Commissioner
Bureau of Commercial Fisheries, Donald L. McKernan, Director

COMMERCIAL FISHING GEAR OF THE UNITED STATES

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PREFACE

The Bureau of Commercial Fisheries collects information on the quantity and, in many instances, the size of the gear used by commercial fishermen to capture fish and shellfish. The classification and reporting of data on gear and the catch by gear have been difficult due to the many local names of fishing gear and the lack of uniformity between areas.

In an effort to bring about standardization in the classification of gear, this report, containing definitions and sketches of the principal types of fishing gear, was prepared. The original intention of this paper was to provide Bureau personnel with a guide in this reporting and tabulating of data on operating units and catch. However, since it is believed that the descriptions and drawings are of general interest, the report has been made available for public distribution.

The authors gratefully acknowledge all contributions to this report, especially the descriptions and sketches furnished by field personnel of the Bureau and the assistance of Francis Riley in assembling the material for publication.

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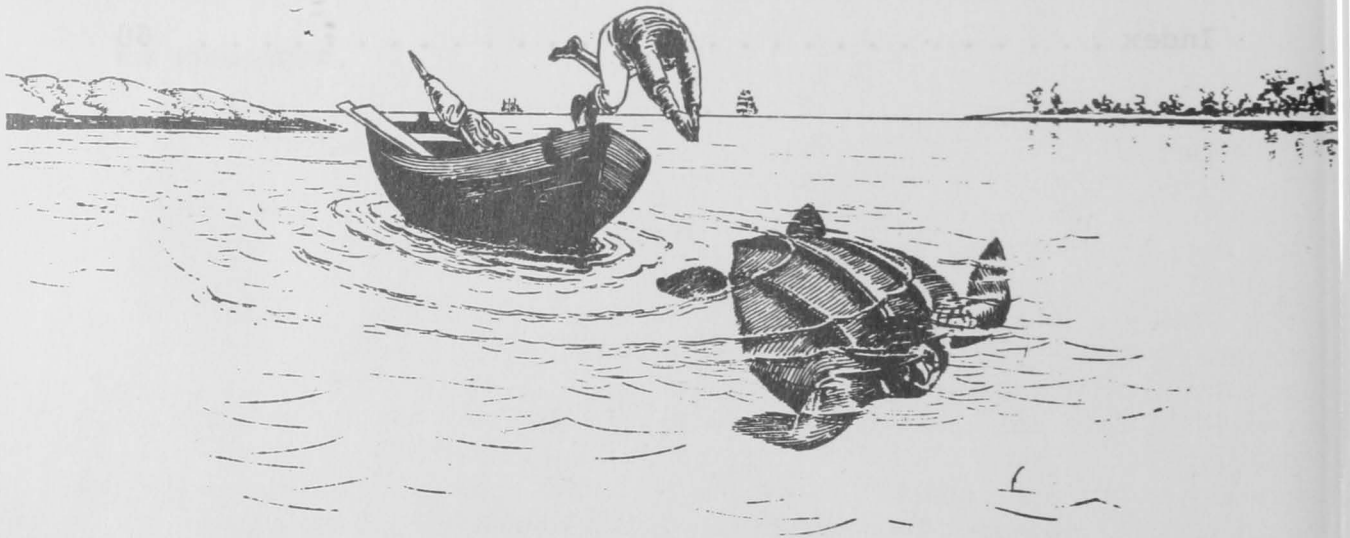
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19th CENTURY FISHING OPERATIONS

The shore cod fishery by H. W. Elliott and Captain J. W. Collins



The turtle fishery by H. W. Elliott



Sketches published in 1887 in The Fisheries and Fishery Industries of the United States by George Brown Goode.

COMMERCIAL FISHING GEAR OF THE UNITED STATES

INTRODUCTION

The art of fishing is ancient. It goes back to an early and indefinite age; man was a fisher at the dawn of history. Legend has it that Seth, son of Adam, taught it to his sons. They passed it on to posterity. From every age, the story of the fisherman has come down to us in fables, some older than the Sphinx. Evidence of the use of the spear, hook, and fish net has been found in the ruins of the Stone Age. Nets and lines were depicted in the art of early civilizations.

Primitive man made hooks from the upper bill of the eagle, the hind legs of insects, and from bones, horns, and thorn plants. Spears were derived from flints and shells. Lines and the webbing of nets were made from fibers of leaves, stalks of plants, and from the silk of cocoons. Although crude in design and material, ancient fishing nets were amazingly similar to some now in use.

At the beginning of our American fisheries -- over three hundred years ago -- there was little incentive for fishermen to go offshore to distant fishing banks when local waters were so productive. The yield from these waters provided the necessary requirements of fish and shellfish. Handlining from small skiffs and sail craft was the standard method of taking the daily catch; small weirs or traps in river mouths and harbors took quantities of migrating fish; and shore fishermen used beach seines or worked the intertidal flats for oysters and shellfish. But as America grew, economic pressures forced our fishermen to extend their activities offshore. The yield of the sea soon became the most important commercial resource available to the early col-

onists. Salt fish was the principal item of export and history contains accounts of the exploits of the picturesque and prosperous handline and linetrawl sailing schooners which fished the fishing banks.

Fishing gear, which formerly developed slowly by trial and error, has advanced rapidly in the past 60 years. Generations that produced the fishing schooners and the New Bedford whalers passed into tradition; mechanization and the introduction of more efficient equipment revolutionized the fishing industry.

From primitive nets there have been perfected purse seines, otter trawls, mile-long gill nets of various designs, and gigantic trap and pound nets. Hooks by the hundreds are used on one line, called the "longline." Some purse seines, made of synthetic twine, are valued as high as 40 thousand dollars or more; while new vessels, built to fish the hook in its simplest form, cost almost a million dollars to construct. Large English and Soviet factory ships, designed as stern trawlers to fish, process, and freeze the catch at sea, cost several million dollars.

Outstanding in the march of progress in fishing techniques was the appearance, since the turn of the century, of diesel-propelled vessels which have nearly replaced the steam-driven and sail craft. Another step in the trend toward fully mechanized fishing was the power handling of gear. The purse seine came into general use. Recently, power blocks to haul the seine and airplanes to spot the schools of fish have greatly improved the efficiency of this gear. The first mechanically propelled otter traw-

ler began successful operation in 1905 on New England banks, starting a rapid transition to the trawling method of fishing. Later, in the shrimp fishery, the otter trawl replaced the haul seine and has been the major gear used in the expansion of that fishery.

Although some electronic equipment was available to the fishing industry prior to 1940, its improvement and development during World War II resulted in extensive use of such instruments as ship-to-shore telephones, loran (position plotter), direction finders, depth indicators and recorders, fish finders, radar, and automatic steering devices. This equipment has been an aid to safer navigation and more productive fishing. It has also been responsible for the discovery of new fishing grounds and has made operation of midwater trawls practical.

Many improvements in fishing methods and equipment have been brought about by the introduction and wide acceptance of synthetic fibers. When they were first marketed, these twines and ropes were high in price and not entirely satisfactory for use in the fishing industry. However, prices gradually dropped to a level competitive with that of natural fibers. Most of their original imperfections were overcome. Nylon, in various forms, was the first of the fibers to be widely used in fishing nets. In recent years several other synthetics have gained prominence.

Fishery Statistics of the United States, 1959 -- the most recent edition -- lists nearly seventy different types of fishing gear as being used during that year. In 1960, nets, lines, and other gears represented a capital investment of 108 million dollars, while the investment of fishing vessels and boats was estimated as 424 million dollars. This equipment was used in making a catch of 4.9 billion pounds, valued at 347 million dollars to the fishermen.

Data are collected annually by the Bureau of Commercial Fisheries on the quantity of gear employed and the catch taken by each type. However, confusion has occurred in compiling the data because there has been little uniformity in gear terminology throughout the country. Local names are often used but the meaning varies in different areas. Comparable statistics cannot be obtained if a multitude of local names are used. The "lift net" offers an example of this confusion. In its previous publications, the Bureau has used the name "drop dip net" for this type gear operated in all states except Maine and Massachusetts. For these two States the term "lift net" has been used. The State of Washington legally defines this net as a "ring net," while Michigan and Wisconsin laws refer to it as a "dip net." Florida fishermen know it as a "hoop net," but in Texas it is called a "drop net." In other states "ring net," "dip net," and "drop net" are used to designate entirely different types of fishing gear.

Few states have official definitions for the many fishing implements used. There are no Federal laws defining commercial fishing gear since regulation of the fisheries in territorial waters of the United States constitutionally is a State rather than a Federal function.

Various systems of classifying fishing gear have been proposed during the past thirty years. This publication does not follow any one of these but is, in general, the classification system used in statistical publications of the Bureau. The different fishing gear have been arranged so that those of the same type are grouped together. The general groupings are: encircling or encompassing gear, entrapment gear, entanglement gear, lines, scooping gear, impaling or wounding gear, shellfish gear, and miscellaneous gear. The present order of listing the commercial fishing gear of the United States is shown on the following page.

CLASSIFICATION OF UNITED STATES FISHING GEAR

Encircling or Encompassing

Seines
 Haul
 Stop
 Purse
Lampara
Bag nets
Trawls
 Beam
 Otter

Entrapment

Weirs
Pound and trap nets
Hoop nets
Fyke nets
Pots and traps
Slat traps

Entanglement

Gill nets
 Anchor
 Drift
 Semi-drift
 Runaround
 Stake
 Bar nets
 Rip rap nets
Trammel nets

Lines

Hand
Troll
Long or set with hooks
Trot with baits
Snag

Scooping

Dip nets
Lift nets
Reef nets
Push nets
Cast nets
Wheels

Impaling or Wounding

Harpoons
Spears

Shellfish

Scrapes
Dredges
Tongs and oyster grabs
Rakes
Hoes and forks
Shovels
Picks
Crowfoot bars

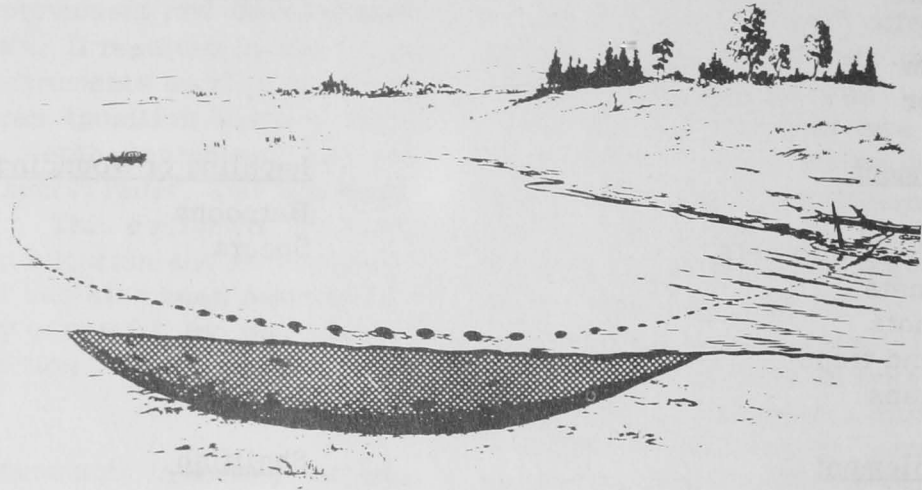
Miscellaneous

Frog grabs
Brush traps
Hooks
 Sponge
 Other
Diving outfits
By hand

ENCIRCLING OR ENCOMPASSING GEAR

COMMON HAUL SEINE

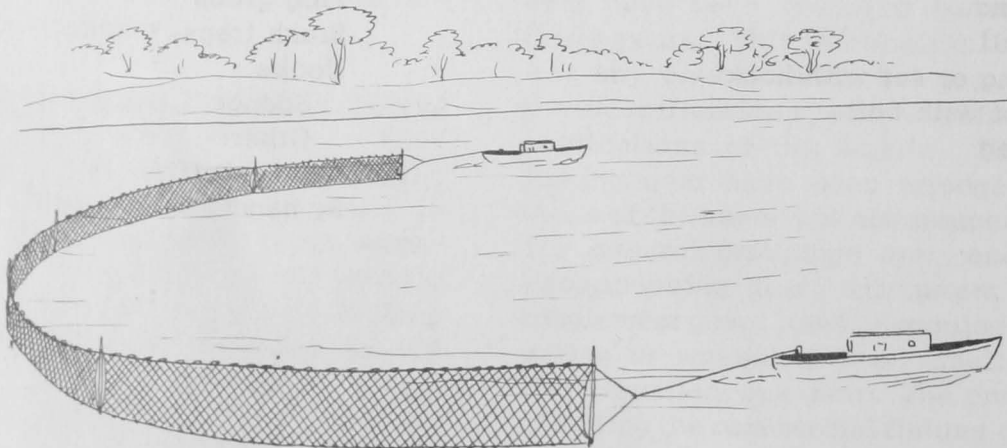
This is an encircling type of net made of mesh webbing and consisting of two wings and a bunt or bag. The top line has floats to keep it at the surface while the bottom or foot line is weighed with leads. The bunt or bag is flanked by wings to which are attached auxiliary lines. A haul seine is set to encircle any fish in the area enclosed. It is generally set from a motor or rowboat and hauled to the shore by hand or power winch.



Common haul seine

LONG HAUL SEINE

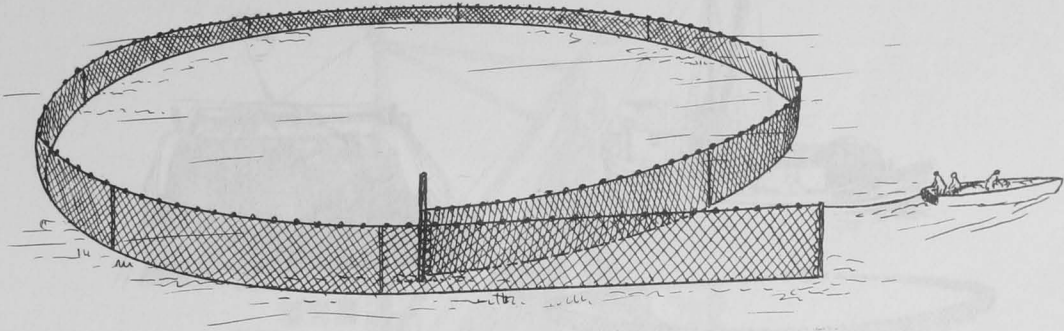
This net is really an extra long haul seine (approximately 1,200 yards long) which is towed by two motorized craft. It is hauled to a shoal where the catch is concentrated in the net and brailed from the bunt or bag. This type of gear is used only in the shallow waters of Pamlico Sound, North Carolina.



Long haul seine

LONG SEINE

A long seine is a modification of the common haul seine. It is used commonly in North Carolina. One end of the net is fastened to a stake while the other end, pulled by a motor boat, is swept in a circle so that it will pass by the end fastened to the stake. This encircles any fish within the area. A second motor boat may be used in setting the net.



Long seine

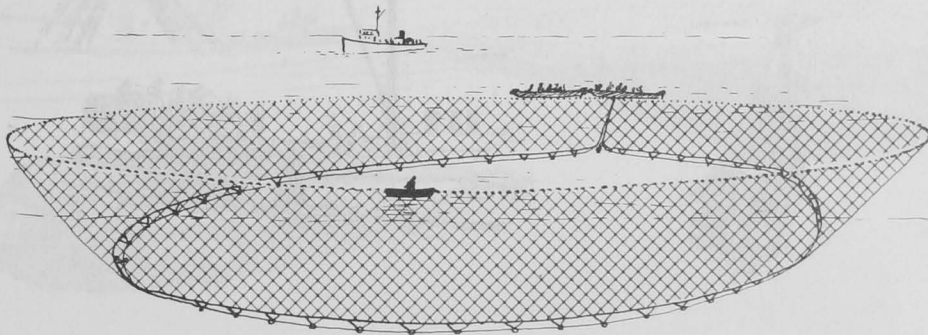
STOP SEINE

Any net, generally a haul seine, which is set across the mouth of a bay, bayou, arc of a beach, or other restricted body of water, is considered to be a stop seine. The fish are stranded or impounded behind the net when the tide has ebbed. This makes the fish accessible to capture by dip net, cast net, haul seine, or other means. In some areas, this type of gear is called a "stop net."

PURSE SEINE

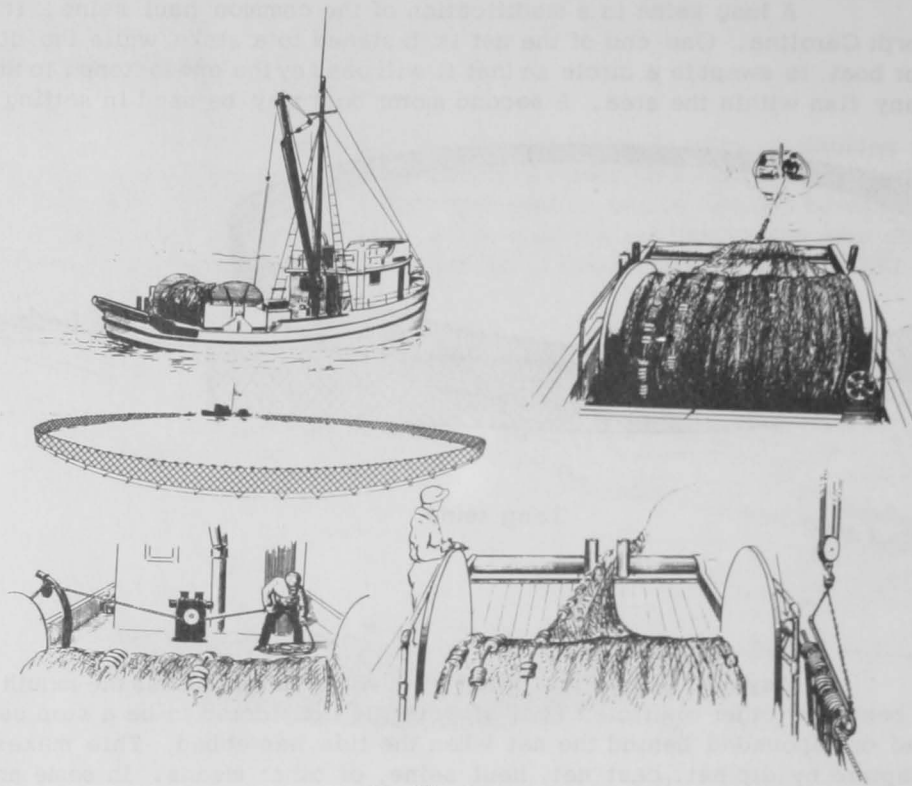
A purse seine is an encircling type of gear designed to catch species that run in schools near the surface of the water such as anchovies, mackerel, menhaden, sardines, and tuna. Nearly 45 percent of the total 1958 domestic catch was taken in purse seines.

The net is actually a long wall of webbing without a prominent bunt or bag. The top edge is floated by a series of corks (the cork line) and the bottom edge is weighted with a number of leads (the lead line). The essential feature of this net is the pursing by closing the draw string which is threaded through a series of rings along the bottom of the net below the lead line. Capture is affected by surrounding the school, pursing the bottom line so that the lead line is bunched or puckered, and concentrating the catch in the landing piece or small bag. The catch is removed by use of a brailer. Variations of this type gear are found in different fisheries.

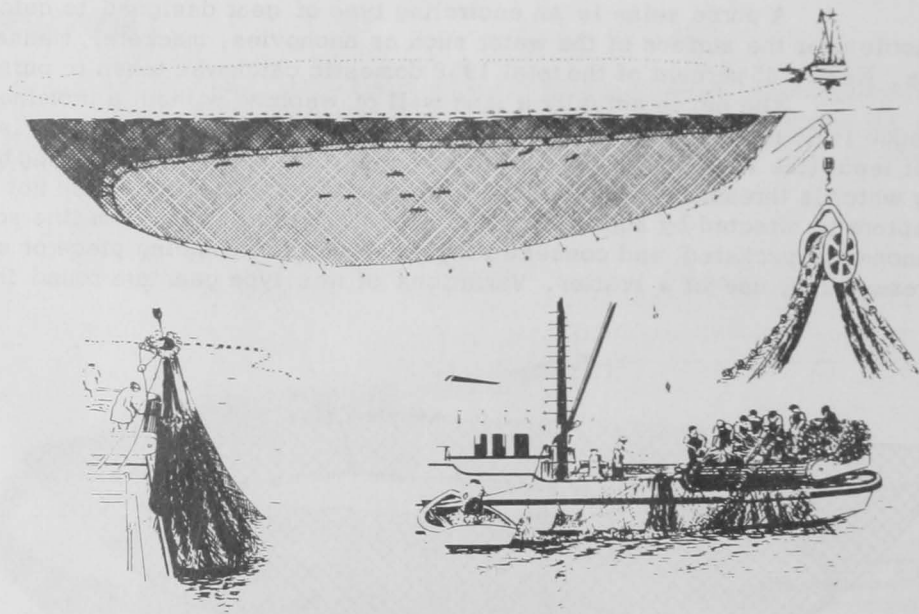


Menhaden purse seine

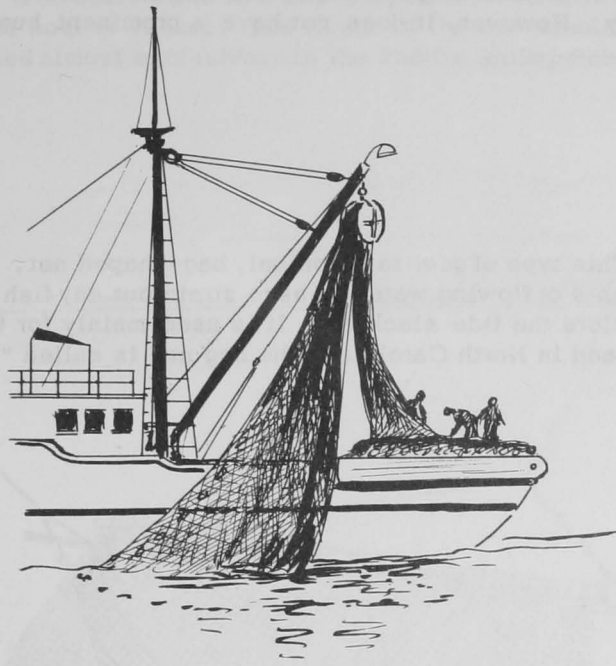
PURSE SEINE - continued



Pacific drum seine



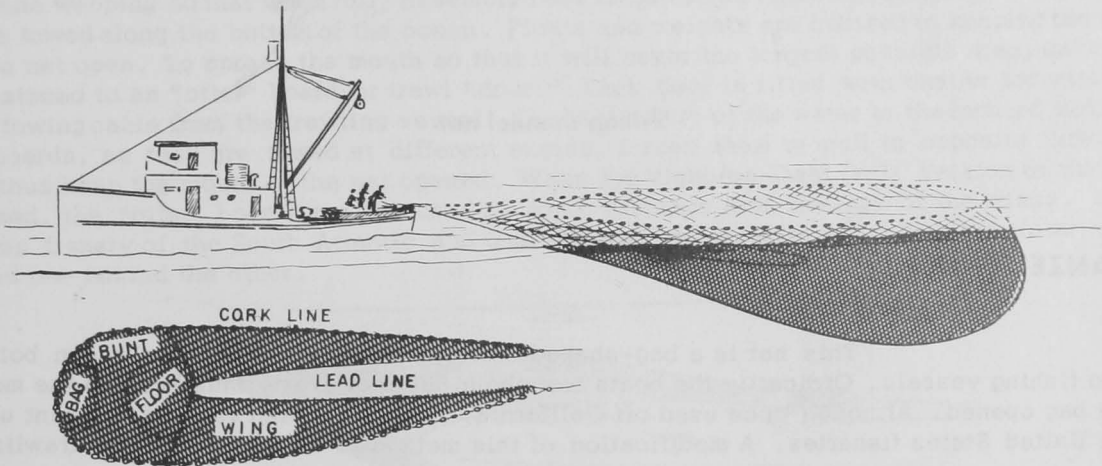
Salmon purse seine



Purse seine power block

LAMPARA NET

The net has a large central bunt and relatively short wings. The wings have a larger mesh than the bunt. The gear is played out from a vessel so as to surround a compact school of fish. The two wings are pulled simultaneously. There is no pursing device, as on a purse seine, other than the closing of the lead lines as the net is drawn through the water. The lampara is so called from the Italian word "lampo" meaning lightning because it is used chiefly in taking sardines, anchovies, and other small fishes which move with great quickness.



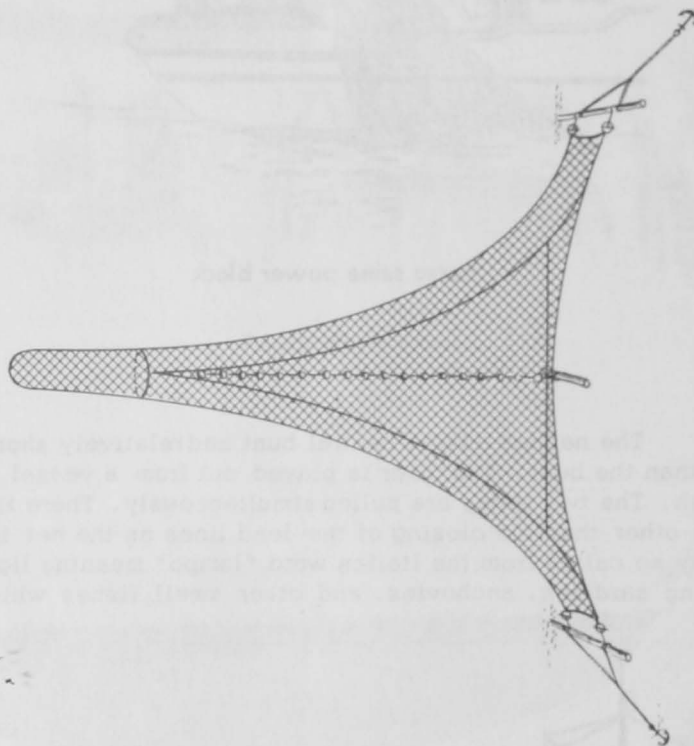
Lampara net

RING NET

The modern ring net resembles the lampara net in that the two wings are pulled simultaneously. However, it does not have a prominent bunt and, like the purse seine, has purse rings.

BAG NET

This type of gear is a conical, bag-shaped net. It is fastened to poles in fairly strong tidal currents or flowing water so as to strain out any fish or floating shellfish. The net must be lifted before the tide slackens. It is used mainly for taking smelt in Maine and shrimp in California and in North Carolina. The bag net is called "channel net" in North Carolina.



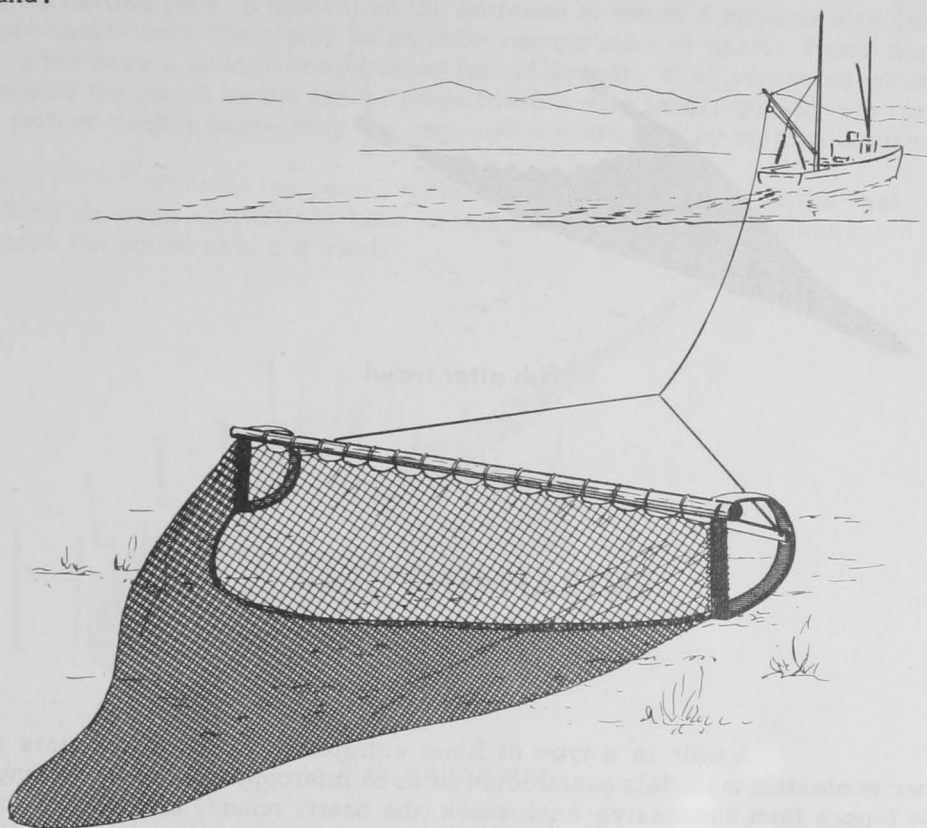
Shrimp channel net

PARANZELLA NET

This net is a bag-shaped net towed or dragged over the ocean bottom by two fishing vessels. Ordinarily the boats tow about 800 feet apart, thus keeping the mouth of the bag opened. Although once used off California, this type of net is not at present used in the United States fisheries. A modification of this method is known as Spanish trawling.

BEAM TRAWL

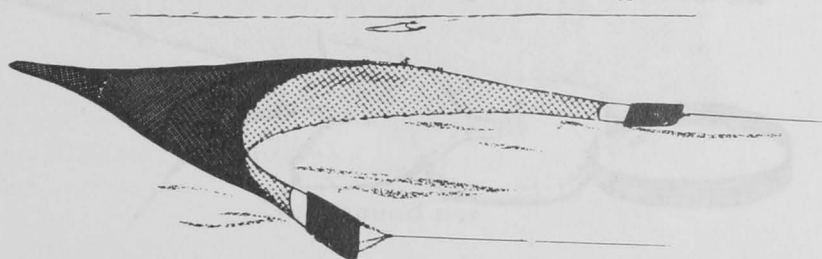
The beam trawl is a bag-shaped net, without wings, dragged or towed on the bottom by a motor boat or vessel. The mouth of the net is held open by a rigid beam of wood or metal. It is used almost exclusively in the Pacific shrimp fishery and for bay scallops on Puget Sound.



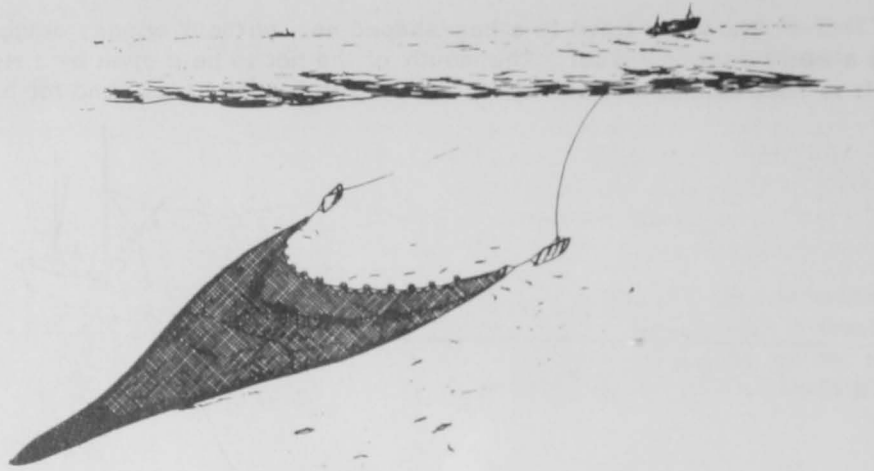
Beam trawl

OTTER TRAWL

The otter trawl is a device for catching bottom fish. It is constructed of twine webbing so that when fully assembled and rigged it will take the shape of a huge funnel while towed along the bottom of the ocean. Floats and weights are utilized in keeping the mouth of the net open. To spread the mouth so that it will cover the largest possible area, each wing is fastened to an "otter" board or trawl "door." Each door is fitted with chains for attaching to a towing cable from the trawling vessel. The resistance of the water to the forward motion of the boards, as they are towed at different angles, forces them to pull in opposite directions and thus keep the mouth of the net opened. When the Vigneron-Dahl (V-D) version of this gear is used, the "otter" boards are attached at some distance from the tips of the wings. In the shrimp fishery of the South Atlantic and Gulf States, many vessels operate two otter trawls towed one behind the other.



Shrimp otter trawl

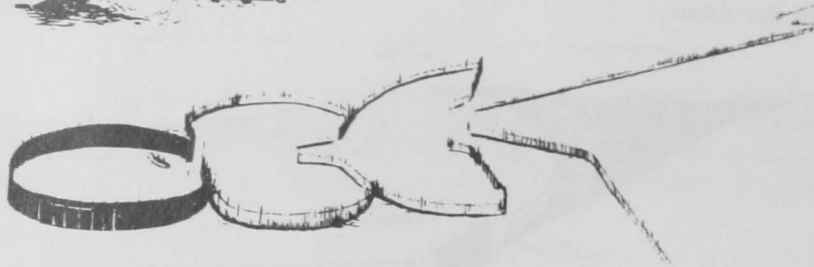
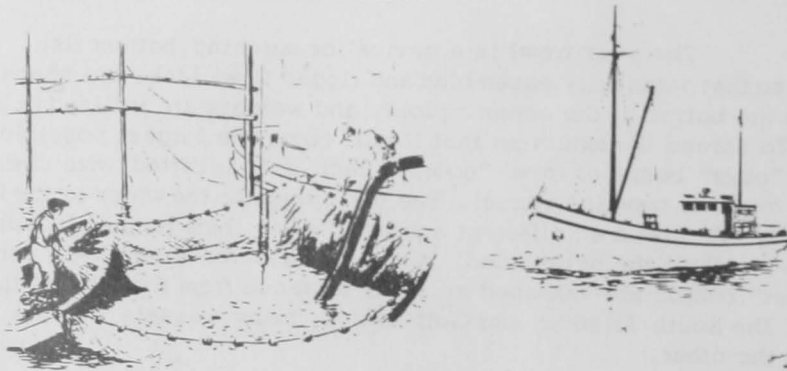


Fish otter trawl

ENTRAPMENT GEAR

WEIR

A weir is a type of fixed entrapment gear. It consists of fences of brush or other nontextile materials constructed so as to intercept schools of feeding or migrating fish. These fences form successive enclosures (the heart, pound, and pocket) into which the fish are voluntarily directed by a prolonged fence (the leader). A weir is generally built each year in the same location since it is permanently fixed to the bottom. Fish are removed from weirs through the use of seines or other devices.



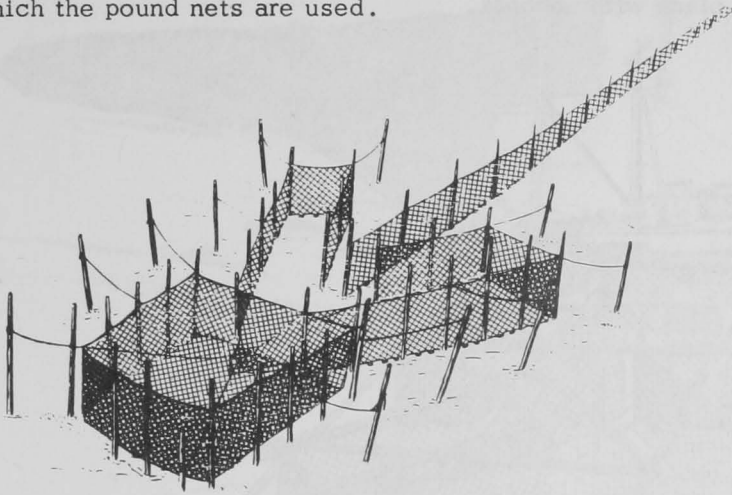
Sardine weir

POUND AND TRAP NETS

This type of fixed entrapment gear is actually an arrangement of fiber netting or chicken wire supported upon stakes or piling with the head ropes or lines above the water.

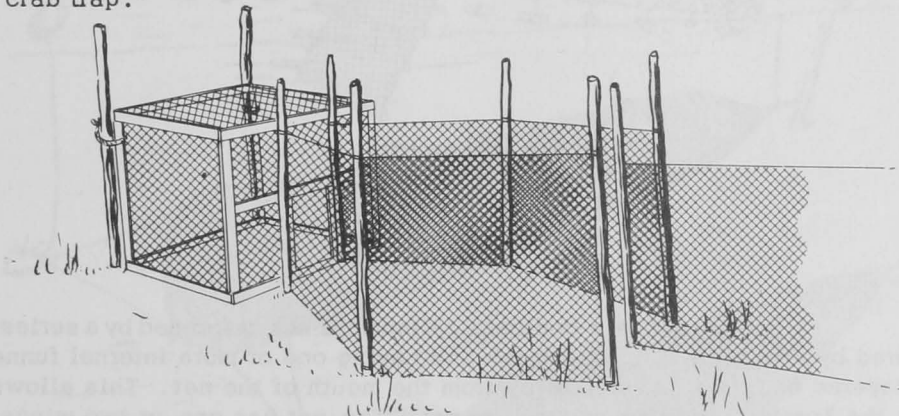
A pound net usually consists of an enclosure (the pound proper, crib, or pocket) with a netting floor, a heart from the entrance to which a straight wall (the leader or runner) extends shoreward. There may be an outer compartment or heart. Pound nets fished in deeper water often have a middle compartment (round pound). Fish swimming along the shore are turned towards the pound by the leader (sometimes a mile long), guided into the heart, and then into the crib or pocket where they are removed periodically by various devices, such as dip nets.

Through the years, little change has been made in the basic design and method of fishing although adaptations have been made to suit bottom contours and currents of the area in which the pound nets are used.



Fish pound net

The crab pound net is a small pound net used mainly in Virginia to take "peeler" and soft crabs. It is made of chicken wire. The rigid frame (wood) of the pot is so built that it can be easily lifted out of the water to remove the catch. It is also called a "crab fyke" and "crab trap."

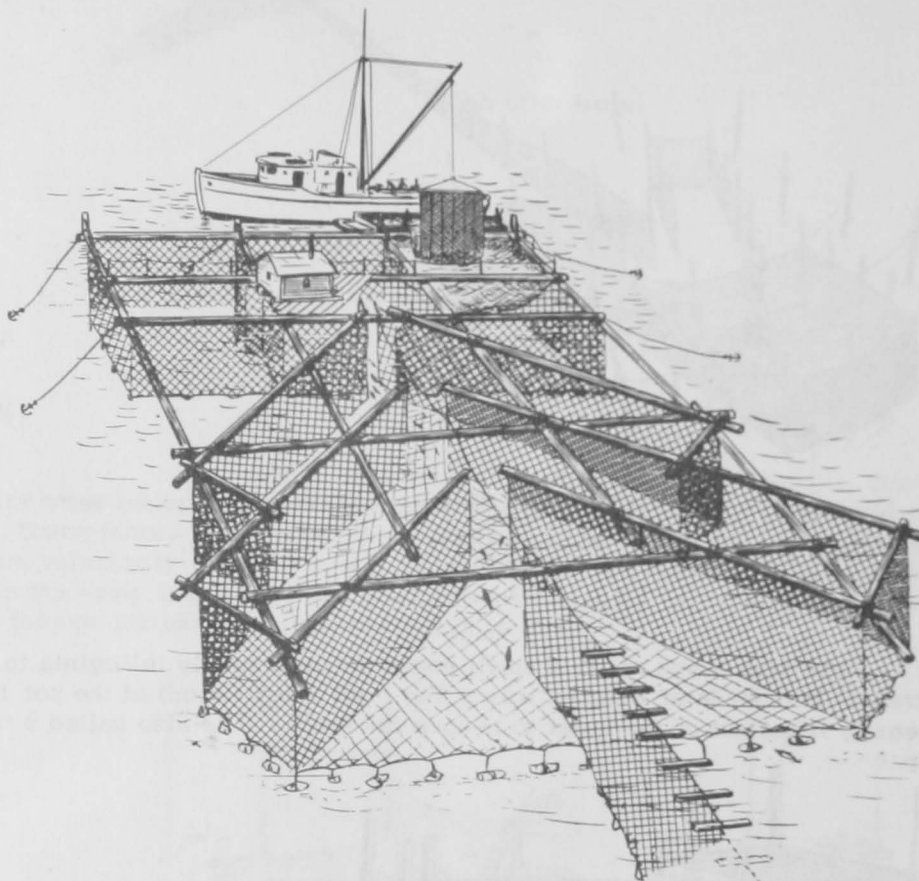


Crab pound net

In the Great Lakes, the entire net is set below the surface of the water, with the heart and pot (bowl or pocket) covered with webbing, and the entire net held in place by anchors. This type of gear is now illegal in most States.

In Alaska, floating salmon traps, adaptations of pound nets, were used in locations where the bottom was such that piling could not be driven. The netting was attached to logs, which took the place of floats and head ropes, and to pipes vertically set in the loops, in place of piling. The trap is held in place by anchors. This type of gear has been declared illegal in Alaska.

In southern New England, a "trap net" is a pound net used in areas where the bottom terrain prohibits the use of piling or stakes. Large floats are used on the head rope and the net is held in place with anchors.

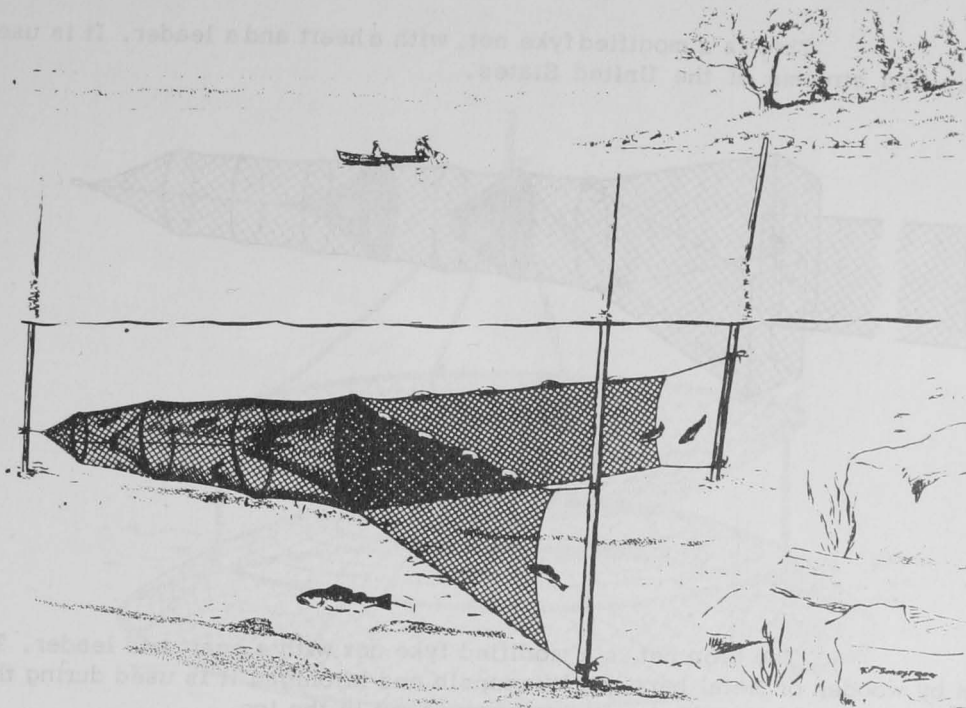


Floating salmon trap

FYKE NET

A fyke net is a conical, cylindrical net distended by a series of hoops or frames, covered by web netting or wire mesh and having one or more internal funnel-shaped throats whose tapered ends are directed away from the mouth of the net. This allows the fish to readily enter the "parlor" or inner part of the net. The net has one or two wings and/or a leader to help guide the fish into the pot. A fyke generally is not baited, and is held in place by stakes or poles.

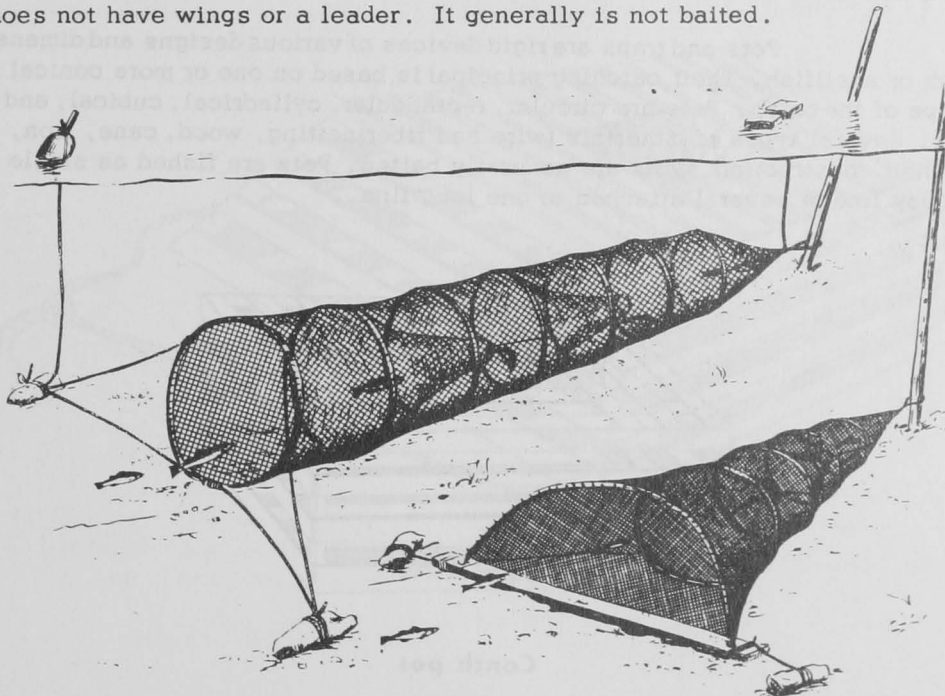
A fyke net is a hoop net with wings and/or a leader.



Fyke net

HOOP NET

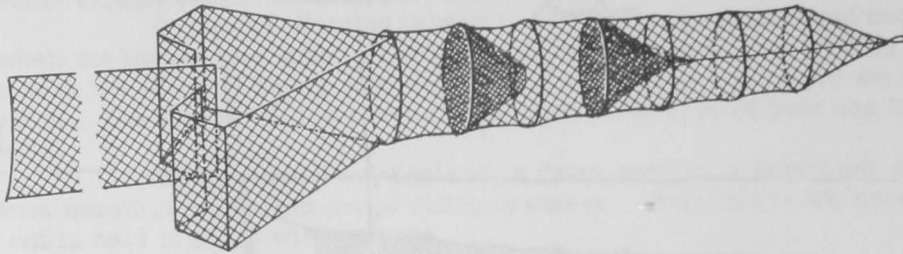
The hoop net is an entrapment device constructed by covering hoops or frames with web netting or wire mesh, and having one or more internal funnel-shaped throats. The tapered ends of the "funnels" are directed away from the mouth of the net to allow the fish to enter the inner pot or parlor where they become entrapped. A hoop net differs from a fyke net in that it does not have wings or a leader. It generally is not baited.



Hoop net

HEART NET

This is a modified fyke net, with a heart and a leader. It is used in the interior lakes and streams of the United States.



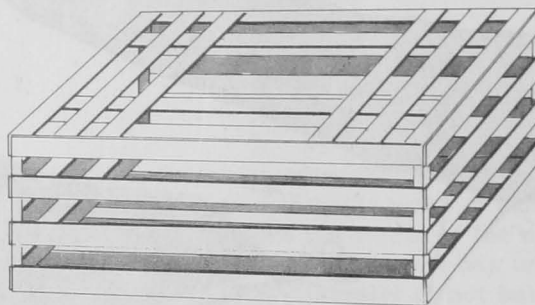
Heart net

DROP NET

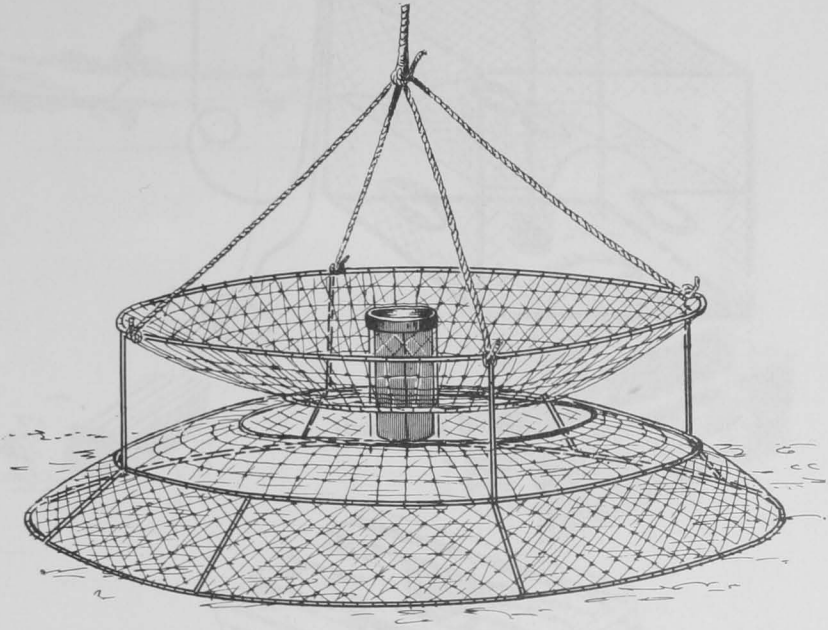
The drop net is a modified fyke net with a heart and leader. The heart is held open by wooden or metal bars. In Wisconsin and Michigan it is used during the winter months when the net is "dropped" through an opening cut in the ice.

POTS AND TRAPS

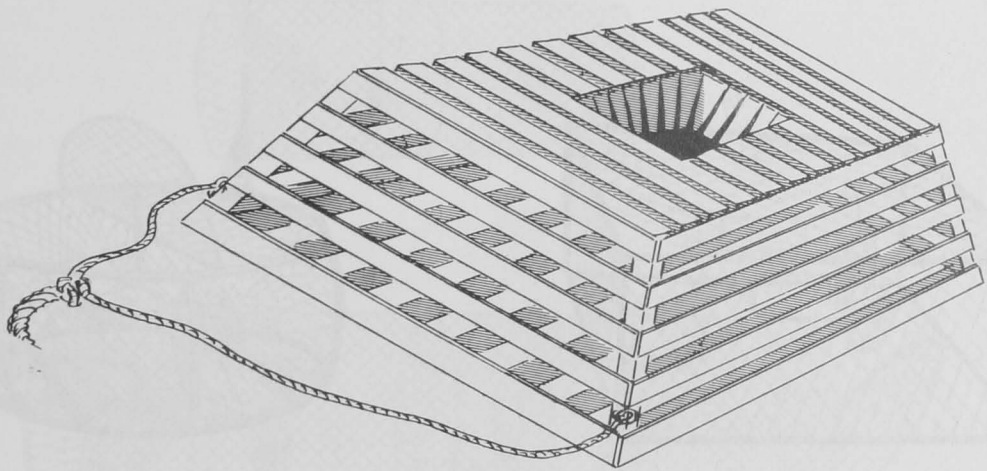
Pots and traps are rigid devices of various designs and dimensions used to entrap fish or shellfish. Their catching principal is based on one or more conical funnels to prevent escape of the catch. Pots are circular, rectangular, cylindrical, cubical, and of various other shapes. Several types of materials (wire and fiber netting, wood, cane, iron, and steel) are used in their construction. Pots are generally baited. Pots are fished as single units with a separate buoy line or several attached to one long line.



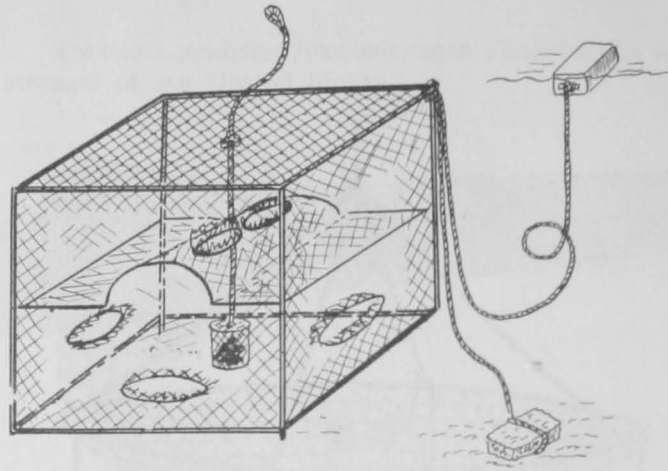
Conch pot



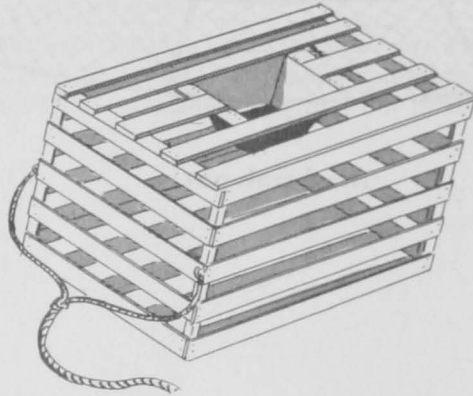
Hard crab pot



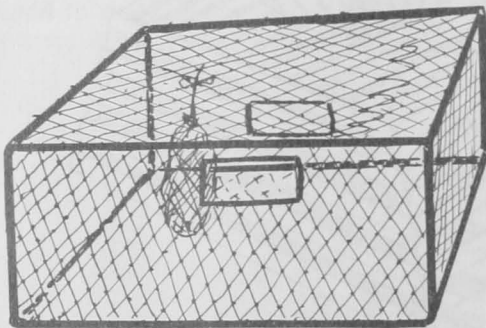
Hard crab pot



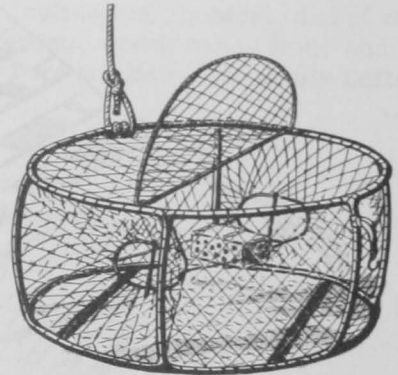
Hard crab pot



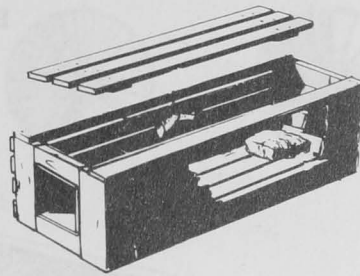
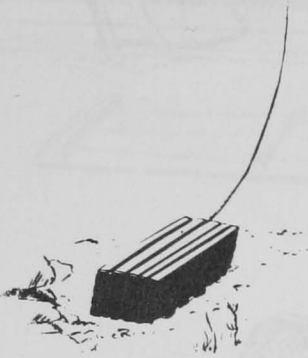
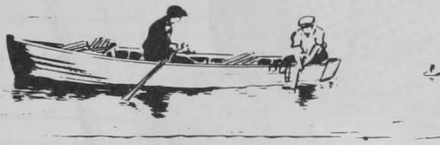
Stone crab pot



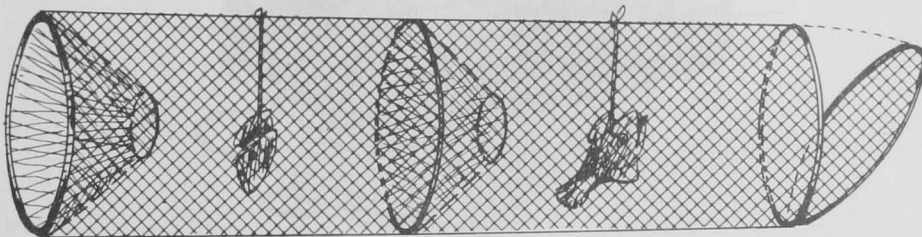
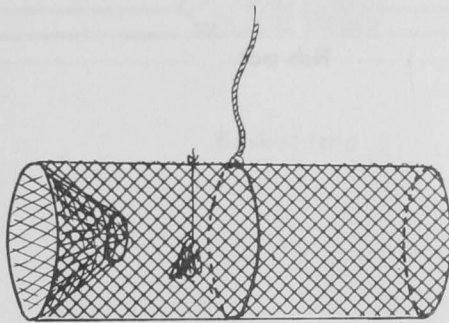
Dungeness crab pot, rectangular



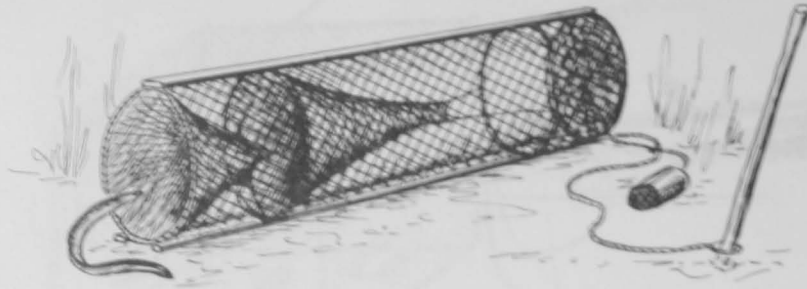
Dungeness crab pot, circular



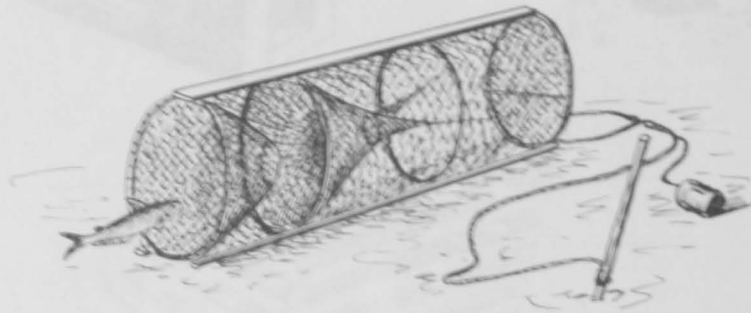
Fresh-water crawfish pot



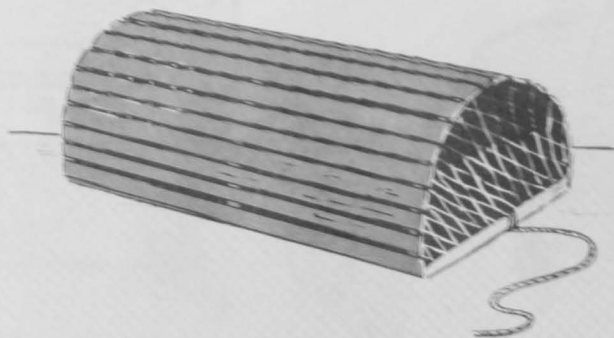
Fresh-water crawfish pot



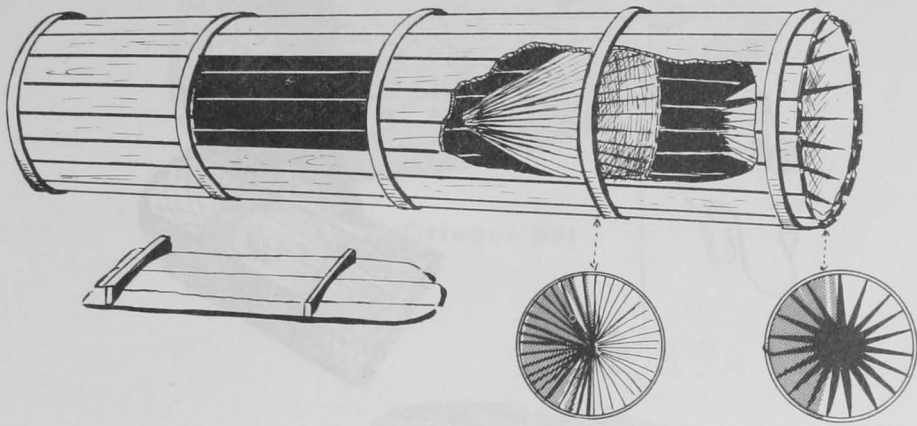
Eel pot



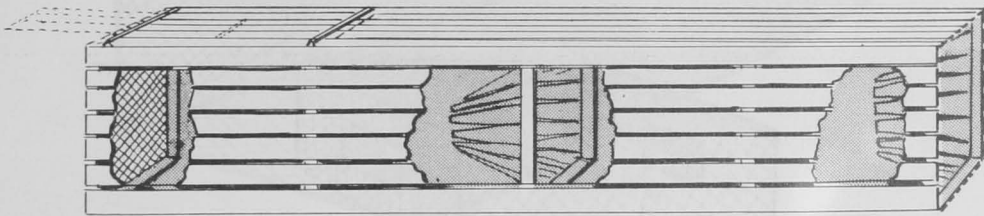
Fish pot



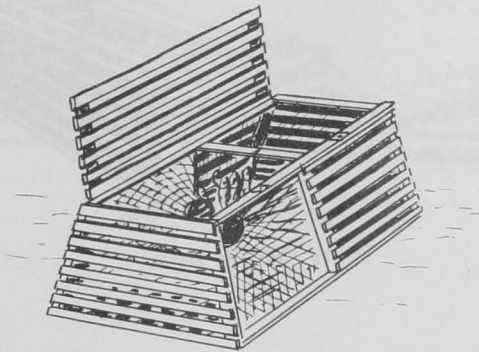
Sea bass pot



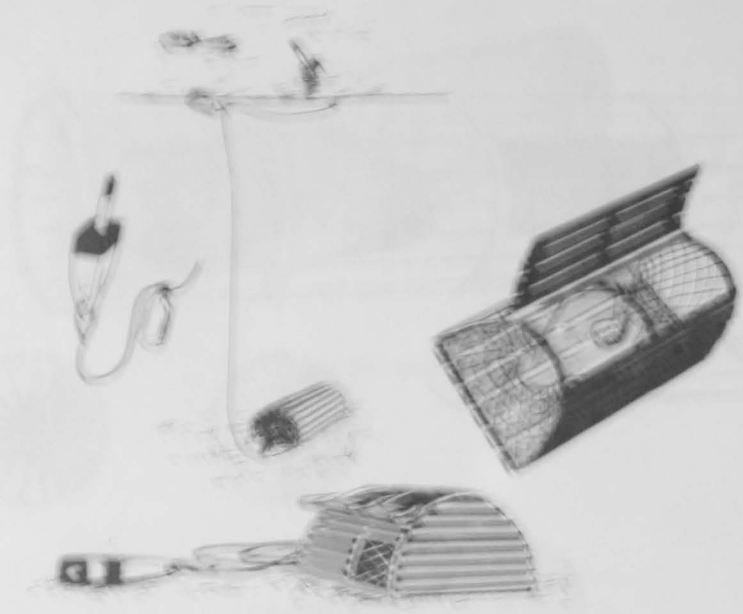
Slat trap



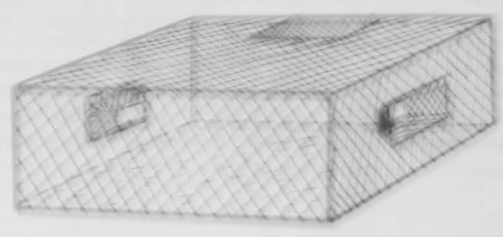
Basket trap



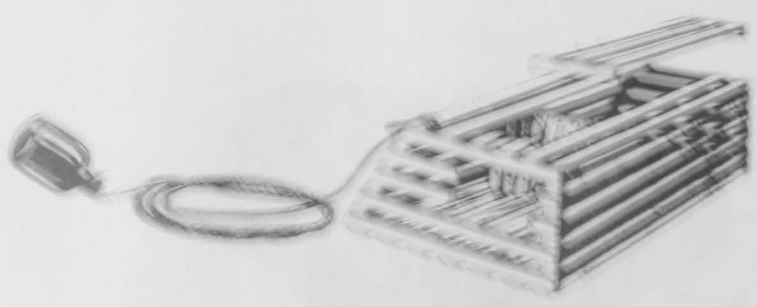
Lobster pot, rectangular



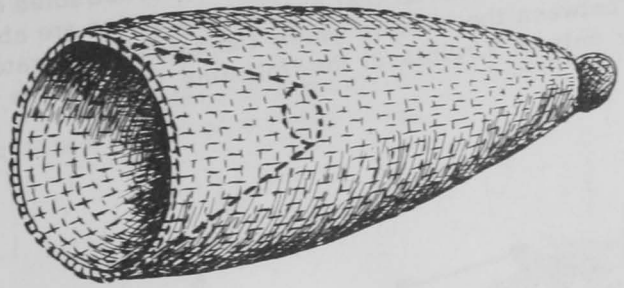
Lobster pot



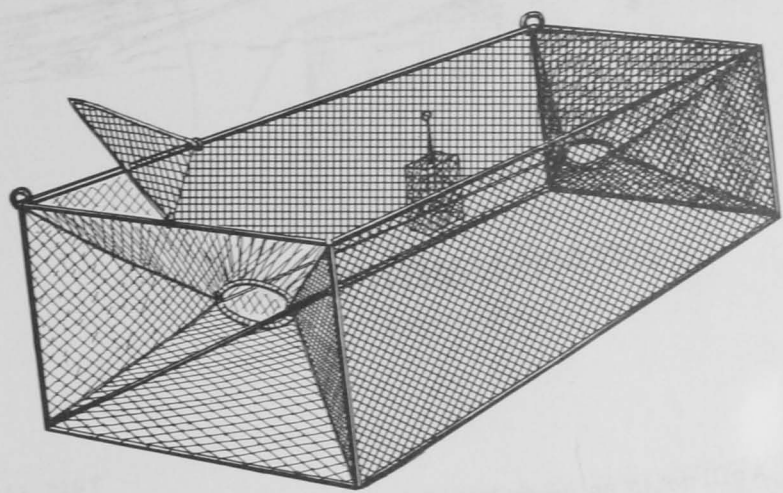
Spiny lobster pot



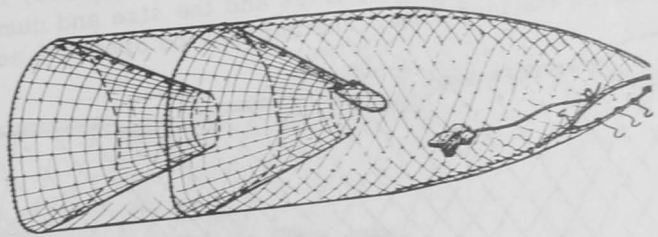
Spiny lobster trap



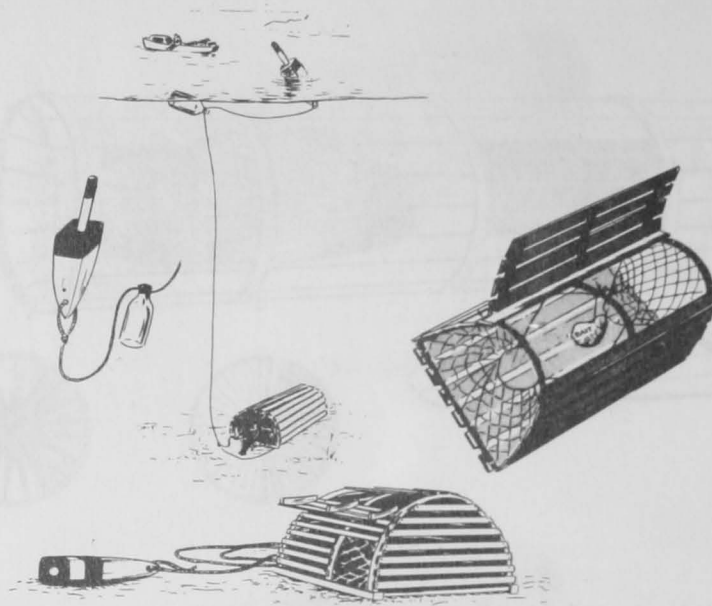
Octopus pot



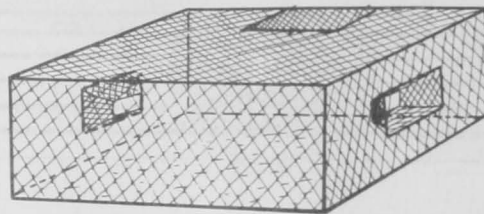
Shrimp pot



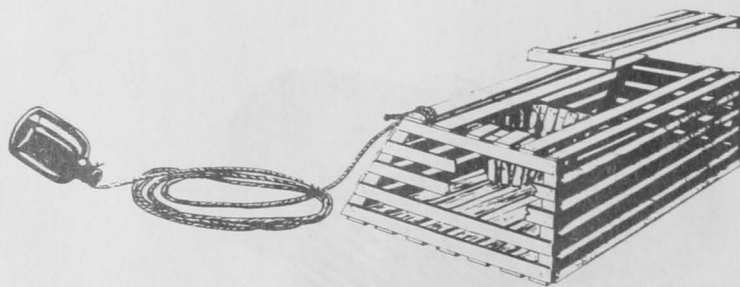
Wire basket pot



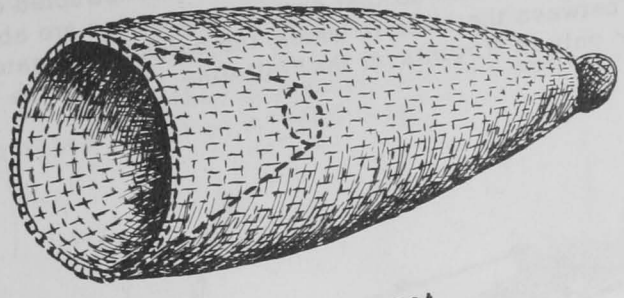
Lobster pot



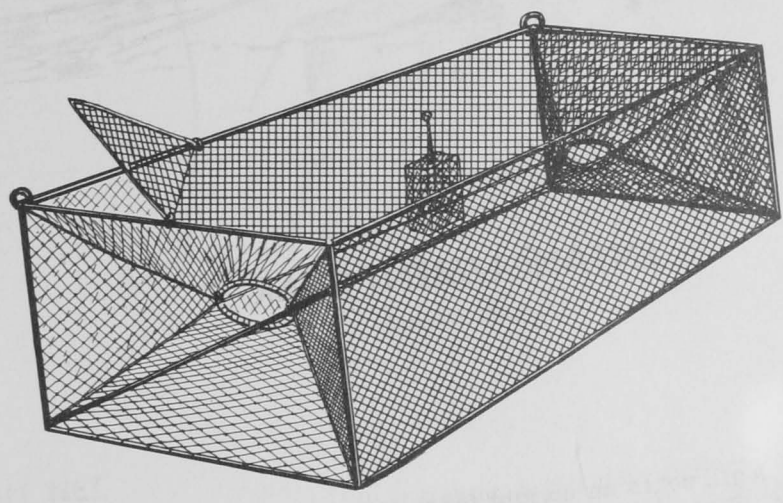
Spiny lobster pot



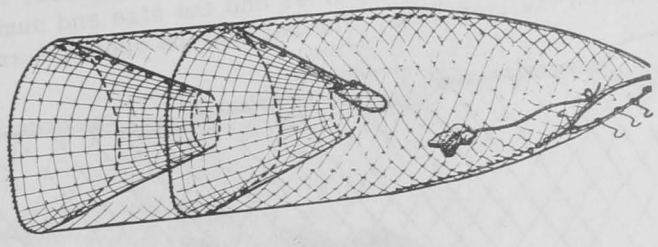
Spiny lobster trap



Octopus pot



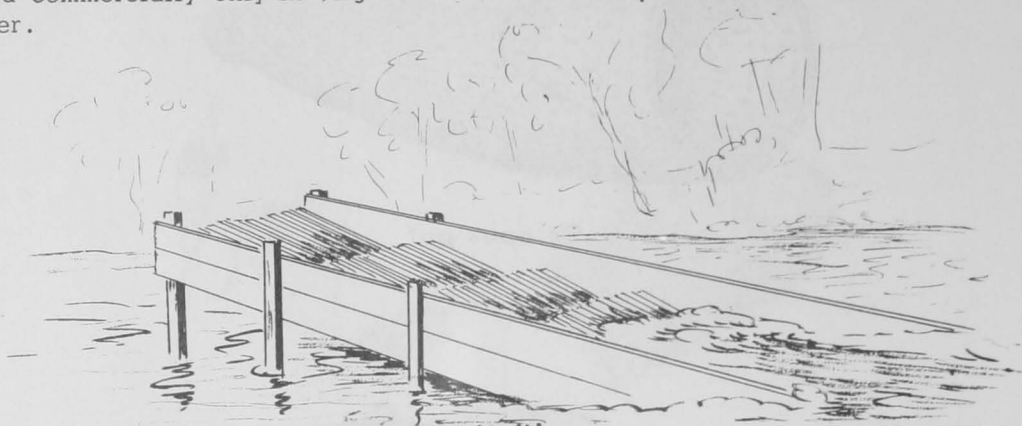
Shrimp pot



Wire basket pot

SLAT TRAP

(Atlantic Coast rivers). A device constructed of a series of slats set at an angle to the surface of the water so that one or more series are above the surface, forming a series of pockets between the slats in which the catch congregates. In 1959, slat traps were used commercially only in Virginia at the "fall-line," i.e. in the rapids at the head of tidal water.

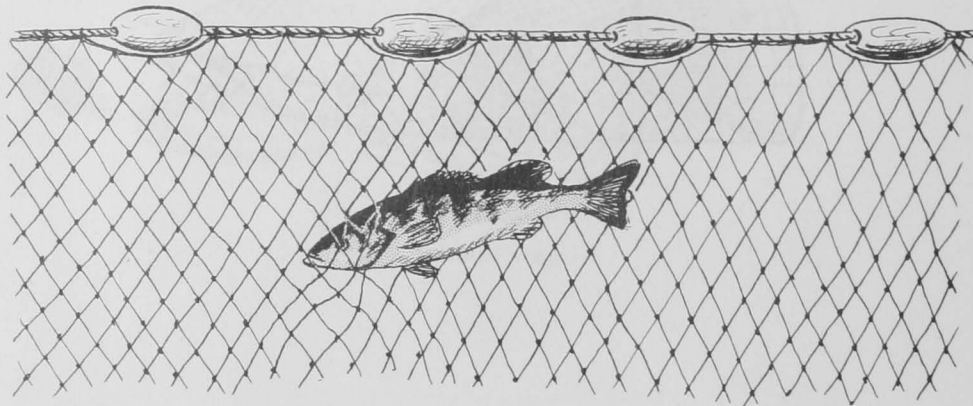


Slat trap

ENTANGLEMENT GEAR

GILL NET

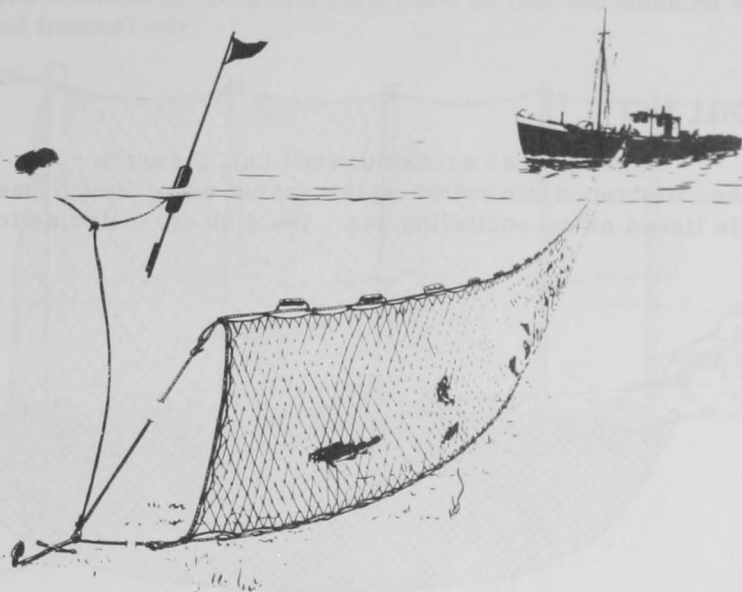
A gill net is an upright fence of fiber netting in which the fish are caught in the meshes of the net. Fish, of a size for which the net is designed, swimming into the net can pass only part way through a single mesh. When it struggles to free itself, the twine slips back of the gill cover and prevents the fish from escaping. The fish is thus "gilled" and can neither go forward nor back. Various sizes of mesh are used depending on the species and size of the fish to be caught. Gill nets can be suspended at the surface, in midwater, or close to the bottom by controlling the number of buoy lines and the size and number of floats on the top or cork line and weights on the lead line. The net may be operated as stationary or movable gear.



Gill net

ANCHOR GILL NET

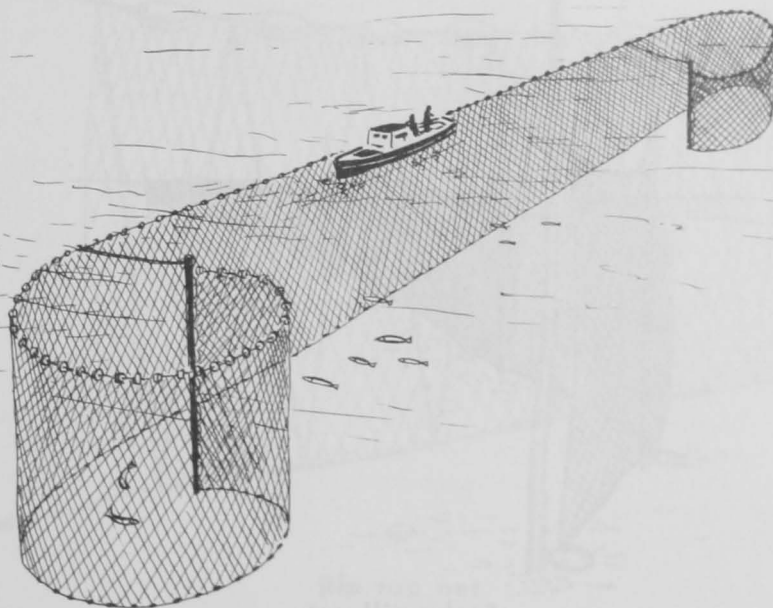
In this method of fishing, gill nets are held in place by anchors. In some areas, this type of gear is called a "set gill net."



Anchor gill net

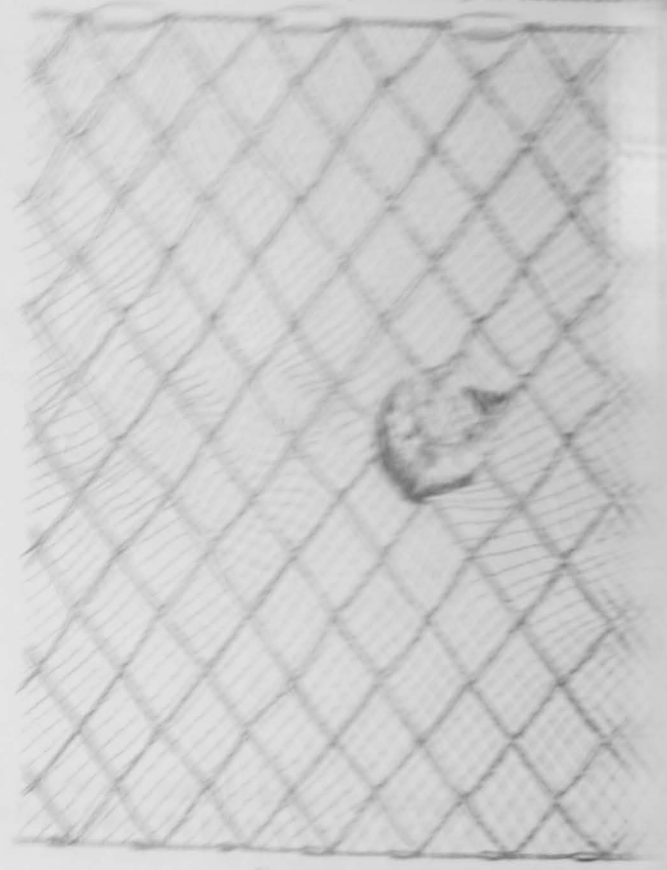
DRIFT GILL NET

In this method of fishing a gill net, the net is free floating and fished at the surface or at intermediate depths. The gear is generally, but not always, set across the current and attended by a fishing craft from which the net is periodically lifted.



Drift gill net

This type of fishing gear has three panels of netting which are suspended from a common cork line and attached to a single bottom or lead line by two outside webs or walls of netting of a larger mesh than the inside webbing. The dammel net has a greater depth and hangs loosely between the outer panels of webbing. A fish straggling either side passes through the large-mesh outer webbing and into the small-mesh netting which is carried through one of the openings of the other large-mesh webbing, forming a second pocket in which the fish is entraped. A dammel net is usually fished by drifting or stationary poles.



Trammel net

LINES

LINES

Lines are fished in many different ways. Originally used to catch a single fish, they have developed into a fishing method which can be used to capture many fish on a single line. They can be fished as a single line and hook held by fisherman, or as a longline to which are attached many hooks or baits. Lines can be anchored or allowed to drift at any level from the surface to the bottom of the sea, or towed behind a moving boat (trolling). Lines are commercially important in the red snapper, halibut, salmon, trout and crab fisheries and to a somewhat lesser extent in the cod and fresh-water fisheries. The Bureau of Commercial Fisheries classifies fishing lines as handline, troll, longline or setline with hooks, trot with baits, and snaglines.

HANDLINES

A handline is a single line with one or more hooks held or attended by one person. In some cases, the line is attached to a pole. In the West Coast tuna fishery, a single barless hook is attached to one to four lines, depending on the size of the fish being taken. Each line is fastened to an individual pole attended by one person. A single line, with one or more baited hooks, attached to a single float, jug, or stake, is likewise a handline. When used in this latter fashion, it requires only periodic attention. (This type of gear has been incorrectly classified in some states as a trotline or longline.)



Two-pole tuna fishing



Handline

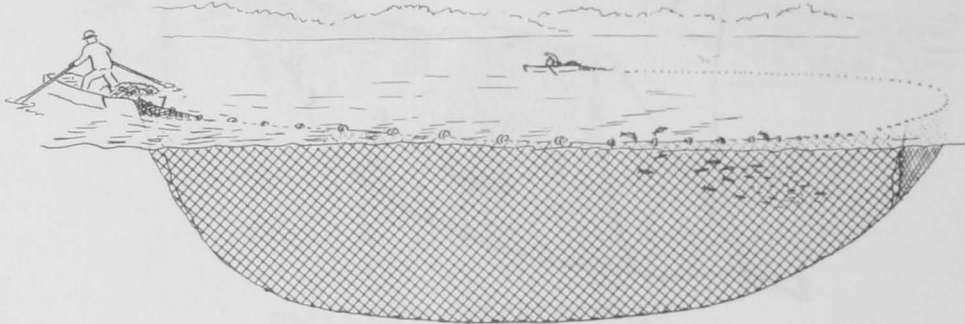
GILL NETS - continued

SEMI-DRIFT GILL NET

This type of gill net is generally fished the same as the drift gill net except that one end of the net is fastened to a stake. At times a fishing craft attends the net.

RUNAROUND GILL NET

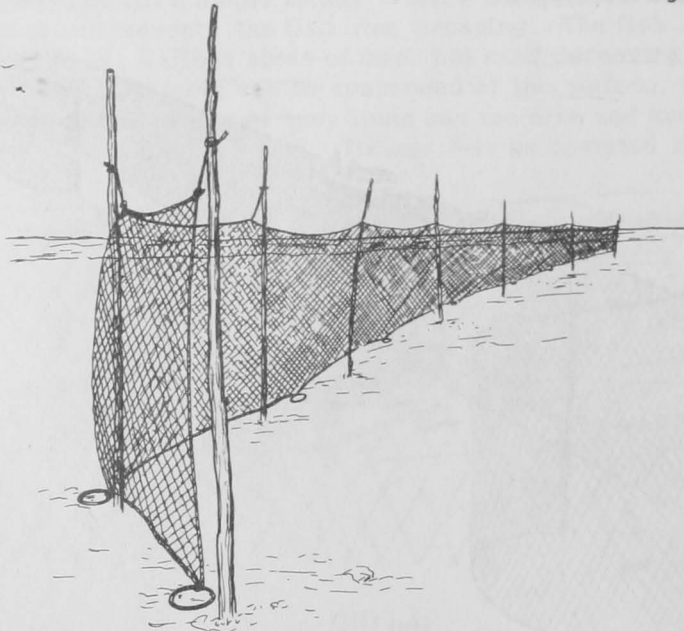
When used as a runaround gill net, the net is set or "runaround" a school of fish. They are then frightened into swimming into the net and gilling themselves in the meshes. Although this net is fished as an encircling gear, the fish are gilled as in other forms of gill netting.



Runaround gill net

STAKE GILL NET

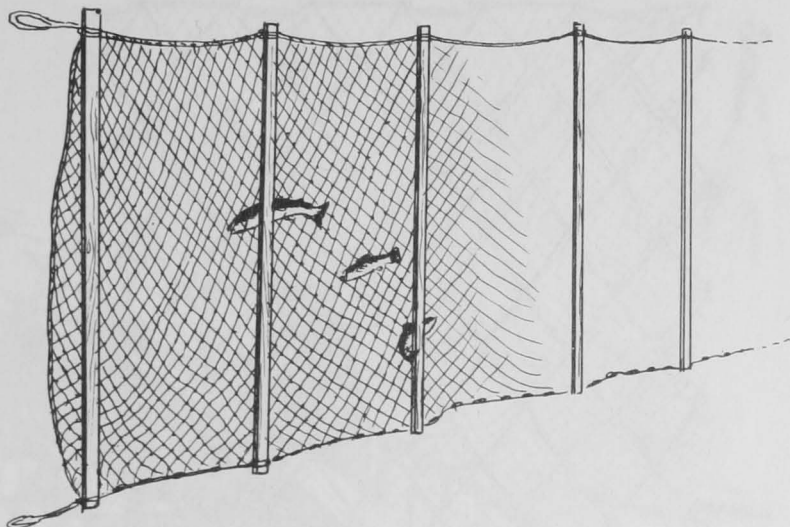
In this method of fishing, gill nets are fastened to poles or stakes which have been pushed or pumped into the bottom. The nets are generally set at right angles to the current or tidal flow. In some areas this type of gear is called a "set gill net."



Stake gill net

BAR NET

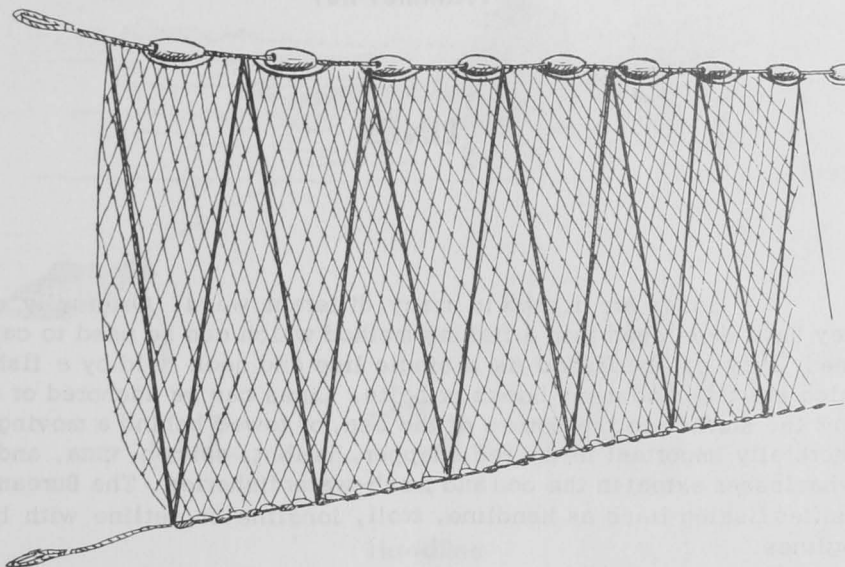
A bar net is a single wall of gill netting with ropes or wooden bars attached at right angles between the cork and lead lines so that the webbing hangs slack. It is fished as both gill and trammel net.



Bar net

RIP RAP NET

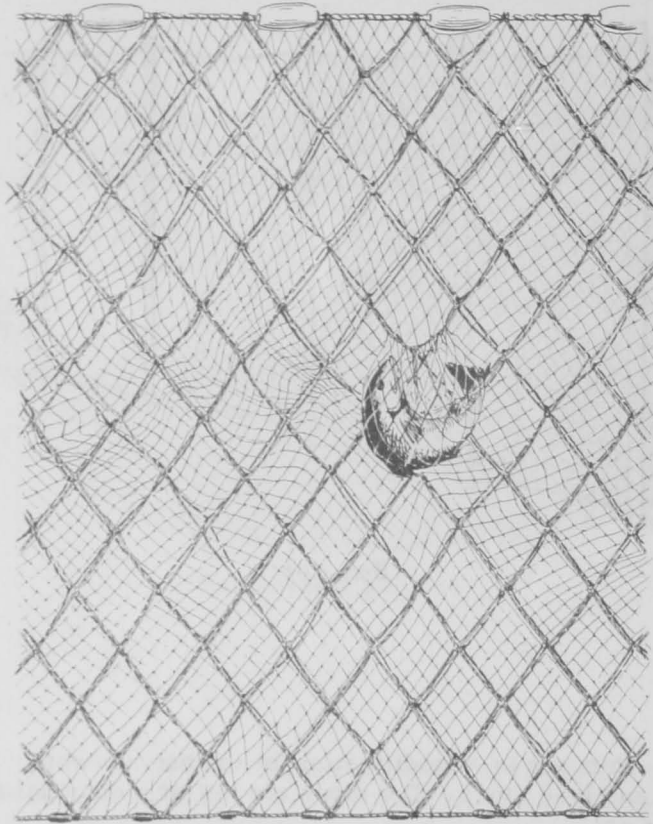
This net is a modification of the bar net which has ropes rather than laths between the cork and lead lines. The ropes are run at a diagonal angle rather than at a right angle as in the bar net.



Rip rap net

TRAMMEL NET

This type of fishing gear has three panels of netting which are suspended from a common cork line and attached to a single bottom or lead line. The two outside webs or walls of netting are of a larger mesh than the inside webbing. The inside net has a greater depth and hangs loosely between the outer panels of webbing. A fish striking from either side passes through the large-mesh outer webbing and hits the small-mesh netting, which is carried through one of the openings of the other large-mesh webbing, forming a sack or pocket in which the fish is entrapped. A trammel net is usually fished by drifting or fastened to poles.



Trammel net

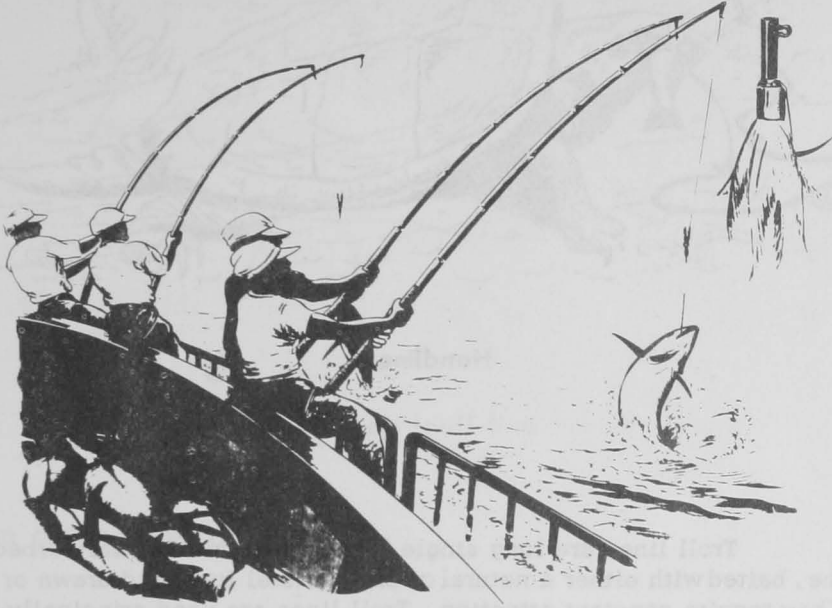
LINES

LINES

Lines are fished in many different ways. Originally used to catch a single fish, they have developed into a fishing method which can be used to capture many fish on a single line. They can be fished as a single line and hook held by a fisherman, or as a longline to which are attached many hooks or baits. Lines can be anchored or allowed to drift at any level from the surface to the bottom of the sea, or towed behind a moving boat (trolling). Lines are commercially important in the red snapper, halibut, salmon, tuna, and crab fisheries and to a somewhat lesser extent in the cod and fresh-water fisheries. The Bureau of Commercial Fisheries classifies fishing lines as handline, troll, longline or setline with hooks, trot with baits, and snaglines.

HANDLINES

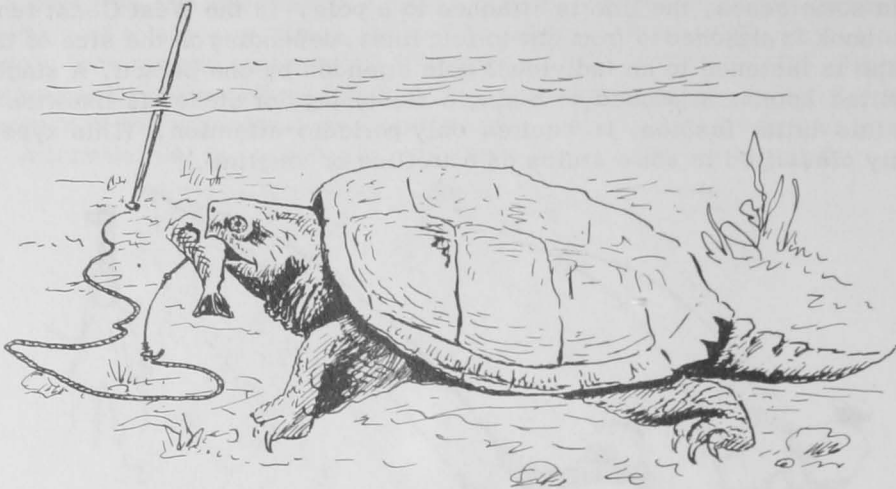
A handline is a single line with one or more hooks held or attended by one person. In some cases, the line is attached to a pole. In the West Coast tuna fishery, a single barless hook is attached to from one to four lines, depending on the size of the fish being taken. Each line is fastened to an individual pole attended by one person. A single line, with one or more baited hooks, attached to a single float, jug, or stake, is likewise a handline. When used in this latter fashion, it requires only periodic attention. (This type of gear has been incorrectly classified in some states as a trotline or longline.)



Two-pole tuna fishing



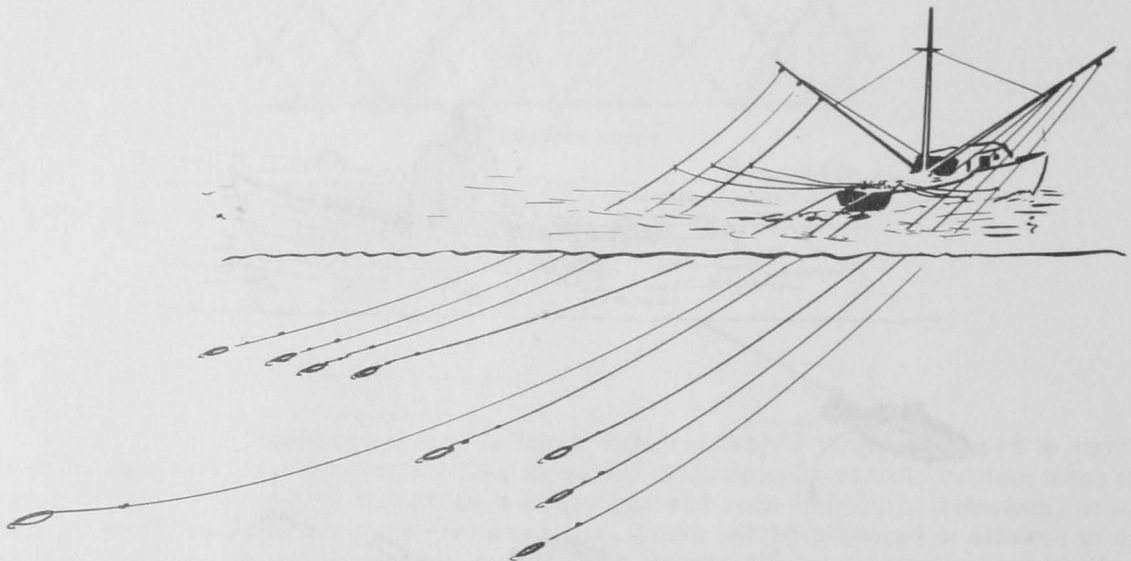
Handline



Handline

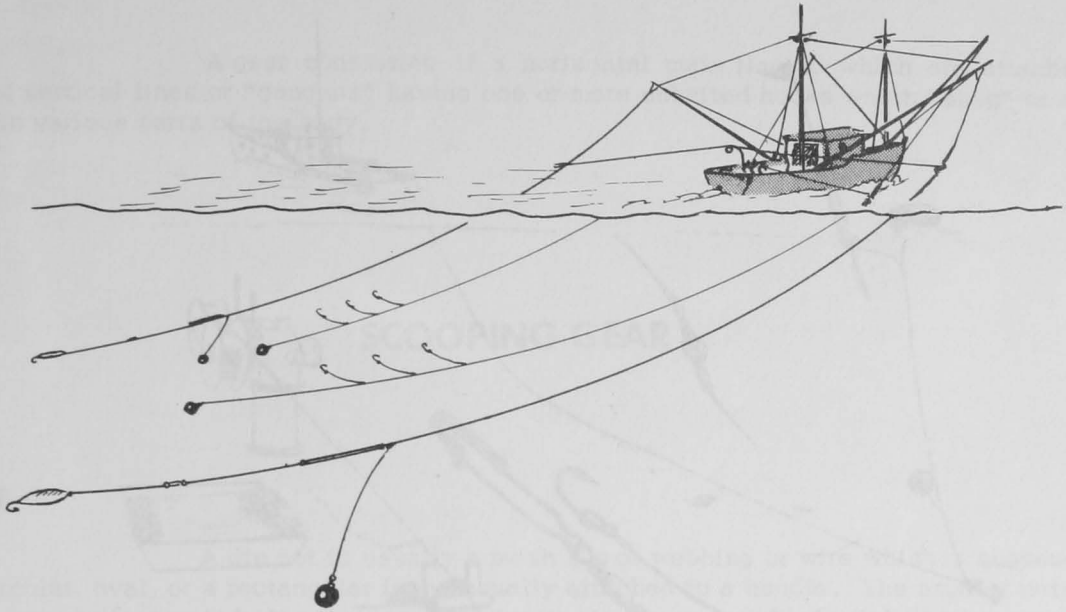
TROLL LINES

Troll lines are long single lines, with one or more barbed hooks at the free end of the line, baited with either a natural or an artificial lure, and drawn or towed behind a moving boat. They require constant attention. Troll lines are used principally in the salmon and tuna fisheries.



Tuna troll line

TROLL LINES - continued

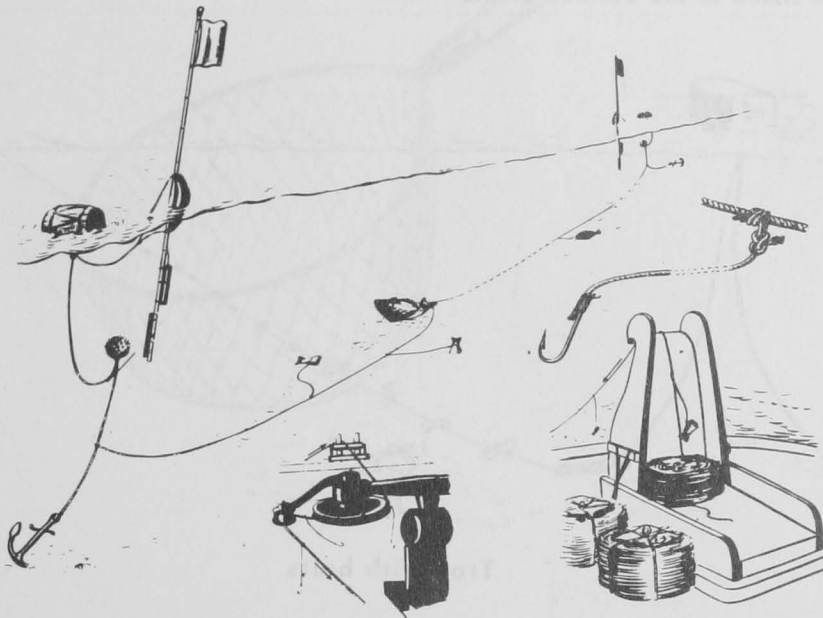


Salmon troll line

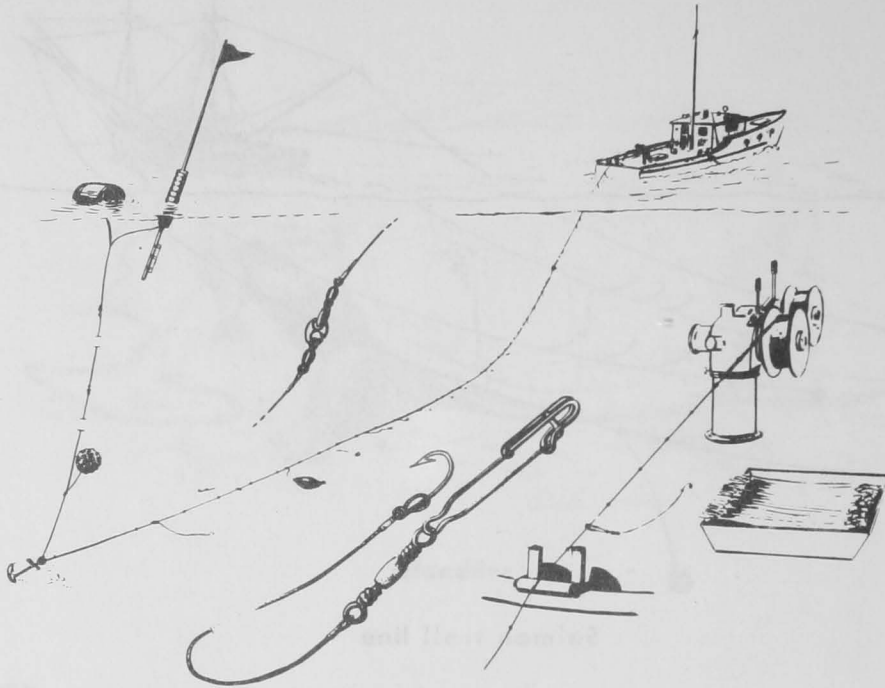
LONGLINE OR SETLINE, WITH HOOKS

This type of gear is an extremely long fishing line with a series of baited hooks on short, separate, but attached, lines. The gear can be anchored or left drifting and requires only periodical attention.

The longline is known as a "trawl line" in New England, a "setline" on the Pacific Coast, and as a "trotline" in the South and inland waters. Although this type of fishing method was once important in the New England fisheries, it has been supplemented during the past twenty years by the otter trawl. However, in the halibut fisheries off the Northwest Coast of the United States this form of fishing continues.



Halibut longline

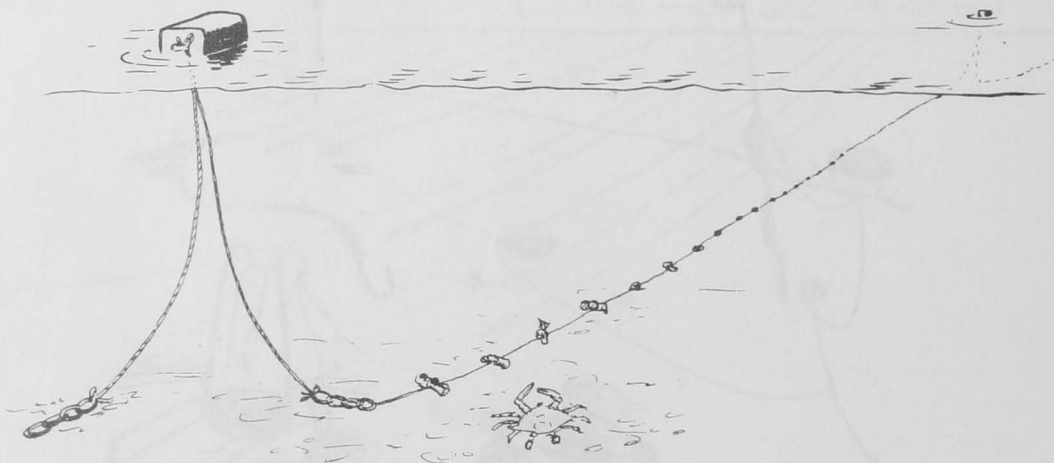


Steel cable longline

TROT, WITH BAIT

This type of gear consists of a long horizontal main line to which baits are tied, either directly or to short lines known as "gangens" which are attached to the main line. It is also known as a "trotrline with baits" in the South.

In Virginia, there is used a so-called patent "trotrline" for capturing hard crabs. The fishing method is the same but a special dip net removes the crabs from the longline as it is lifted to the surface of the water.



Trot with baits

SNAGLINE

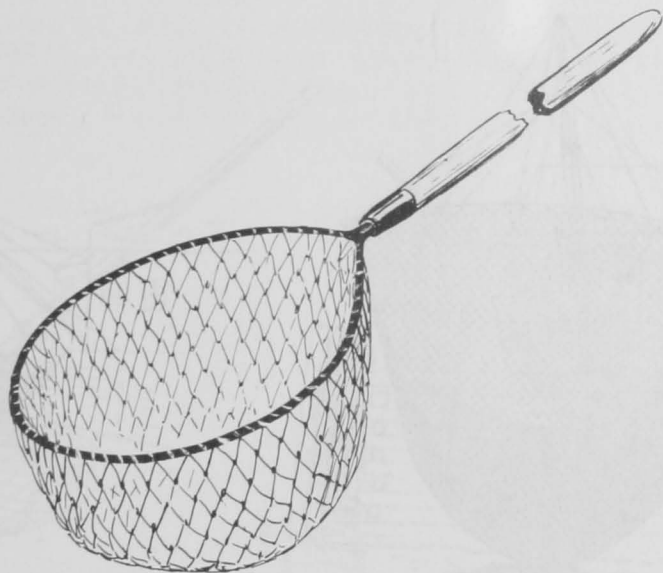
A gear consisting of a horizontal main line to which are attached a number of vertical lines or "gangens" having one or more unbaited hooks which "snag" or hook the fish in various parts of the body.

SCOOPING GEAR

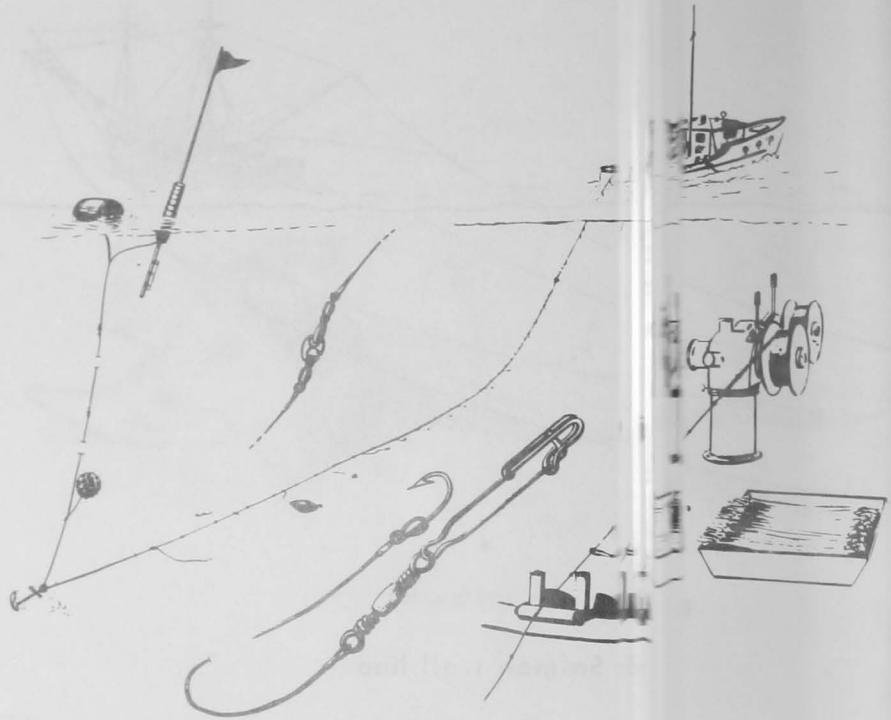
DIP NET

A dip net is usually a mesh bag of webbing or wire which is suspended from a circular, oval, or a rectangular frame usually attached to a handle. The smaller nets of this type are hand operated, but the bigger ones are power operated. In California, dip nets are called "brail" or "scoop nets." The "bully net" of Florida, used for capturing spiny lobsters is also a dip net with a hoop at right angles to the handle.

The fishing method used to capture fish or shellfish with this type of gear is to submerge the net and then pull it rapidly out of the water so as to capture any fish or crustaceans which happen to be over it.



Dip net



Steel cable longline

TROT, WITH BAITS

This type of gear consists of a long horizontal main line to which baits are tied, either directly or to short lines known as "gangers" which are attached to the main line. It is also known as a "tropline" with baits in the South.

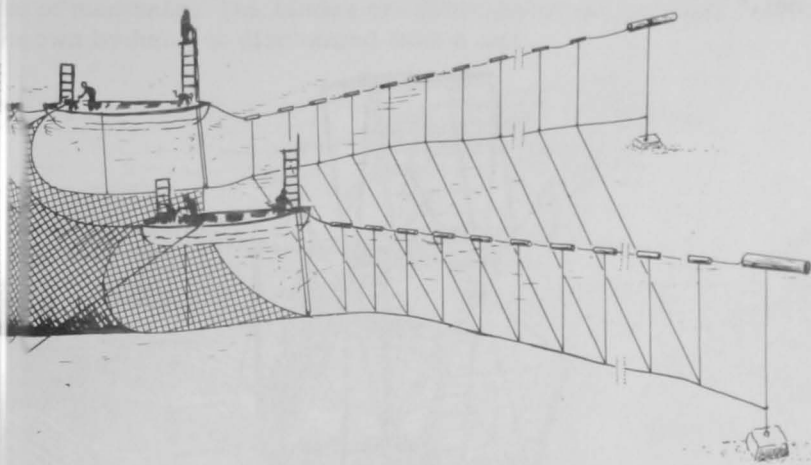
In Virginia, there is used a so-called patent "tropline" for capturing hard crabs. The fishing method is the same but a special net removes the crabs from the longline as it is lifted to the surface of the water.



Trot with baits

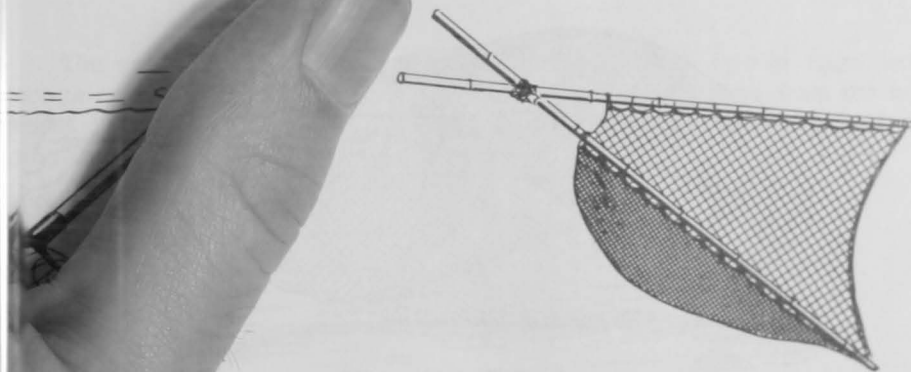
REEF NET

This type of fishing gear is used, mainly by Indians, in the State of Washington. It is used between the reefs of Puget Sound for salmon. When the salmon are observed to have gathered over the square netting in front of the rectangular bunt, the weighted lead line of the squares is raised quickly to the surface, impounding the fish. The salmon are guided into the narrow leads of ropes.



Reef net

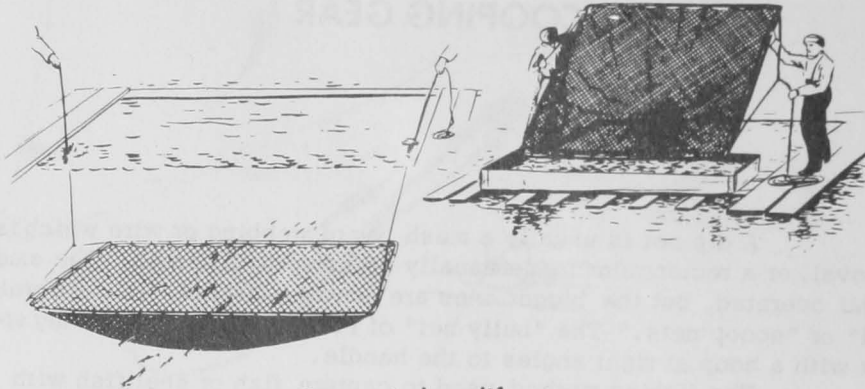
A pushnet is a modification of a dip net. It is constructed of a shallow bag attached to a wooden or metal frame which has a handle. In fishing, it is pushed along the bottom in shallow water.



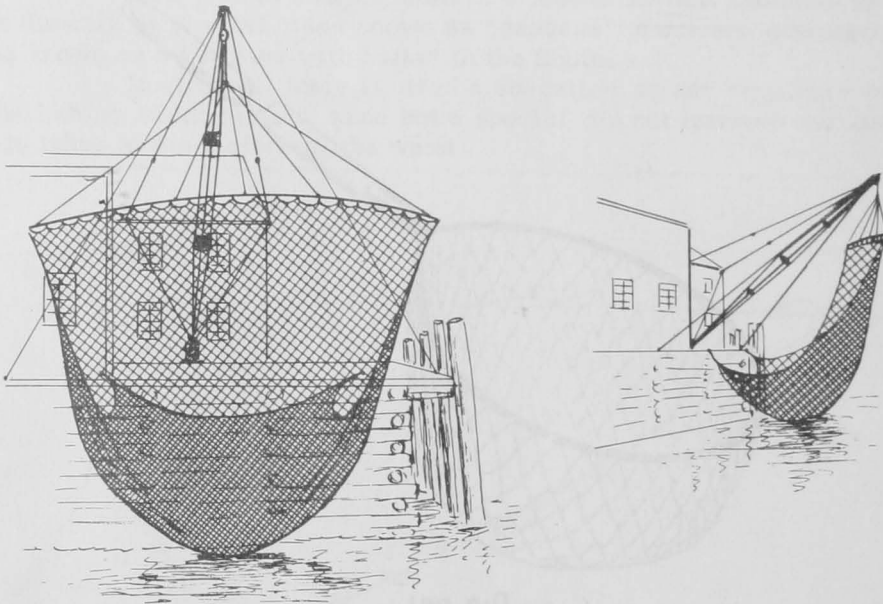
Push nets

LIFT NET

The lift net has a metal frame, usually round or rectangular but sometimes of other shapes, which supports a shallow bag of netting. Generally the net is baited and is suspended by a line and bridles. It is lowered to the bottom for variable lengths of time and then lifted rapidly to the surface in order to prevent the escape of any fish or crustaceans which have been attracted to the bait. In Washington, this type of net is defined as a "ring net," in Florida as a "hoop net," in the Central Gulf area a "drop net," and at the same time "drop dip net" has been used in other areas. In Michigan and Wisconsin this type of net is legally defined as a "dip net."



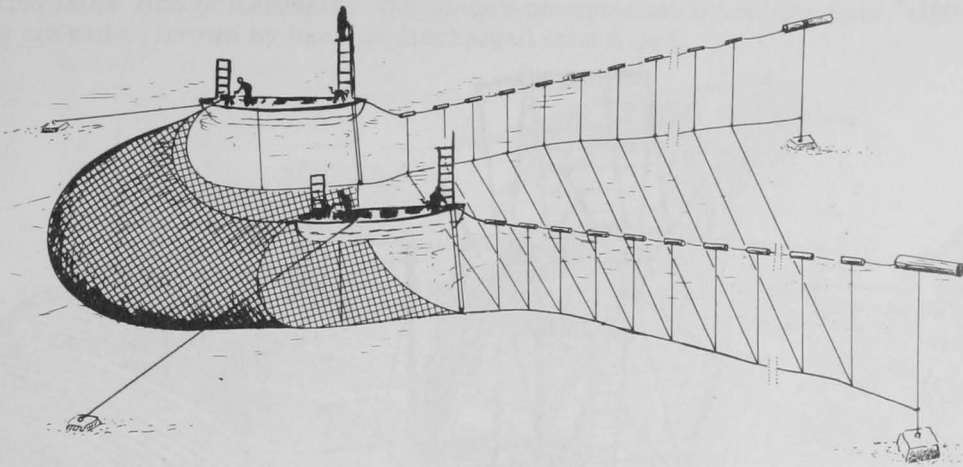
Great Lakes lift net



Maine lift net

REEF NET

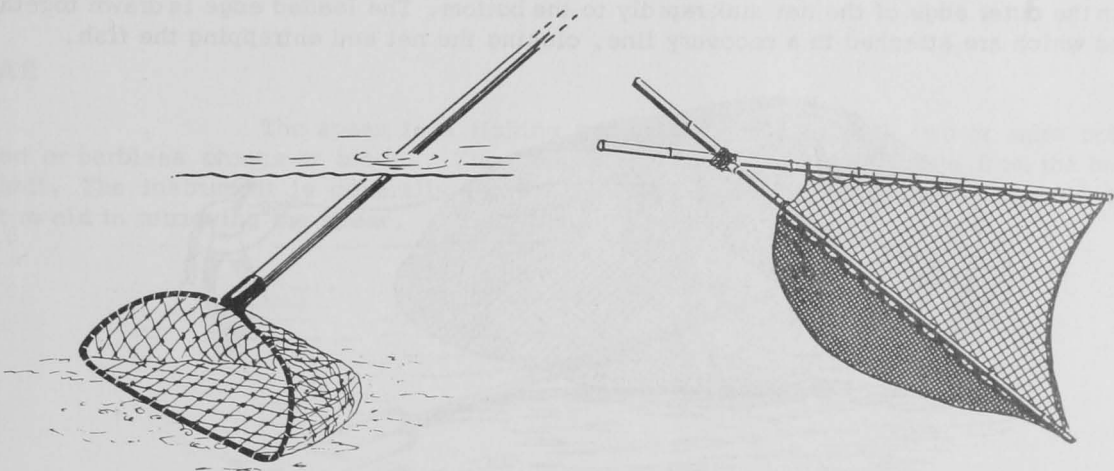
This type of fishing gear is used, mainly by Indians, in the State of Washington. It is fished between the reefs of Puget Sound for salmon. When the salmon are observed to have passed over the square netting in front of the rectangular bunt, the weighted lead line of the square is raised quickly to the surface, impounding the fish. The salmon are guided into the net by leads of ropes.



Reef net

PUSH NET

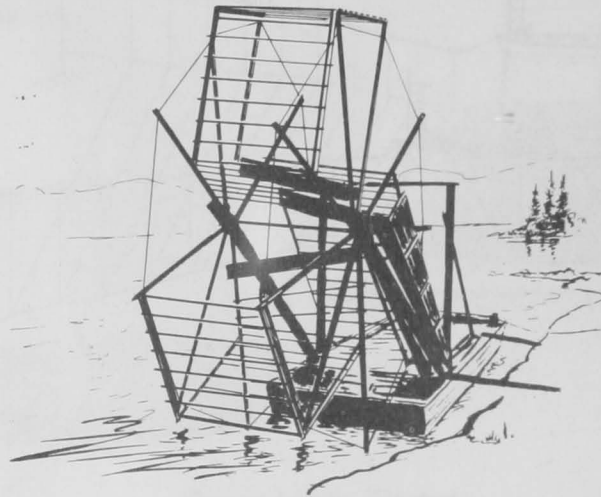
A push net is a modification of a dip net. It is constructed of a shallow wire or webbed mesh bag attached to a wooden or metal frame which has a handle. In fishing, it is pushed over the bottom in shallow water.



Push nets

FISH WHEEL

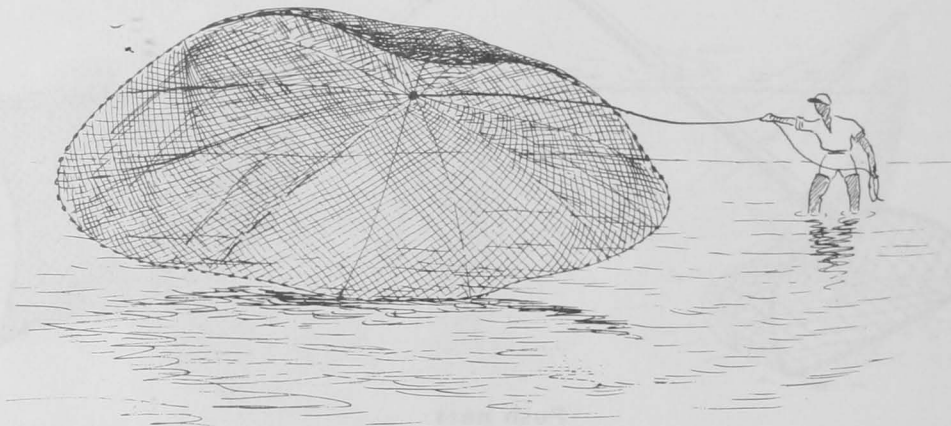
This is a fishing device consisting of a series of lift nets attached to a circular frame operated by the current of a river. As a fish swims near the wheel, it is scooped up, slides toward the axle as the wheel turns, and is then deposited in a box or scow. Although not permitted to operate commercially, natives and traders along the Yukon and other northern rivers use them to catch their winter supply of food. This type of gear might also be called an "automatic dip net."



Fish wheel

CAST NET

This is a circular net thrown by hand. The purpose of this method of fishing is to cover the fish with a cone-shaped net. When thrown on the water's surface, the leads on the outer edge of the net sink rapidly to the bottom. The leaded edge is drawn together by ropes which are attached to a recovery line, closing the net and entrapping the fish.

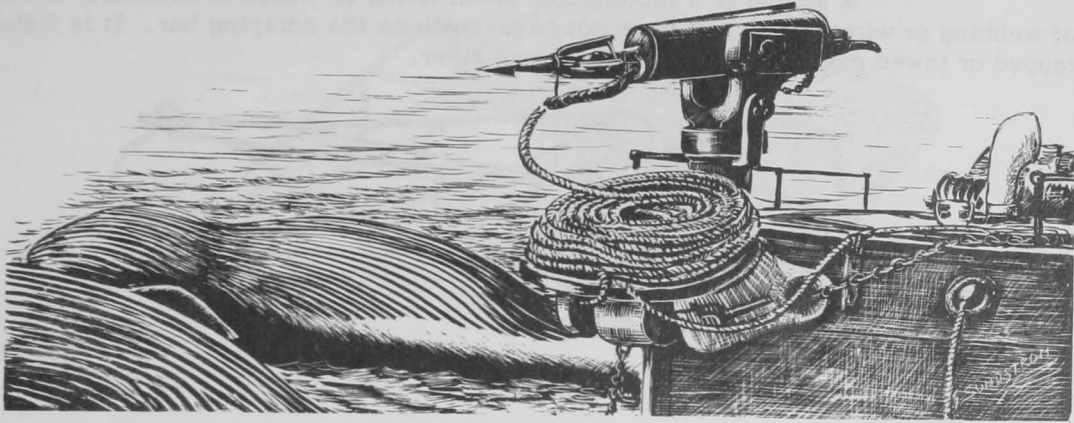


Cast net

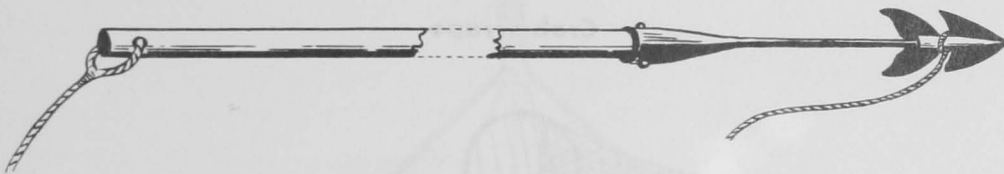
IMPALING OR WOUNDING GEAR

HARPOONS

Harpoons are instruments with pointed barbed blades which are used in capturing large fish or mammals. The blades are detachable from the pole, shaft, or handle. Harpoons are either thrown by hand or discharged from a gun.



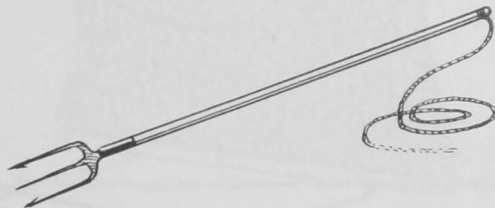
Whale harpoon gun



Swordfish or tuna harpoon

SPEAR

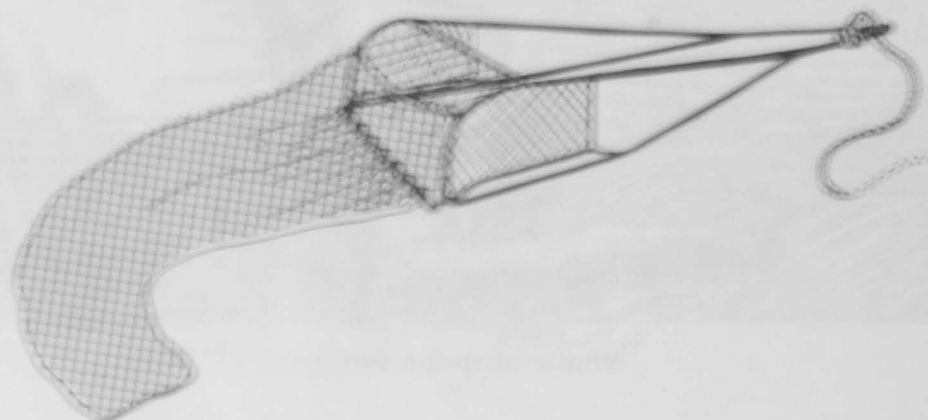
The spear is a fishing implement provided with two or more pointed barbed or barbless prongs or blades. The blades are usually not detachable from the handle or shaft. The instrument is generally thrown by hand. A rope is sometimes fastened to the shaft to aid in retrieving the spear.



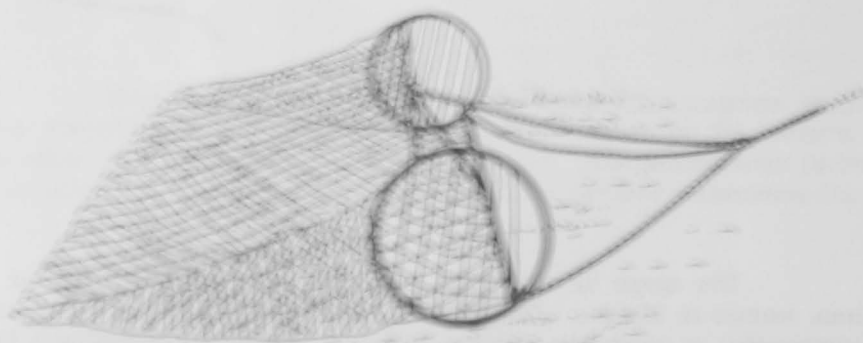
Spear

SCRAPES

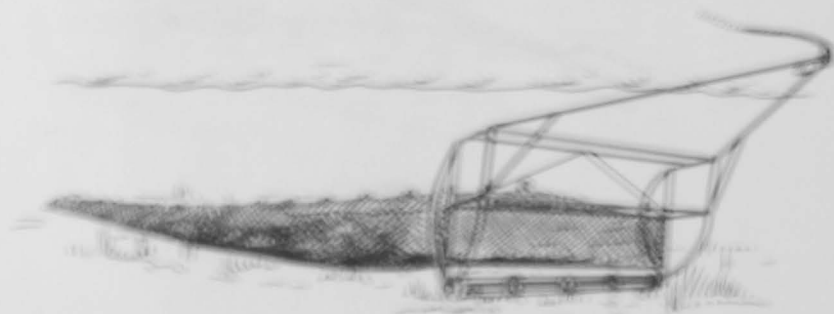
A scrape is a rectangular metal frame to which is attached a baglike pocket of webbing or wire netting. It does not have teeth on the scraping bar. It is fished by being dragged or towed over the bottom of the bay or river.



Crab scrape



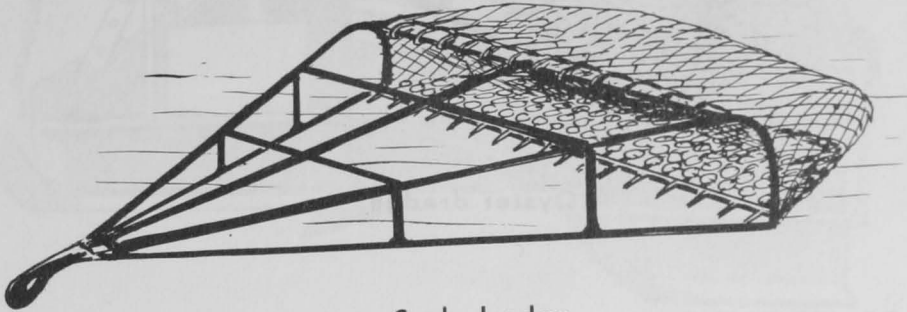
Flounder scrape



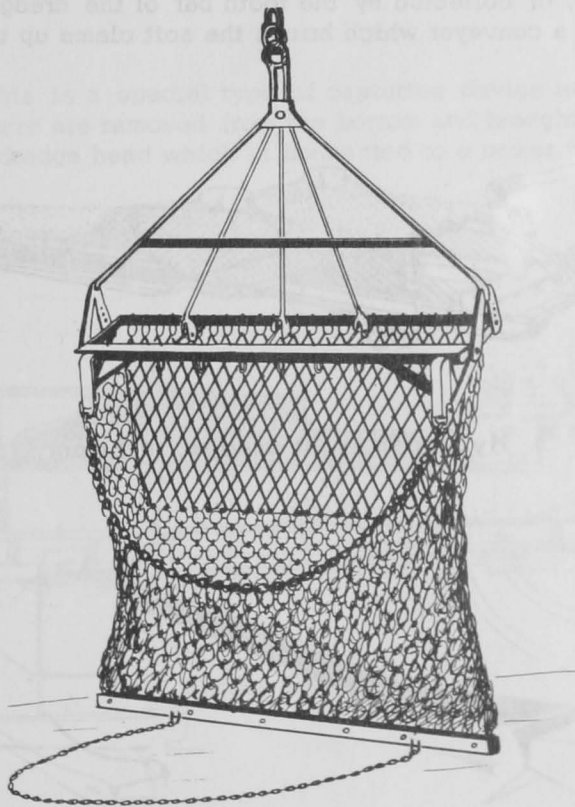
Bait string scrape or trawl

COMMON DREDGES

The common dredge consists of a metal triangular or oblong frame, to which is attached a bag net made of iron rings, S-hooks, and/or cotton cording. The frame is equipped with a raking bar generally with teeth on the lower edge. The implement is used in gathering shellfish (oysters, crabs, and scallops). There is really no standard design for a dredge; each fisherman has his own ideas on what makes an efficient gear and modifies and alters the basic design to suit himself. Dredges are of various sizes and dimensions.



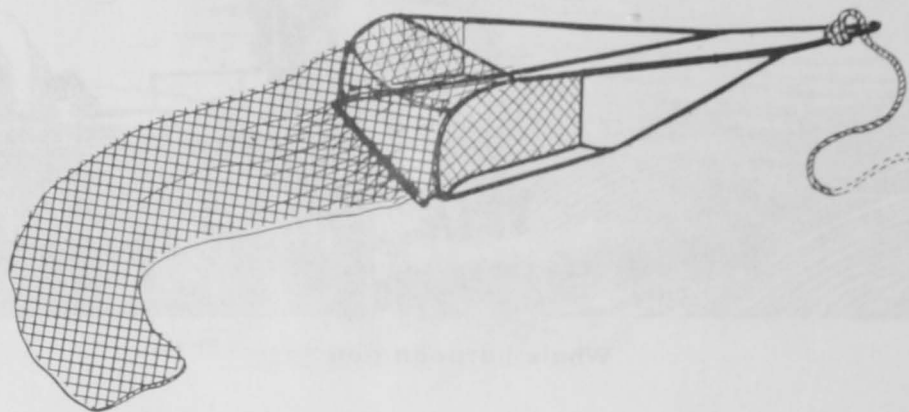
Crab dredge



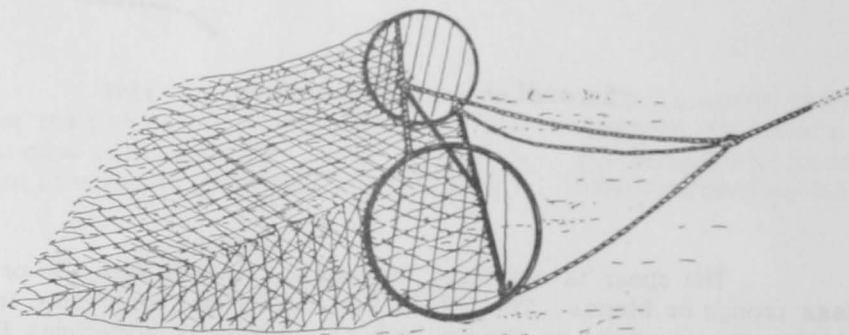
Scallop dredge

SCRAPES

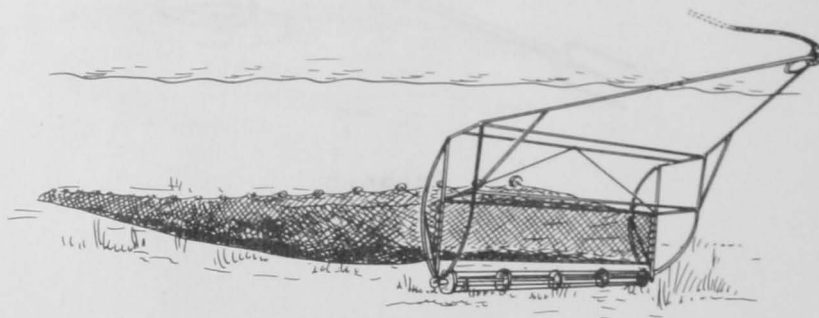
A scrape is a rectangular metal frame to which is attached a baglike pocket of webbing or wire netting. It does not have teeth on the scraping bar. It is fished by being dragged or towed over the bottom of the bay or river.



Crab scrape



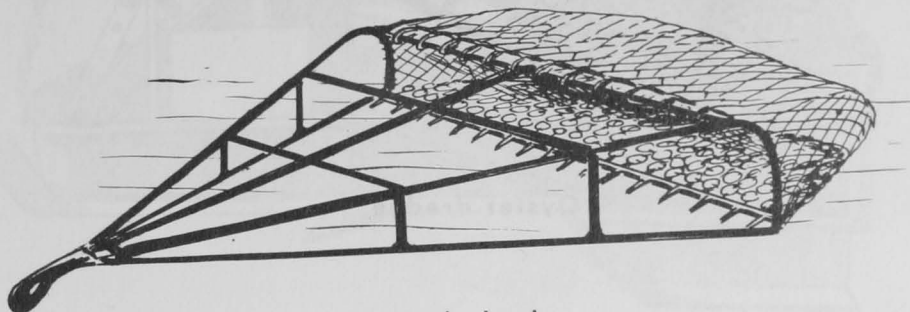
Terrapin scrape



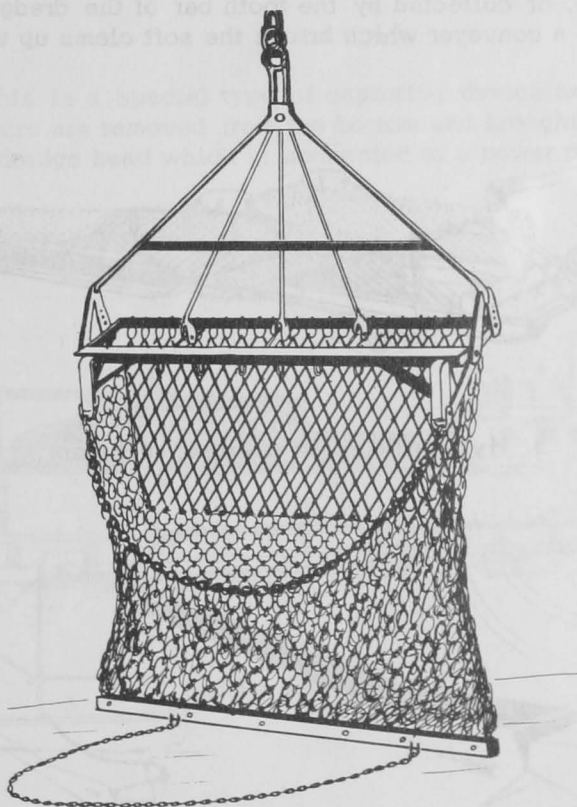
Bait shrimp scrape or trawl

COMMON DREDGES

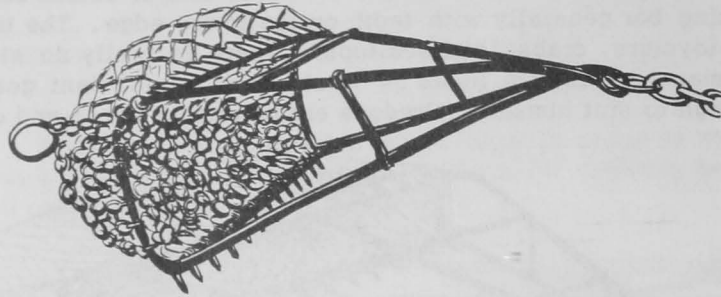
The common dredge consists of a metal triangular or oblong frame, to which is attached a bag net made of iron rings, S-hooks, and/or cotton cording. The frame is equipped with a raking bar generally with teeth on the lower edge. The implement is used in gathering shellfish (oysters, crabs, and scallops). There is really no standard design for a dredge; each fisherman has his own ideas on what makes an efficient gear and modifies and alters the basic design to suit himself. Dredges are of various sizes and dimensions.



Crab dredge



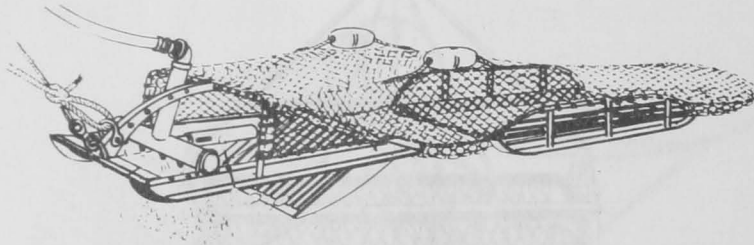
Scallop dredge



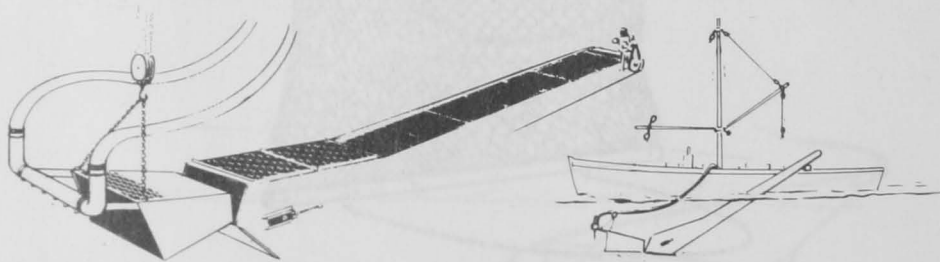
Oyster dredge

HYDRAULIC OR JET DREDGES

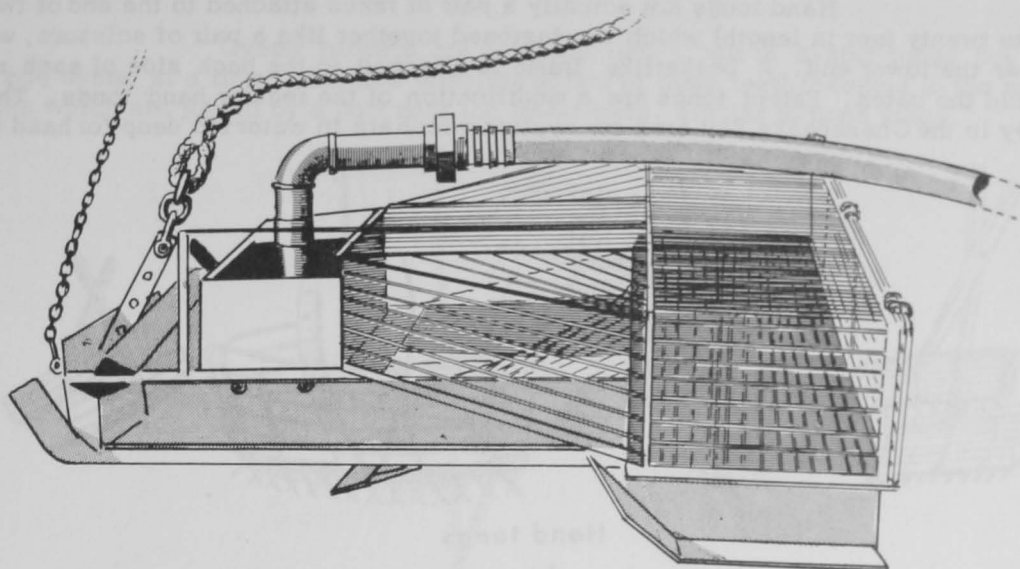
With this type of equipment, surf, soft, or hard clams are washed out of the bottom by action of jets of water from a pipe attached in front of the tooth bar. The pressured water is supplied by a high powered pump on the fishing vessel. The shellfish are then either washed on to, or collected by the tooth bar of the dredge. The Maryland type of hydraulic dredge utilizes a conveyer which brings the soft clams up to the vessel.



Hydraulic or jet dredge, surf clam



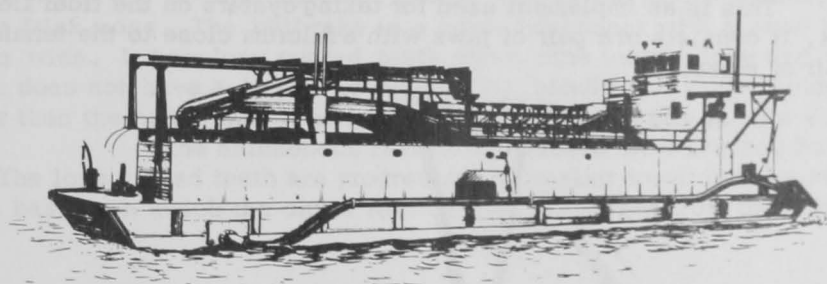
Hydraulic or jet dredge, soft clam



Hydraulic or jet dredge, hard clam

SUCTION DREDGE

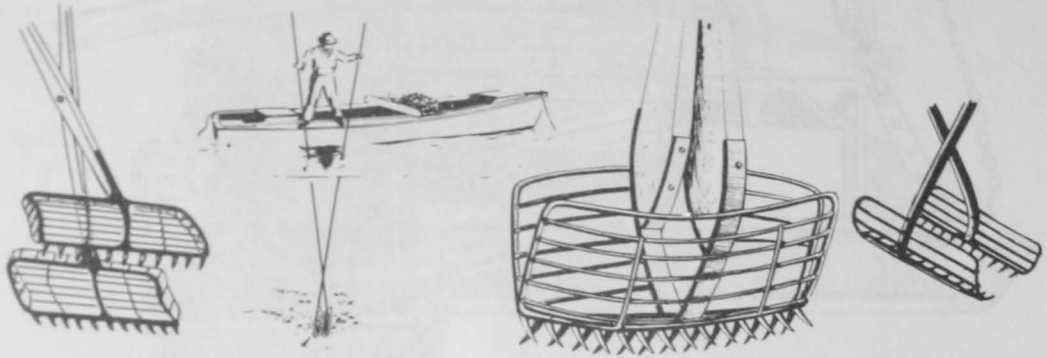
This is a special type of capturing device used almost solely in the oyster industry. The oysters are removed from the bottom and brought to the surface by action of suction applied to the dredge head which is connected to a power pump on board the dredge vessel.



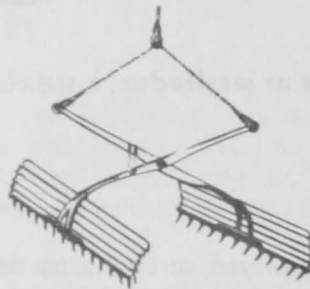
Suction dredge

TONGS

Hand tongs are actually a pair of rakes attached to the end of two long poles (up to twenty feet in length) which are fastened together like a pair of scissors, with the fulcrum near the lower end. A basketlike frame is attached to the back side of each rake in order to hold the catch. Patent tongs are a modification of the regular hand tongs. They are used mainly in the Chesapeake Bay area for oysters which are in water too deep for hand tongs.



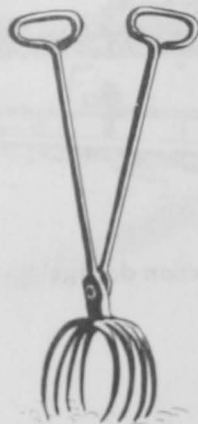
Hand tongs



Patent tongs

OYSTER GRABS

This is an implement used for taking oysters on the tidal flats of South Carolina and Georgia. It consists of a pair of jaws with a fulcrum close to the terminal end and is operated like a pair of scissors.



Oyster grabs

OYSTER NIPPERS

Oyster nippers are operated like a pair of oyster tongs but can only pick up one oyster at a time. The gear consists of two or three teeth fastened to the end of two long poles which are joined by a bolt near the lower ends, similar to hand tongs.

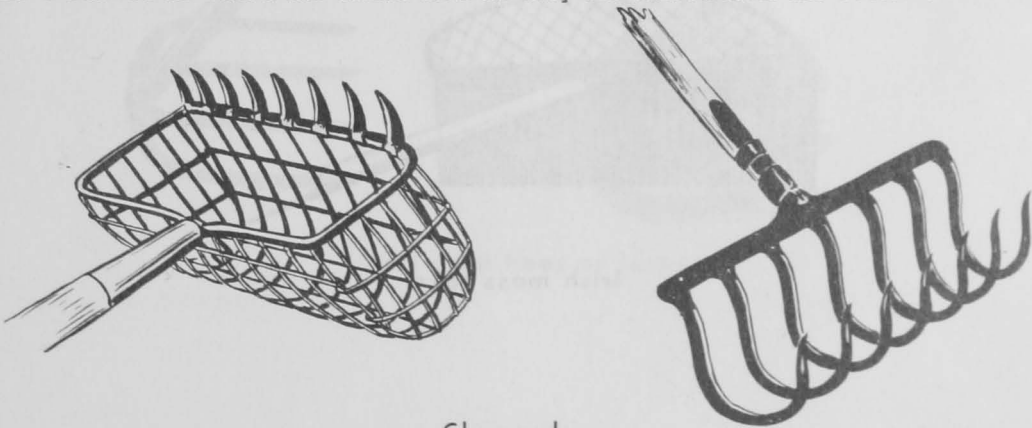


Oyster nippers

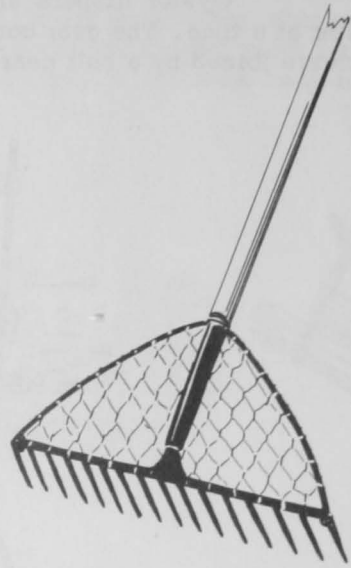
RAKES

There are two different types of rakes used in the commercial fisheries. They are the common clam rake and the bull rake. The common rake for clams is much like a garden rake except that the teeth are longer and sharper. It is equipped with a wire mesh basket or apron which holds the catch. It is generally used in very shallow water. There are many modifications which are used in different areas. One of the modifications, in Maine, is used for gathering Irish moss. The bull rake is a large implement with a head between twenty and thirty inches wide. It has long curved teeth about nine inches long and unlike the common hand rake it does not have a basket or apron. Its handle is usually longer and is fished in deeper water than the hand rake. The bull rake is used generally in New England.

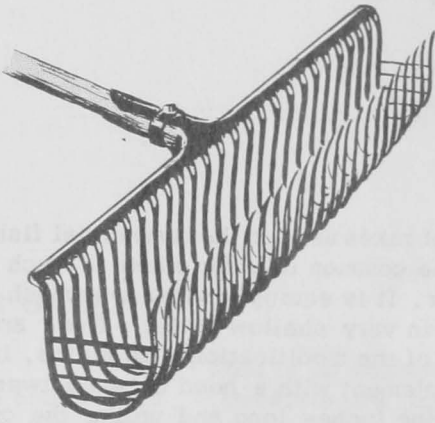
The Shinnecock rake is a modified New England bull rake used only in Maryland. The long curved teeth are progressively smaller towards the ends of the rake head. This forms a basket on which the clams rest as they are raised from the bottom.



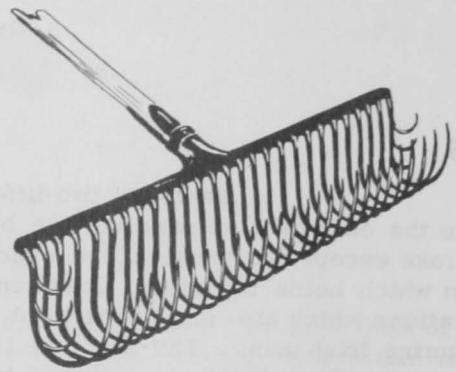
Clam rakes



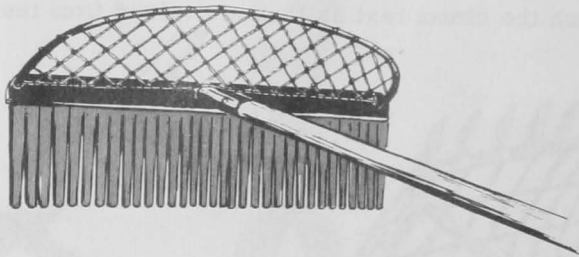
Clam rakes



Bull rake



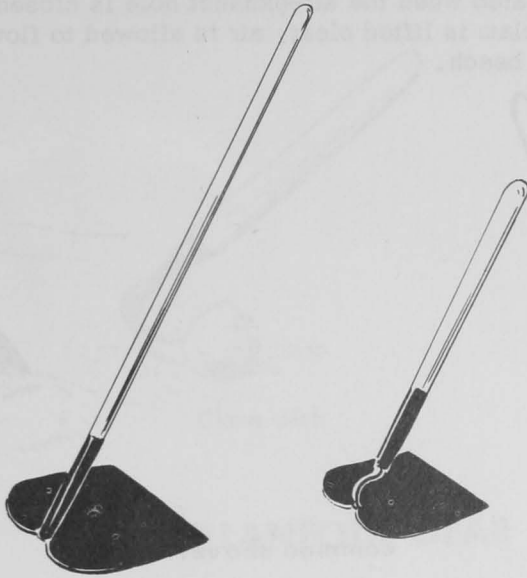
Shinnecock rake



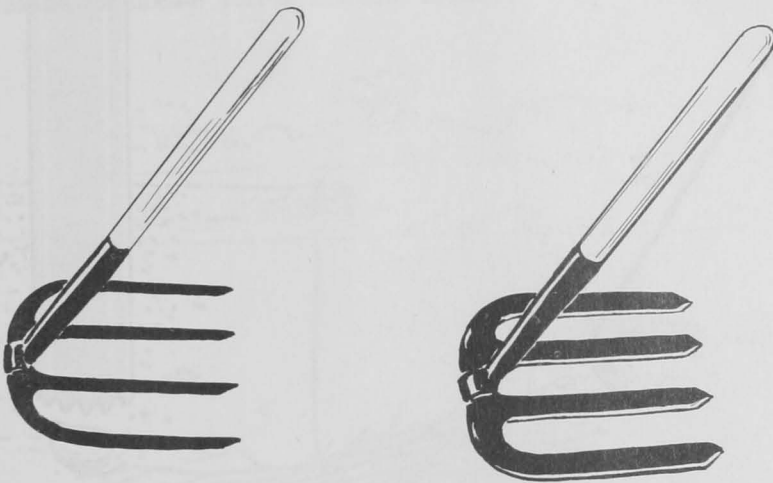
Irish moss rake

HOES AND FORKS

The hoe is an implement or instrument consisting of a handle terminating in a metal shank with two or more prongs or tines set transversely to the handle. It is somewhat similar to a potato fork but the prongs are set at right angles to the handle. In New England it is locally called a "clam fork." A common garden hoe with a thin flat blade set transversely to a long handle is also used in some areas.



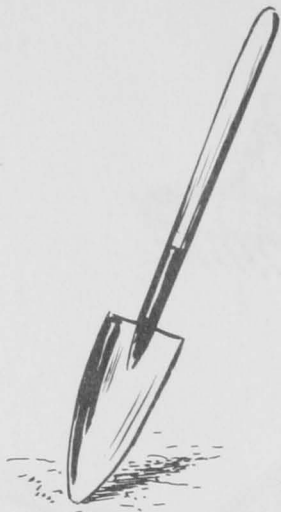
Soft clam hoes



Soft clam hoes or forks

SHOVELS

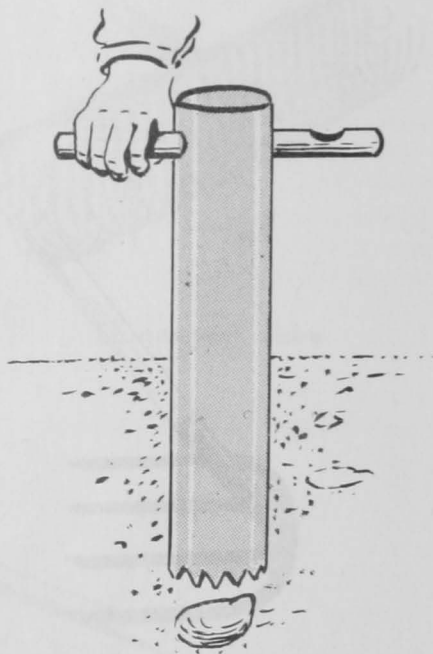
The shovel is an implement consisting of a broad flat scoop of thin metal slightly turned up at the edges and attached to a handle. Various types of shovels are used in digging bivalve shellfish. On the Pacific Coast the "clam gun" is a modification of the shovel. Another so-called "clam gun," which is used in Washington and Oregon by noncommercial fishermen, is a tube which is pushed down around an imbedded clam. On pulling or lifting the tube, a partial vacuum is created when the air-exhaust hole is closed with a finger. When the tube of sand containing the clam is lifted clear, air is allowed to flow back into the tube, and the sand and clam fall to the beach.



Common shovel



California clam gun



Washington clam gun

PICKS

A pick is a two- or three-pronged instrument set in a short wooden handle. It is used in gathering of hardshell clams and oysters.

Another instrument is known as a mussel pick. The mussel pick is a rod flattened at one end. It is used in gathering fresh-water mussels by inserting the rod between the shell of the mussel. A device similar to the mussel pick is sometimes used in taking oysters.

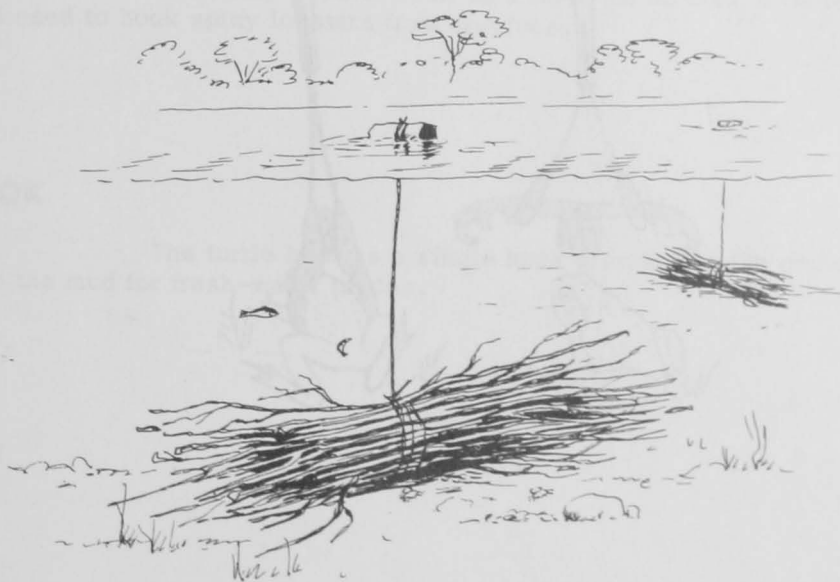


Clam pick

MISCELLANEOUS GEAR

BRUSH TRAP

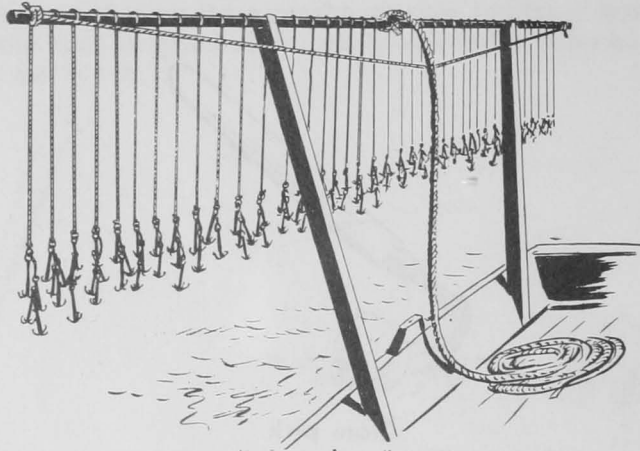
A brush trap is an anchored bunch or bundle of long twigs or branches of trees. While resting on the bottom, this provides a hiding place for crabs about to shed their old hard shells. When a brush trap is raised to the surface, a large dip net is slipped under it. The trap is then shaken vigorously and the crabs fall out into a dip net. This type of gear is used in Louisiana for taking soft or shedder crabs.



Brush trap

CROWFOOT BAR

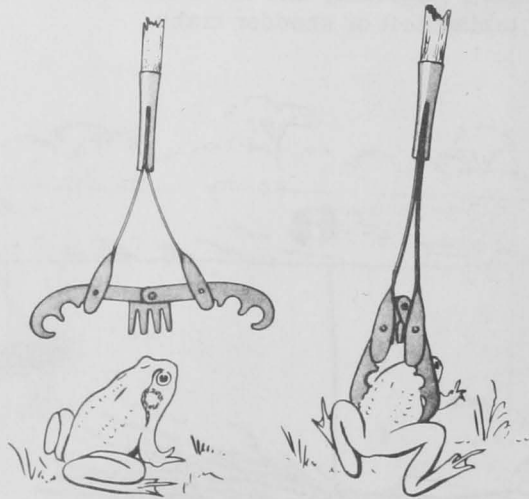
This type of equipment consists of a large metal bar to which are attached numerous lines closely set together. To each line there is affixed several barbless hooks. When the gear is dragged over the bottom, the hooks catch between the shells of the fresh-water mussel lifting the animal from the bottom. It is only used in inland waters where fresh-water mussels are taken commercially.



Crowfoot bar

FROG GRAB

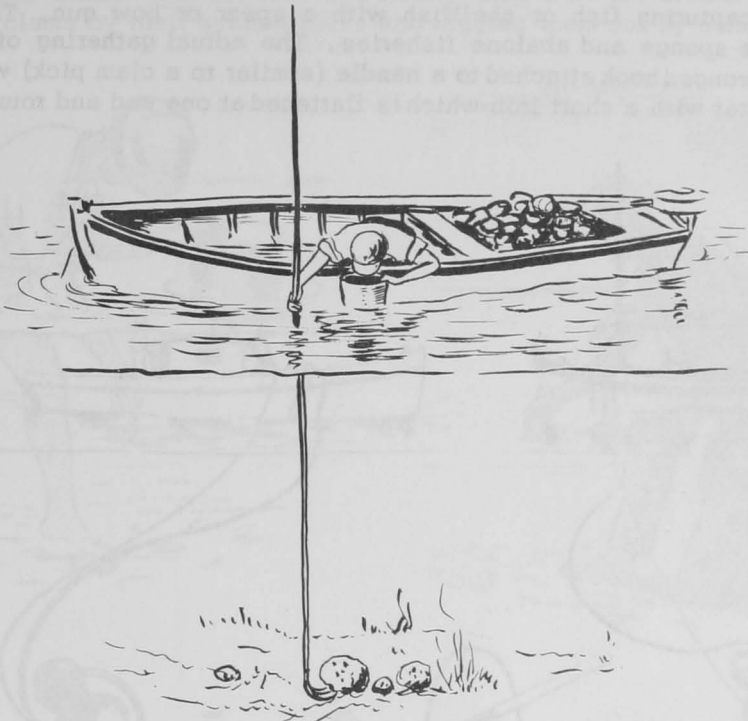
This is an implement consisting of a pair of jaws fastened to the end of a pole and capable of being cocked open. When the trigger comes in contact with a frog, it releases the open jaws which snap together around the frog. This type of gear is used mainly in Louisiana.



Frog grab

SPONGE HOOKING

A sponge hook is a two- or three-pronged metal hook inserted at the end of a long pole and used mainly in the Key West area of Florida to gather sponges.



Hooker method

SPINY LOBSTER HOOK

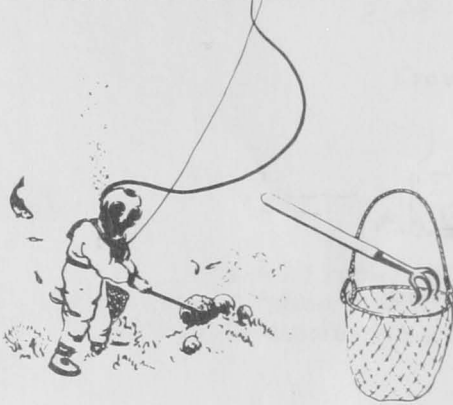
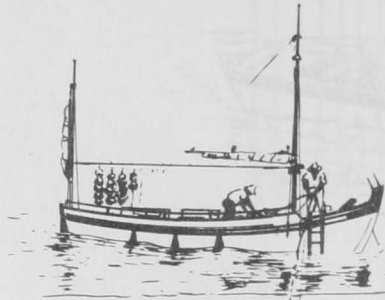
The spiny lobster hook is a large metal fish hook fastened to the end of a pole and used to hook spiny lobsters from crevices.

TURTLE HOOK

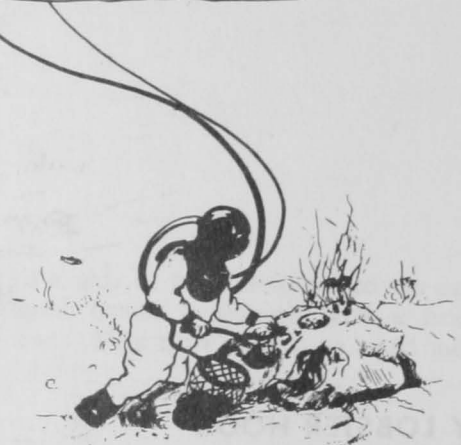
The turtle hook is a single hook attached to the end of a pole and used for probing in the mud for fresh-water turtles.

DIVING OUTFITS

A diving outfit may consist of a face mask supplied with air from a tank carried on the back of the diver, or a regular diving suit which encases the diver and is supplied air by a pump on the deck of a vessel. The first method, commonly called a skin diving outfit, is used in capturing fish or shellfish with a spear or bow gun. The regular diving outfit is used in the sponge and abalone fisheries. The actual gathering of sponges is done with a small three-pronged hook attached to a handle (similar to a clam pick) while abalones are pried from their habitat with a short iron which is flattened at one end and rounded into a handle at the other end.



Sponge diving



Abalone diving



Skin diver and speargun

BY HAND

This term means the gathering or collecting of fish or shellfish without the aid of any tools or equipment. This includes skin diving with a snorkel tube, "treading" of clams (feeling for the clams with the feet and lifting them from the bottom with one foot), and "signing" (locating clams by their syphon holes and digging them out by hand).



Gathering by hand

GLOSSARY

To establish uniformity in the classification of commercial fishing gear, there follows a list of common or local names for fishing gear; the locality where the name is used; and the name adopted for use in Bureau reports.

Common or local names	Locality where used	Name as shown in Bureau reports
Anchor gill	.....	Anchor gill net
Anchor gill net	.....	Anchor gill net
Bag net	.....	Bag net
Bait line	New York	Longline with hooks
Bait net	Wisconsin	Hoop net
Bait net	California	Lampara net
Bank line	Inland waters	Longline with hooks and/or handline
Bar net	Ohio	Gill net
Barrel net	Inland waters	Hoop net
Basket (slat) net	Wisconsin	Hoop net
Beach net	California	Haul seine
Beach seine	.....	Haul seine
Beam trawl	.....	Beam trawl
Beam trawl	Massachusetts	Otter trawl
Block net	California	Stop seine
Bow net	South Carolina	Dip net
Box trap	.....	Pot

(Continued on next page)

Common or local names	Locality where used	Name as shown in Bureau reports
Brail	.....	Dip net
Brail	Alabama, Tennessee	Crowfoot bar
Brush net	Georgia, Tennessee	Hoop net
Brush trap	Louisiana	Brush trap
Brush weir	Washington	Weir
Buck net	Maryland	Runaround gill net
Buffalo net	Wisconsin	Hoop net
Bully net	Florida	Dip net
Bush line	.....	Longline with hooks
Cast net	.....	Cast net
Channel net	North Carolina	Bag net
Chinese shrimp net	California	Bag net
Clam fork	New England	Hoe
Clam gun	Pacific Coast States	Shovel
Crab pot or trap	Pacific Coast States	Pot
Dip net	.....	Dip net
Crab net	.....	Pot
Crawfish pot	Washington, Oregon, and Wisconsin	Pot
Crib net	Ohio	Pound net
Crowfoot bar	Inland waters	Crowfoot bar
Dip bag net	Washington	Dip net
Diver net	California	Drift gill net

(Continued on next page)

GLOSSARY

Common or local names	Locality where used	Name as shown in Bureau reports
Diving outfit:		
Abalone	California	Diving outfit
Sponge	Florida	Diving outfit
Mussel	Arkansas	Diving outfit
Drag seine	Washington	Haul seine
Dredge:		
Common	.....	Dredge
Jet	.....	Dredge
Suction	.....	Dredge
Drift gill	.....	Drift gill net
Drift gill net	.....	Drift gill net
Drop dip net	.....	Lift net
Drop net	Wisconsin, Michigan	Fyke net
Drop net	Texas	Lift net
Eel pot	.....	Pot
Eel weir	New York	Fyke net
Fiddler net	Inland waters	Hoop net
Fish trap	Inland waters	Pot
Fish trap	Pacific Coast and New England States	Pound net
Floating trap	Alaska, New England	Pound net
Fork	.....	Hoe
Frame net	Wisconsin	Fyke net

(Continued on next page)

Common or local names	Locality where used	Name as shown in Bureau reports
Frame trawl (shrimp)	Florida	Scrape
Frog grab	Louisiana	Frog grab
Fyke net	.....	Fyke net
Gig	Arkansas	Spear
Gobbler net	Michigan	Hoop net
Goose net	Oklahoma	Anchor gill net
Grabble	Arkansas, Mississippi, and Tennessee	By hand
Grabble	Kentucky	Snagline
Grain	Florida	Spear
Hand line	.....	Handline
Hand net	Michigan	Dip net
Harpoon	.....	Harpoon
Haul seine	.....	Haul seine
Hoe	Maine	Hoe
Hoop net	Inland waters	Hoop net
Hoop net	Florida	Lift net
Jitterbug	Texas	Bar and rip rap net
Jug line	Tennessee	Longline with hooks
Lampara net	.....	Lampara net
Lift net	.....	Lift net
Limb line	Tennessee, Arkansas	Longline with hooks
Lobster pot	.....	Pot

(Continued on next page)

GLOSSARY

Common or local names	Locality where used	Name as shown in Bureau reports
Long line	.....	Longline with hooks
Long seine	North Carolina	Haul seine
Long haul seine	North Carolina	Haul seine
Nipper	Maryland	Tong
Noodling	Kentucky	By hand
Otter trawl	.....	Otter trawl
Oyster dredge	.....	Dredge
Oyster grab	South Carolina and Georgia	Tongs
Parallel net	Delaware	Stake gill net
Paranzella net	.....	Paranzella net
Pick	Chesapeake Bay	Pick
Pole net	Washington	Drift gill net
Pot	.....	Pot
Pound net	Arkansas	Hoop net
Pound net	.....	Pound net
Pump net	South Carolina	Dip net
Purse seine	.....	Purse seine
Push net	.....	Push net
Rake	.....	Rake
Reef net	Washington	Reef net
Ring net	California	Purse seine, or Lampara net

(Continued on next page)

Common or local names	Locality where used	Name as shown in Bureau reports
Ring net	Washington	Lift net
Rip rap net	Alabama	Anchor or drift gill net
Row net	South Carolina	Stake gill net
Runaround gill net	.....	Runaround gill net
Salmon brail	Pacific Coast	Lift net
Salmon seine	.....	Purse seine
Sandpiper	Pacific Coast	Shovel
Scrap net	Connecticut	Dip net
Scoop net	California, Connecticut	Dip net
Scrape	.....	Scrape
Set gill	Pacific Coast	Anchor gill net
Set hooks	.....	Longline with hooks
Set line	.....	Longline with hooks
Set net	New Jersey, Oregon	Stake gill net
Set net	Georgia	Hoop net
Set net	California, Oregon	Anchor gill net
Set net	Washington	Anchor or stake gill net
Shad net	New Jersey	Stake and/or drift gill net
Shinnecock rake	Maryland	Rake
Shirred seine	New Jersey	Purse seine
Shoal gill net	Great Lakes	Anchor gill net

(Continued on next page)

GLOSSARY

Common or local names	Locality where used	Name as shown in Bureau reports
Shovel	.....	Shovel
Shrimp net	California	Bag net
Sink gill net	.....	Anchor gill net
Skimbow net	South Carolina	Dip net
Skirt net	Virginia	Runaround gill net
Slat basket	Inland waters	Pot
Slat net	Wisconsin	Pot
Slat trap	Virginia	Slat trap
Slat trap	Inland waters	Pot
Snag line	.....	Snagline
Snatching	Kentucky	Snagline
Spear	.....	Spear
Sponge hook	Florida	Hook
Stab net	Florida	Anchor gill net
Stab net	New Jersey	Runaround gill net
Stake gill net	.....	Stake gill net
Stake stop net	New York	Stop seine
Stop net	.....	Stop seine
Stop seine	.....	Stop seine
Sweep net	Virginia	Haul seine
Tangle net	.....	Anchor gill net
Thresh net	Virginia	Runaround gill net
Throw line	Tennessee	Longline with hooks

(Continued on next page)

Common or local names	Locality where used	Name as shown in Bureau reports
Throw net	Florida, Texas	Cast net
Tickling	Kentucky	By hand
Tide line	New York	Longline with hooks
Tong	.....	Tong
Trammel net	.....	Trammel net
Trap line	New York	Longline with hooks
Trap net	Great Lakes and Atlantic Coast	Trap net
Trap net	Rhode Island and Massachusetts	Pound net
Trap net	Michigan	Hoop or fyke
Trap	Pacific Coast	Pot
Trawl line	.....	Longline with hooks
Troll line	.....	Troll line
Trotline	Atlantic Coast	Longline with baits
Trotline with baits	.....	Longline with baits
Trotline with hooks	.....	Longline with hooks
Turtle hook	.....	Hook
Weir	.....	Weir
Wheel	.....	Wheel
Wing net.	Inland waters	Fyke net
Wire basket	Georgia	Pot
Wooden slat trap for spiny lobsters	Florida	Pot

GLOSSARY

Common or local names	Locality where used	Name as shown in Bureau reports
Shovel	.....	Shovel
Shrimp net	California	Bag net
Sink gill net	.....	Anchor gill net
Skimbow net	South Carolina	Dip net
Skirt net	Virginia	Runaround gill net
Slat basket	Inland waters	Pot
Slat net	Wisconsin	Pot
Slat trap	Virginia	Slat trap
Slat trap	Inland waters	Pot
Snag line	.....	Snagline
Snatching	Kentucky	Snagline
Spear	.....	Spear
Sponge hook	Florida	Hook
Stab net	Florida	Anchor gill net
Stab net	New Jersey	Runaround gill net
Stake gill net	.....	Stake gill net
Stake stop net	New York	Stop seine
Stop net	.....	Stop seine
Stop seine	.....	Stop seine
Sweep net	Virginia	Haul seine
Tangle net	.....	Anchor gill net
Thresh net	Virginia	Runaround gill net
Throw line	Tennessee	Longline with hook

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SELECTED LITERATURE ON FISHING METHODS AND GEAR

- Set 566 Construction and Catch Selectivity of Albacore Gill Nets Used in Central North Pacific
- Set 111 Equipment Note #1 - New All -Aluminum Salmon Gill -Net Boats Built for Alaska Fishery
- Set 333 Observations on Trawl - Door Spread and A Discussion of Influencing Factors
- Set 333 Equipment Note #2 - Pacific Coast Drum Trawling
- Set 222 Braided Synthetic Twines and Their Use in the New England Trawl Fishery
- Set 222 Equipment Note #4 - A Method of Making Electrical Trawl Cable Connections and Connections

The following reports are available for free distribution to Government agencies, non-governmental organizations, state fishery departments, and other groups interested in fishing methods and gear. Persons or organizations with special qualifications can purchase copies of these publications

Identent of Documents,
Government Printing Office,
Washington 25, D.C.

Commercial Fishing Vessels and Gear
Guide to the Classification of Fishing Gear in the
Philippines

The Food and Agriculture Organization of the United Nations has compiled the following comprehensive reports on fishing methods and gear which may be purchased from:

News (Books) LTD
House, 110 Fleet Street
London, E. C. 4

Year of the World
World: 1
World: 2

MS #1111

SELECTED LITERATURE ON FISHING METHODS AND GEAR

The following listing of the Bureau's fishery leaflets and separates on fishing methods and gear is presented for the information of interested persons and organizations. These reports are available and distributed without charge. Requests for these publications should give the fishery leaflet or separate number and title.

Send requests to:

Office of Information
U.S. Fish and Wildlife Service,
Washington 25, D.C.

- FL 64 Construction and Operation of Lobster Fishing Gear
- FL 125 How To Make and Mend Fish Nets
- FL 241 Methods of Net Mending, New England
- FL 245 Balloon Trawl Construction, Long Island Type
- FL 262 Crab Pot Construction, Chesapeake Bay Type
- FL 317 Japanese Long-line Fishery for Tuna
- FL 354 Reef Fishing
- FL 373 Atlantic Coast Mackerel Purse Seine
- FL 386 Pacific Salmon Drift Gill Netting
- FL 387 Commercial Salmon Trolling
- FL 394 Gulf of Mexico Shrimp Trawl Designs
- FL 437 Assembly Methods for Otter Trawl Nets
- FL 442 Sea Scallop Boats and Gear
- FL 445 Operation of North Atlantic Type Otter Trawl Gear
- FL 470 Double-Rig Shrimp Trawling in the Gulf of Mexico
- FL 487 Spiny Lobster Gear and Fishing Methods
- Sep. 356 Trap Lift Net for Catching Tuna Bait Fishes
- Sep. 358 Tuna Fishing at Tahiti
- Sep. 363 Fishing Vessel Live-Bait Equipment
- Sep. 365 Drum-Seining - A New Development in the Puget Sound Salmon Fishery
- Sep. 383 Recent Developments in Fishing - Vessel Deck Gear
- Sep. 392 Use of An Electrical Attracting and Guiding Device in Experiments With A "Fish Pump"
- Sep. 397 Use of Underwater Television in Fishing Gear Research
- Sep. 400 The Pound-Net Fishery in Virginia
- Sep. 422 Construction Details of Improved Tuna Long-line Gear Used by POFI
- Sep. 434 Condition of the Middle Atlantic Pound-Net Fishery
- Sep. 474 An Experimental Air-Pressure Depth-Meter for Use With Midwater Trawls
- Sep. 522 A Practical Depth Telemeter for Midwater Trawls
- Sep. 526 A New Method of Handling Long-line Gear Using A Rotating Tub
- Sep. 531 Certification and After Use Measurement of Manila Otter-Trawl Cod Ends
- Sep. 550 Practical Method of Preventing A Purse-Seine Net From Sinking To Its Full Depth

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- Sep. 561 Equipment Note #1 - New All -Aluminum Salmon Gill -Net Boats Built for Alaska Fishery
- Sep. 563 Observations on Trawl - Door Spread and A Discussion of Influencing Factors
- Sep. 573 Equipment Note #2 - Pacific Coast Drum Trawling
- Sep. 582 Braided Synthetic Twines and Their Use in the New England Trawl Fishery
- Sep. 592 Equipment Note #4 -A Method of Making Electrical Trawl Cable Terminations and Connections

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Washington 25, D.C.

- Circular 48 Commercial Fishing Vessels and Gear
- Research Report 17 Guide to the Classification of Fishing Gear in the Philippines

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London, E. C. 4
England

- Modern Fishing Gear of the World
- Fishing Boats of the World: 1
- Fishing Boats of the World: 2

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