

GEAR NOTE: With this device, inexperienced man can haul sablefish pot in about 8 minutes.

## A BUOYLINE COILING DEVICE

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A new device of significant value for high-speed coiling of buoylines has been developed in a joint program by the Seattle Exploratory Fishing and Gear Research Base and Captain Sig Jaeger, owner-operator of the commercial fishing vessel M/V 'Seattle'. The device is a modification added to a standard pot hauler, the "MARCO\* JO105 crab block."

The need for this device became apparent during an experimental pot fishery for sablefish in the coastal waters off the State of Washington. This fishery has been conducted in waters with an average depth of 275 fathoms and, at times, up to 375 fathoms, using 400-fathom or longer buoylines. Initially, without a line-coiling aid, one man was required to tend the pot hauler and another to coil the lines by hand. Experienced fishermen took 12 to 14 minutes to haul a sablefish pot while inexperienced men took about 18 minutes. Using the device described in this report, an inexperienced man working alone could haul a pot in about 8 minutes.

### Line-Coiling Device

The line-coiling device consists of a guiding channel that receives and guides the line after a splitter picks it off the main sheave of the block and guides it into a fiber-reinforced rubber discharge hose (Fig. 1). The operator stands facing outboard with his left hand manipulating the hydraulic control for the block, and his right hand directing the discharge hose to place the line in a neat coil at his feet (Fig. 2). A spring-loaded steel finger with a grooved face holds the line tightly in the main sheave when the incoming line is slack (Fig. 3). This steel finger can be easily engaged or disengaged by the operator with his left hand while coiling the line and without interrupting

the smooth hauling of the pot. A knot passes freely around the main sheave and under the steel finger. If the knot will not clear the guiding channel and discharge hose, the operator can quickly remove the line from the hose, pull enough slack past so the knot is clear, and rethread the line in the hose (Fig. 4).

Early in the development of this device, the idler sheave was removed from the discharge side of the main sheave and a spring-loaded wheel with a grooved nylon face was installed to hold the line tightly in the main sheave (Fig. 5). This wheel was subsequently removed and replaced by the present steel finger, which does the job equally well and takes less space.

The idler sheave was reinstalled to facilitate setting groundlines. When setting, the groundline is paid out over the crab block with the idler sheaves holding the line in place under tension on the main sheave.

Since an erratically swinging block makes coiling difficult, the block in its present configuration is hung centered over the rail and secured in place to stop this action. Two crossed braces are attached to the block at points behind the idler sheaves and bolted to a bracket welded to the rail. The buoyline is led into the crab block from a lead block suspended outboard by a chain fastened to the rail. When traveling, the bolts at the rail are removed and the unit swings inboard.

Initially, the crab block was suspended much further outboard, and the guiding channel redirected the line through a much sharper angle. The lead roller arm was therefore modified (Fig. 3) to eliminate chafing when the line came up at an angle.

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\*The use of trade names does not imply endorsement of a firm or product.

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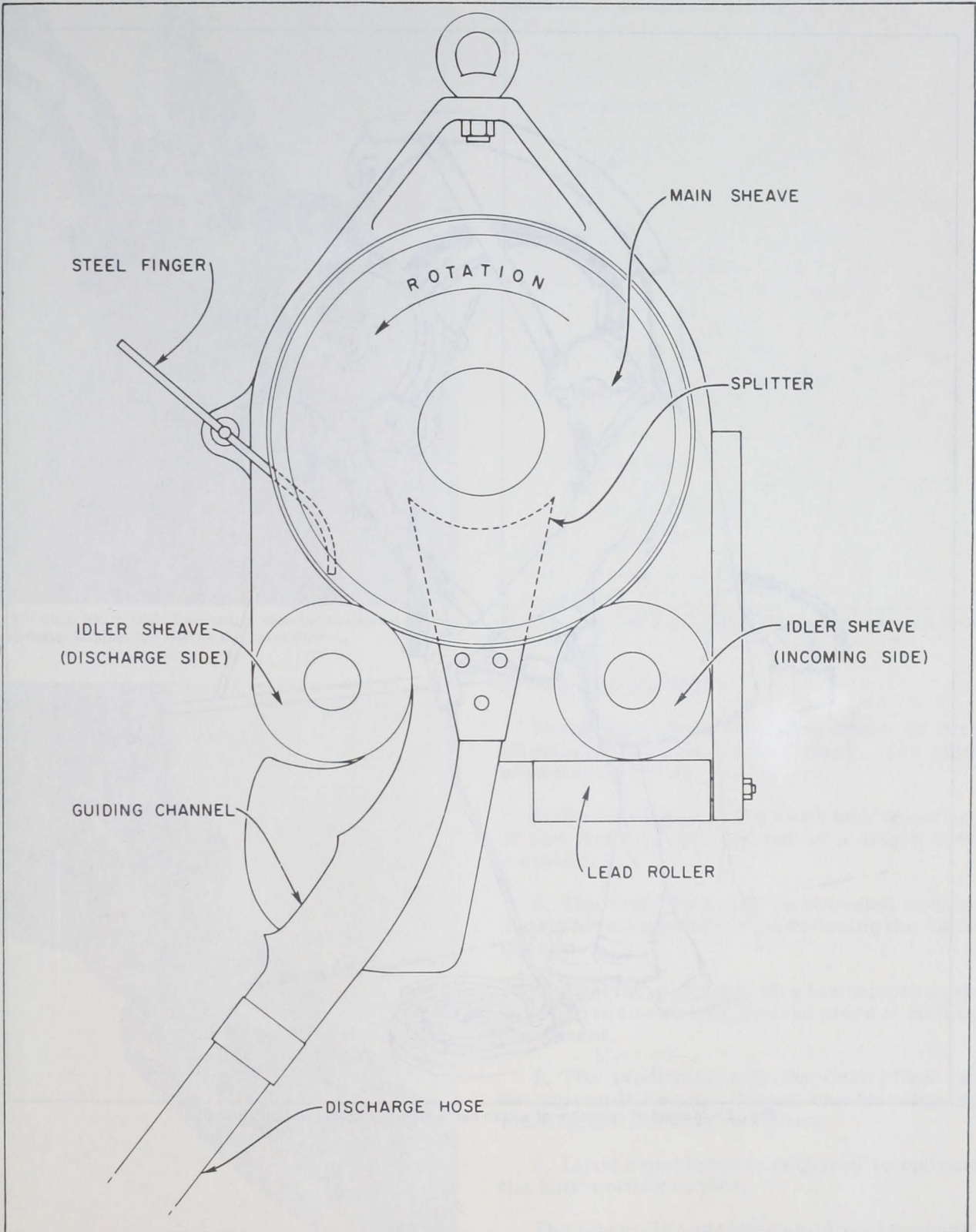


Fig. 1 - MARCO<sup>1/</sup> JO105 crab block with modifications to aid in high-speed line coiling.

<sup>1/</sup>The use of the name MARCO does not imply endorsement of a firm or product.

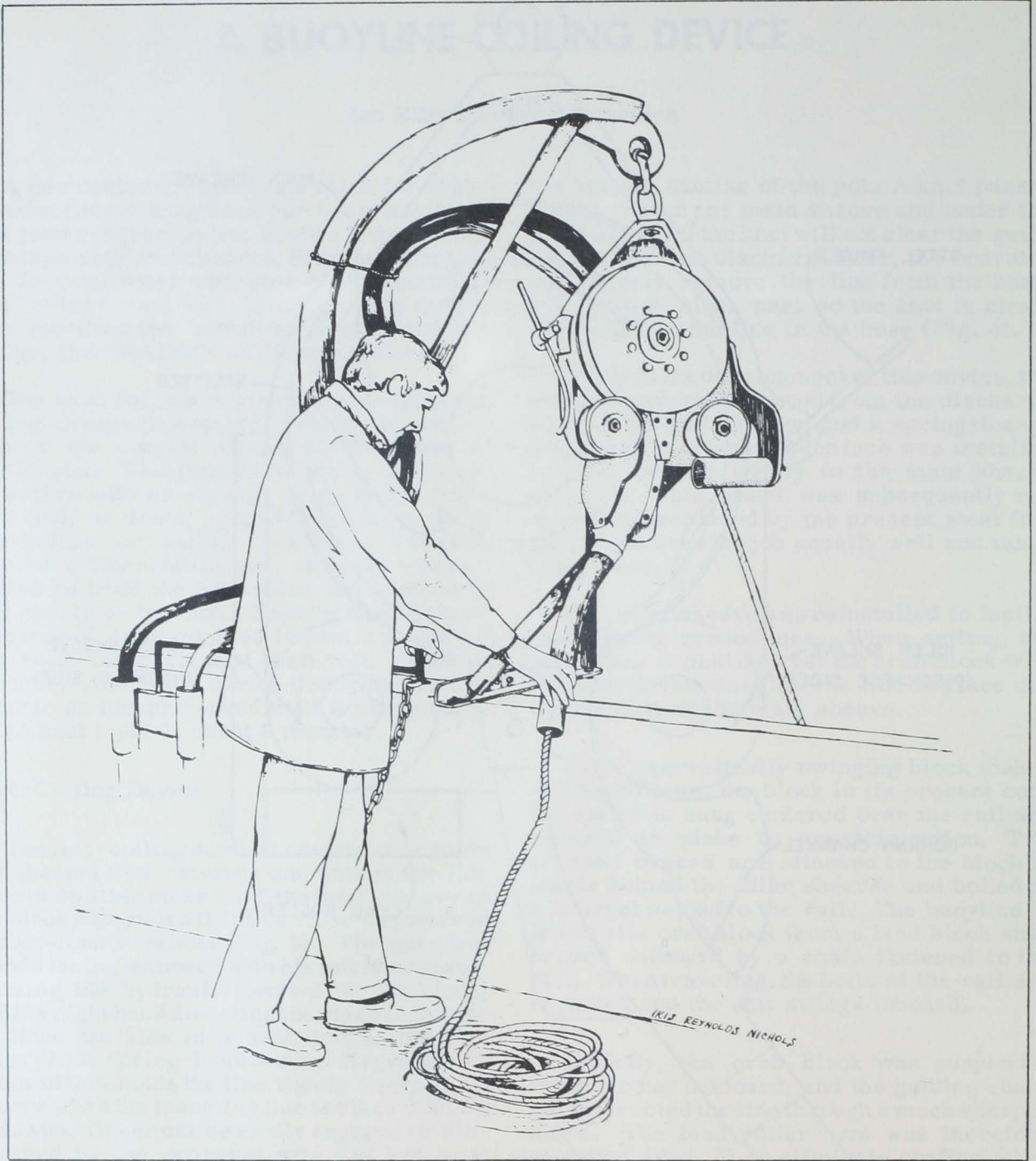


Fig. 2 - Method of operation of a crab block modified to aid in line coiling.

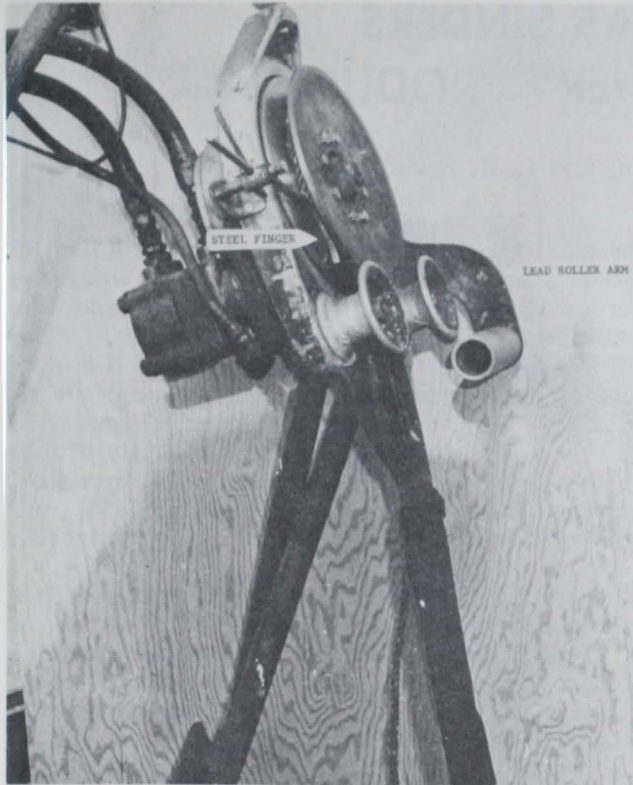


Fig. 3 - Crab block with line coiler showing the spring-loaded steel finger holding the line in the main sheave.



Fig. 4 - Discharge hose and lower end of guiding channel showing the slot for threading and removal of line. (Photos: William L. High)

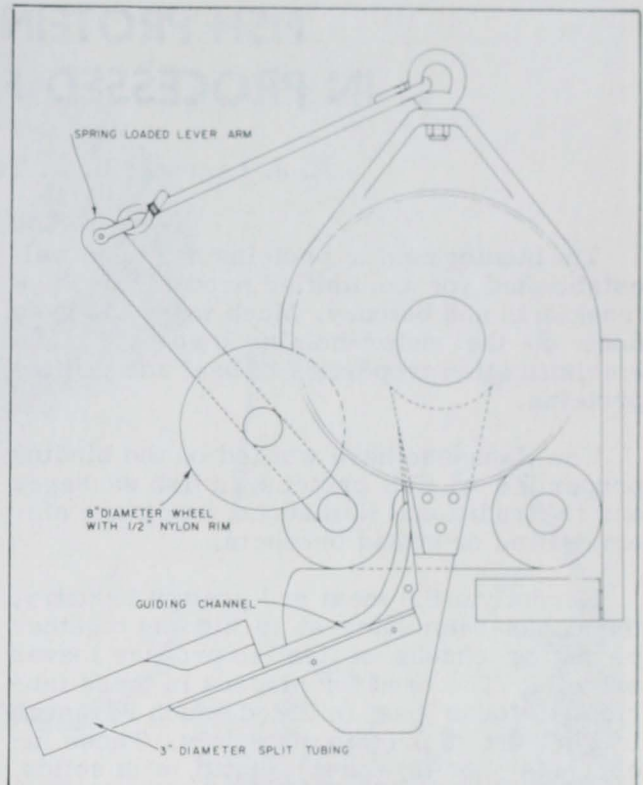


Fig. 5 - Crab block with spring-loaded wheel to hold line in the sheave.

### System's Advantages

In summary, the line coiling device is very effective for deepwater pot fishing. The chief advantages of this system are:

1. The operation of the block and the coiling of the line are carried out by a single crew member.
2. The crab block may be operated continuously at full capacity, thus reducing the hauling time.
3. The line-coiling device is a simple modification to an existing, proved piece of fishing equipment.
4. The modification to the crab block can be accomplished by almost any shop having welding and burning facilities.
5. Little experience is required to operate the line-coiling device.

The line coiler has been employed successfully on the blackcod pot fishing vessel 'Seattle' for several fishing trips.