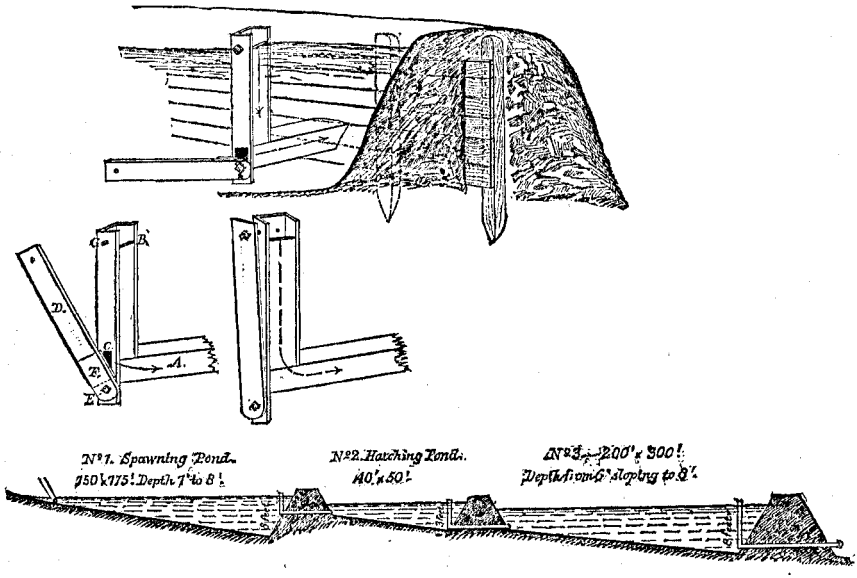
96.—DESCRIPTION OF CARP PONDS AND WATER GATE.

By JULIUS GROSS.

CARP PONDS.—Pond No. 1 is a spawning pond, 150 by 175 feet. This slopes from 1 inch to 8 feet in depth, and is supplied with spring water, which is brought about 1,200 feet in tile pipes.

Pond No. 2 is a little hatching pond, 40 by 50 feet, which slopes from 1 inch to 3 feet in depth, and receives its water from No. 1, while its outflow empties into No. 3.

Pond No. 3 is a raising or stock pond, 200 by 300 feet, sloping from 6 inches to 8 feet, and supplied with water from a creek.



I have found that the best way of transferring the eggs from No. 1 to No. 2 is by putting live cedar brush into the spawning pond, and after the eggs are deposited they can easily be removed to the hatching pond.

When the ponds are to be drained, all three empty into a creek which flows near by, and is several feet lower than the ponds. When No. 1 is drained to take out the young fish, the old ones are put into No. 2, where they remain until all necessary repairs have been made. No. 1 is then filled to half its depth with back-water from No. 3, a fine strainer being kept in the inflow to prevent intruders from coming in with the back-water, while the spring fills the remainder of the pond. The spawning fish are then replaced in No. 1.

WATER GATE.—At the outflow of a carp pond there is apt to be some trouble, caused by leakage or by muskrats or crawfish making holes in the

dike. This may usually be avoided by constructing the outflow in the following way: In the middle of the dike, where the outflow goes through, a partition wall should be built of good oak plank, as shown in the sketch.

A is a box of 2-inch oak plank, about 8 or 10 inches square, and long enough to pass underneath the dike. B is the overflow.

C is the opening for draining the pond, while D is a board acting as a lever to open and close C. This lever must work very easily.

E is a screw-bolt fastened below.

F is a little board $\frac{3}{4}$-inch thick, sufficient to cover the opening C.

G is another screw-bolt similar to E. When the lever is in perpendicular position, the bolt is put through and the nut screwed on, making the opening C water-tight.

COLUMBIA, ILL., *October* 18, 1886.

97.—AMERICAN FISH IN NEW ZEALAND.*

The authorities of New Zealand have sent to America for the ova of the landlocked salmon, the rainbow or California trout, the whitefish, and a fresh stock of the brook trout. The rainbow trout (*Salmo irideus*) will probably be an exceedingly valuable addition to the salmonoids in the waters of New Zealand, as it endures a high temperature, is not destructive to its own kind, is a splendid food-fish, and affords good sport.

During 1880 and 1881 about 770 of the American brook trout (*Salvelinus fontinalis*) were distributed among three of the rivers of New Zealand. No result has yet been reported from these; but the adult fish in the care of the Acclimatization Society have done remarkably well and produced a large quantity of ova, which, in spite of several mishaps, has resulted in about 2,500 fry being placed in a race. It is intended to keep the most of these fry until they are yearlings, and thus replenish the stock of parent fish.

A number of the American catfish (*Amiurus catus*) were originally imported into Auckland from America in 1879; and they are now abundant in St. John's Lake and other waters. During last year Captain Fairchild brought a few to Dr. Hector, who liberated 30 in Mr. Percy's pond at Petone. They are said to be a harmless fish, of fair edible qualities, growing to a large size in waters unsuitable for *Salmonidæ*, and easy of capture.

Since 1875 nearly 10,000 fry of the California salmon (*Salmo quinnat*) have been distributed to such localities about the islands as seemed most suitable for the acclimatization and growth of this species.

Large shipments of the Atlantic salmon (*Salmo salar*) have been obtained from England, especially from the Tweed; and since the last annual meeting 19,400 fry have been hatched and liberated.

* Extracted from the annual report of the Wellington and Wairarapa Acclimatization Society, September, 1886.