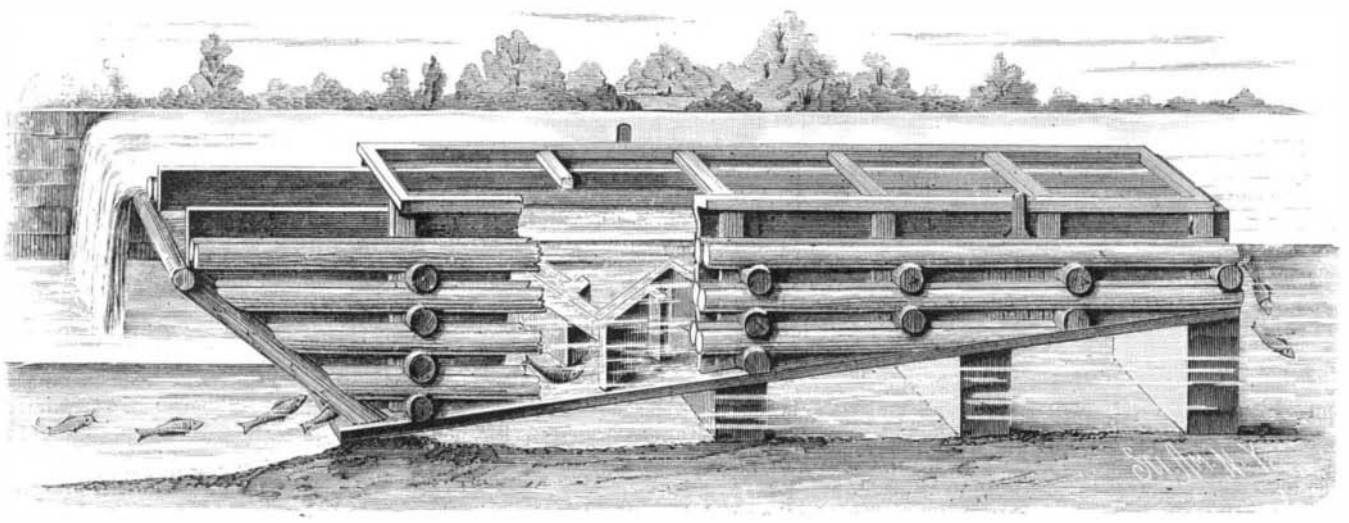
IMPROVED FISHWAY.

The engraving shows an improvement in fishways lately patented by Mr. W. H. Rogers, of Amherst, Nova Scotia. It is built in with the dam or rests against it, and affords to the fish a ready means of ascending the stream without regard to the number or height of the dams. The fishway has an inclined flat bottom and vertical sides forming a channel or trunk. The bottom has a rise of about one foot in eight or ten, and the sides extend above high water. The lower portion of the channel is divided into a zig-zag passage way by diagonal partitions, which are attached in alternation to opposite sides of the fishway. These partitions retard the flow of water and afford an easy passage for fish. To the upper side of the upper edge of each partition a flange is attached for the purpose of checking the water so as to form pools of comparatively dead water in which the fish may rest on their course up the fish way.

The lower entrance to the fishway is formed in the lower part of the dam. The fish readily find this entrance, as the water flowing from it is comparatively sluggish.

The fishway is held together by a strong wooden framing, and in the sides there are openings provided with slides which may be opened whenever the water gets too low to flow over the upper end of the way.

This simple device admits of utilizing streams for power without interfering with the fish and without wasting an undue quantity of water.



ROGERS' FISHWAY.

California's Grain Product.

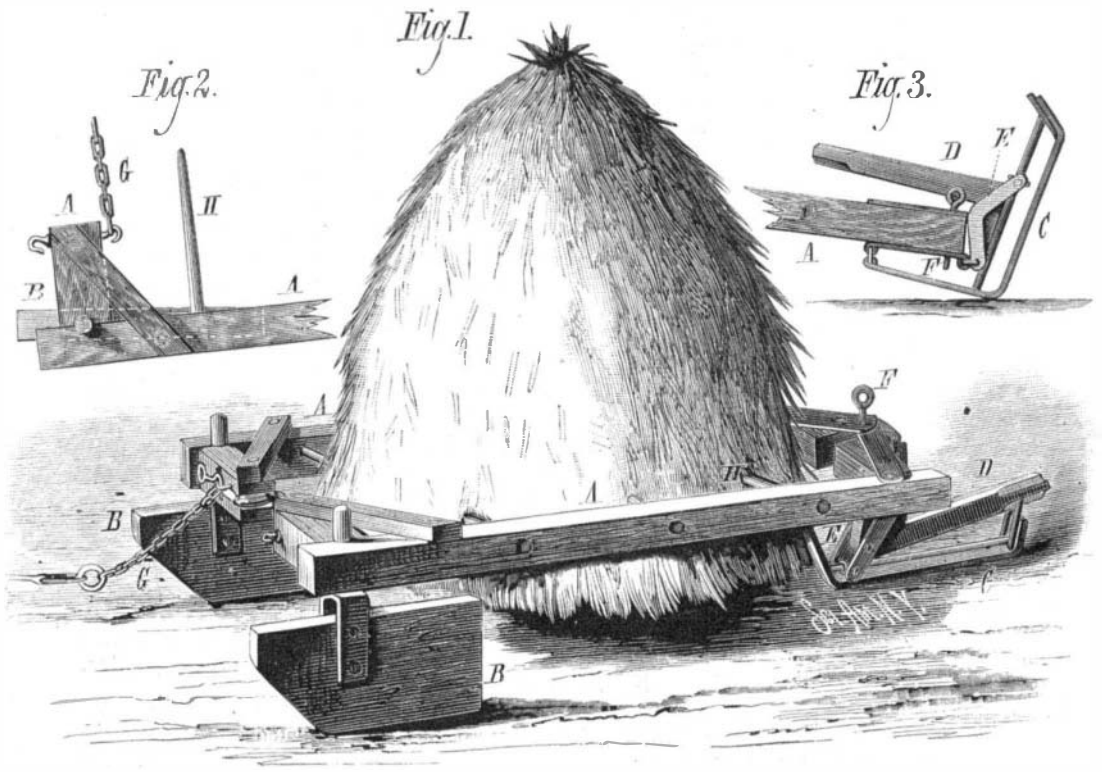
During the fiscal year just ended California has shipped about 580,000 tons of wheat (including flour) and 34,000 tons of other grain. As a larger area has been devoted to cereals this year, and good crops are now assured, the surplus for the coming year will doubtless be larger than last year's.

NOVEL CORN SLED.

The engraving represents a novel device for moving shocks of corn or other grain or fodder from one place to another without altering the form of the shock. The device is very simple, and can be easily and quickly operated. Two side frames, A, are supported in front upon pivoted runners, B, and at the rear on a folding runner, C, which may be operated by the lever, D, and link, E. The frames, A A, are jointed together at the rear upon the pin, F, and are drawn together in front by a chain, G, attached to one frame and running over a pulley in the other frame. Each side frame is provided with a number of fingers or pins, H, which alternate in position with the pins of the other frame.

To use the apparatus, the chain, G, being unhooked, the side frames are spread apart and drawn forward on opposite sides of the shock to be moved. The chain, G, is then fastened, and draught being applied to it the two side frames are drawn toward each other, forcing the pins, H, into the base of the shock. During the operation the runner, C, is in the position shown in Fig. 3, and now by pressing down the lever, D, the shock is raised from the ground and the runner is placed in the position shown in Fig. 1, when the sled with its load may be drawn forward. The operation of unloading the sled is simply the reverse of what has just been described.

This invention was recently patented by Mr. William H. Wood, of Elizabeth, Allegheny County, Pa., who may be addressed for further information.



WOOD'S CORN SLED.

A LARGE CANAL BOAT.—The largest canal boat that ever passed through the Erie Canal, arrived at this city June 16, with a cargo of 8,500 bushels of corn. The boat—the Henry J. Robinson—is 96 feet in length, 18 feet breadth of beam, draws 9½ feet of water, cost $5,500, and was built at Rochester, New York.

Government Fish Hatching.

At the hatching establishment of the U. S. Fish Commission at Washington about 20,000,000 shad have been hatched this year. Of these 15,000,000 have been turned into the Potomac River, and the remainder have been distributed mainly to the waters of California, Iowa, Kansas, Kentucky, the Carolinas, and Virginia. Yesterday 100,000 young shad two days old were shipped to Sandusky, Ohio, and the same number to Terre Haute, Ind., to stock the streams there.

During the year the Commission has distributed 25,000,000 fish. Carp have been sent to nearly every State in the Union, 3,000 applications for them having been received during the year.

The floating hatchery, Fish Hawk, soon starts on her first voyage to sea, to secure a supply of codfish eggs. Thus far the experiments in hatching cod have been encouragingly successful.

At the establishment of the Fish Commission at Druid Hill Park, Baltimore, salmon eggs are now being hatched. Arrangements have been made for regular shipments of the eggs of that fish from California. Good results are expected. It has been demonstrated that salmon will thrive as well here as in the waters of California.

Wonderful Sensitiveness of Photo Plates.

Photo plates made by the new photo gelatino-bromide process have such a remarkable sensitiveness that soft harmonious negatives may be secured in one-sixtieth of a second. The opportunities for instantaneous pictures are thus greatly extended. At a recent meeting of the Society of Arts, London, Mr. Gale exhibited photographs in which was shown the picture of a swallow poising in the air over a pond, the shadow and reflection in the water being very perfect.

A Seal Caught in New York.

A young female seal was caught asleep on Holmes' Reef, East River, June 18, by Captain J. H. Baxter, wreck master at Hell Gate. The little wanderer from the north was taken to the baths at the foot of East 86th street, where she has become a general favorite. She was from the first perfectly fearless and very gentle. She likes to be petted and never offers to bite. She is nearly three feet long, weighs about twenty pounds, and is thought to be about three months old.

Improved Steam Life Boats.

Another step ahead has been made in the equipment of our men-of-war, says the London *Times*, though to casual observers the present improvement may appear less important than it really is. The advance, however, is highly significant, as showing the progressive development of steam propulsion and the multiplicity of uses to which a single boat may be applied. At the present time the fleet is provided with steam lifeboats varying from 42 feet to 45 feet in length, and which possess the prime quality that they will not capsize or sink if filled by a sea, there being more than sufficient buoyancy in the air-tight compartments to sustain the engines, crew, and weights. The air compartments, again, being built into and forming part of the structure of the boats, give great longitudinal and transverse strength, thereby enabling them to be hoisted up in davits, and rendering them available at all times. But, inasmuch as the speed realized by the largest of these twin-screw lifeboats has never exceeded 9½ knots—a very fair rate in the circumstances—they have been necessarily confined to the performance of what may be termed the domestic work of the ship. The Admiralty, however, being desirous of extending the usefulness of these small craft, commissioned Mr. John Samuel White, of East Cowes, to build six sea-going life pinnaces of slightly larger dimensions, and which should realize a higher rate of speed than had yet been obtained from similar boats. The recent trials of these pinnaces at Portsmouth have been followed with great interest, and the results are in many respects remarkable. The boats measure 48 feet in length (or 3 feet more than the largest at present in use), 9 feet 3 inches in breadth, and 4 feet 9 inches in depth; and have a draught, when all their machinery and gear are on board, of 2 feet 8 inches forward and 3 feet 5 inches aft. They are built wholly of wood, and upon the diagonal principle, and are driven by compound engines, of which the high pressure cylinders are 7¼ inches, and the low pressure cylinders 11½ inches in diameter, having a stroke of 8 inches. The screws, which are four-bladed, have a diameter of 3 feet 2½ inches, a mean pitch of 4 feet 7½ inches, and a length of 5¼ inches. The boiler is fitted with a closed stoke-hole, the furnace being supplied with air by means of fans exactly after the manner of a torpedo boat. The total weight of the fully-equipped pinnaces is 152 cwt., that is, 86 cwt. the machinery with steam up, and 66 cwt. the hull. When tried on the measured mile by the Dockyard authorities the engines developed 120 horses, with 340 revolutions per minute, and realized a mean speed of just over 13 knots, which is almost equal to the speed of the second class torpedo boats which, as a matter of course, can only be used for torpedo purposes. The steam pressure was at 120 lb., and the engines were worked expansively with the cut-off at 9-16ths of the stroke. The increase from 9½ to 13 knots at a bound has given great satisfaction, and, as the consumption of fuel has been reduced from 6 lb. to 3 lb. per unit of indicated horse power per hour, the additional speed has been obtained without any additional cost of coal, seeing that the power developed in the 45 foot pinnaces was about 50. The question now arises whether these quick, light, and handy craft, which have had their fleetness greatly increased without injury to their special qualities as sea-going life pinnaces, could not be applied to purposes quite distinct from the ordinary work connected with a man-of-war, and thus help in freeing the decks and davits of an armor-clad from much of her present *impedimenta*. With a speed of 13 knots they will probably be found serviceable as patrol boats and for assisting in defeating a torpedo attack. Whether they may be adapted for offensive torpedo purposes, and thus compete with the steel boats, is a matter for consideration, but it is unquestionable that, while they possess the