No. 794,890. PATENTED JULY 18, 1905.

A. R. ROGERS.

FISH HANDLING APPARATUS.

APPLICATION FILED AUG. 5, 1902.

4 SHEETS—SHEET 1.

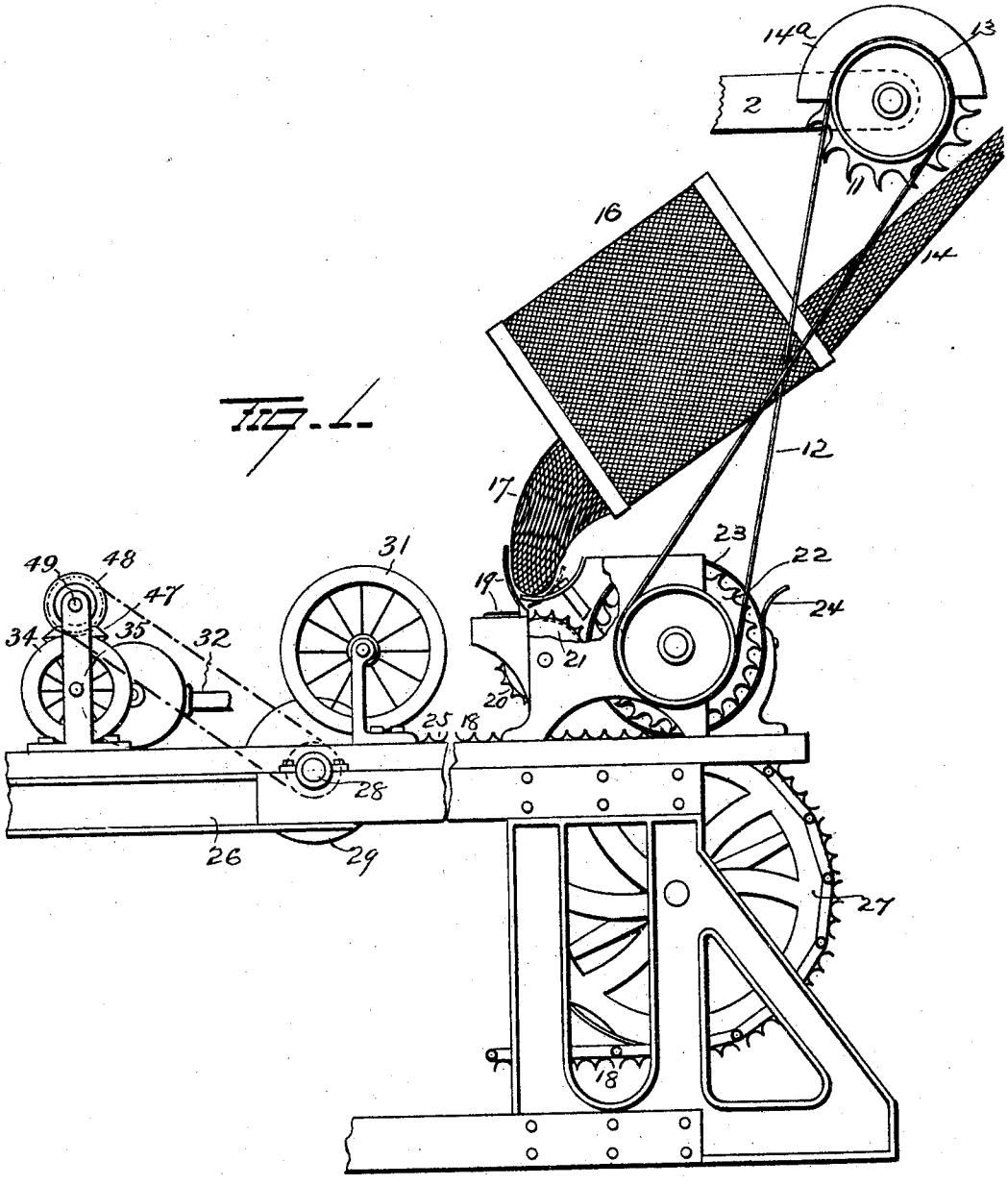


Fig. 1.

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4 SHEETS—SHEET 2.

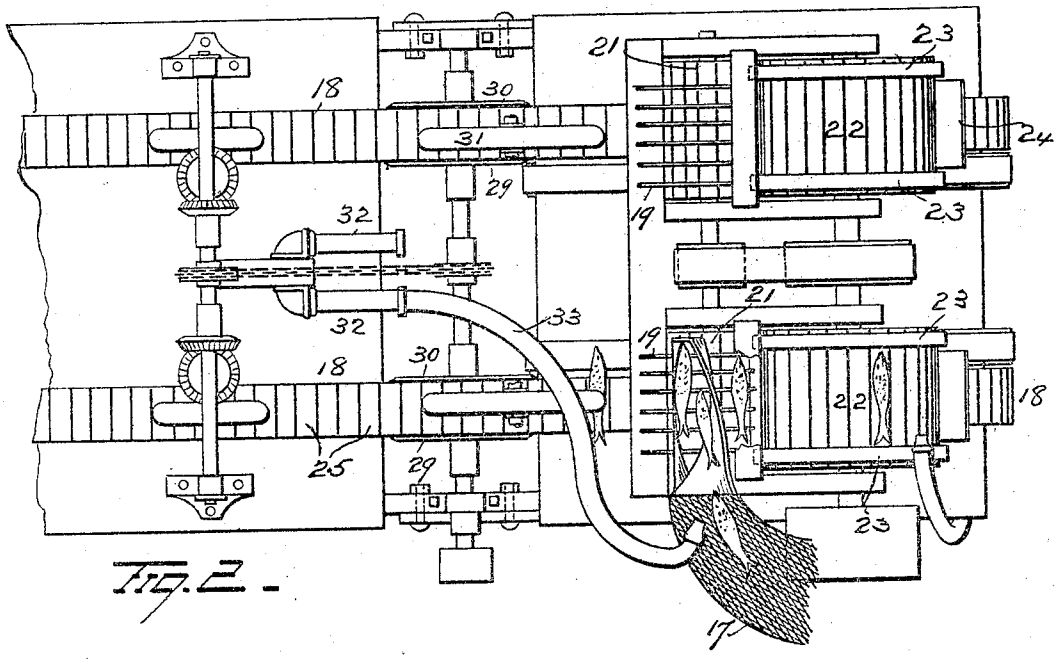


Fig. 2.

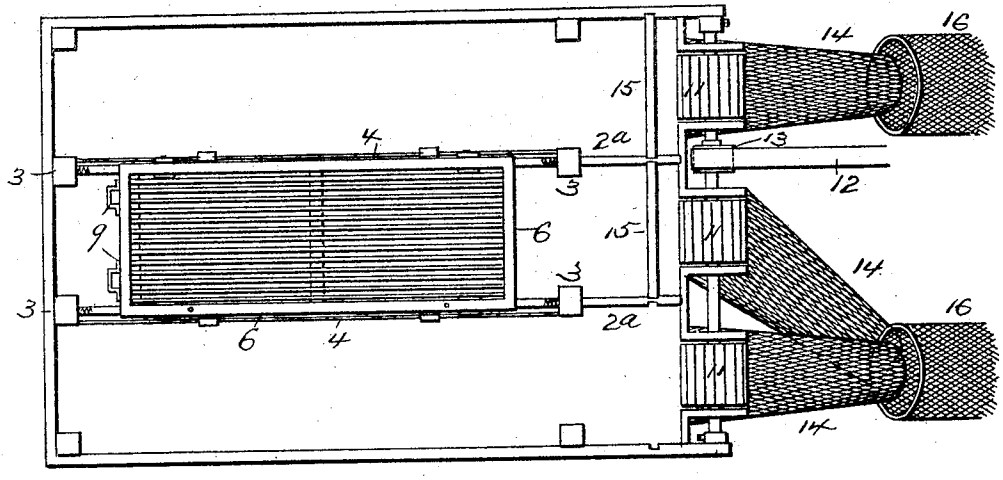


Fig. 3.

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4 SHEETS—SHEET 3.

FIG. 4

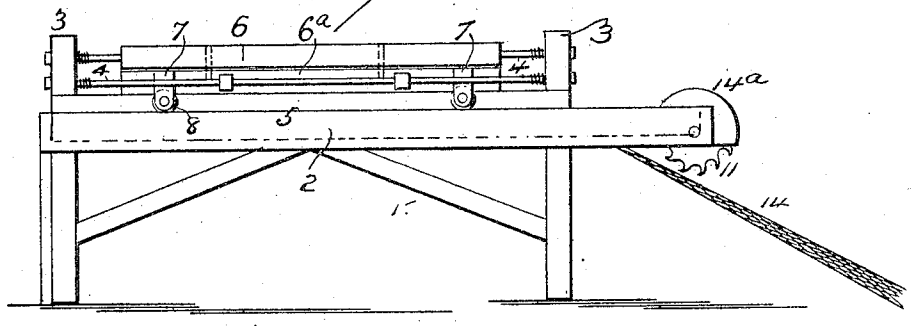
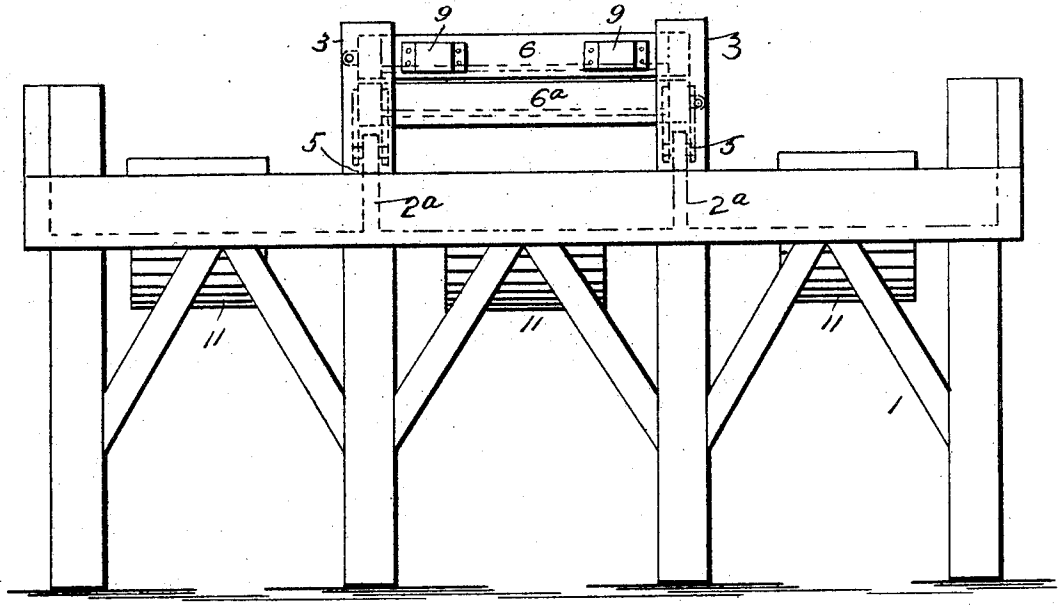


FIG. 5.



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4 SHEETS—SHEET 4.

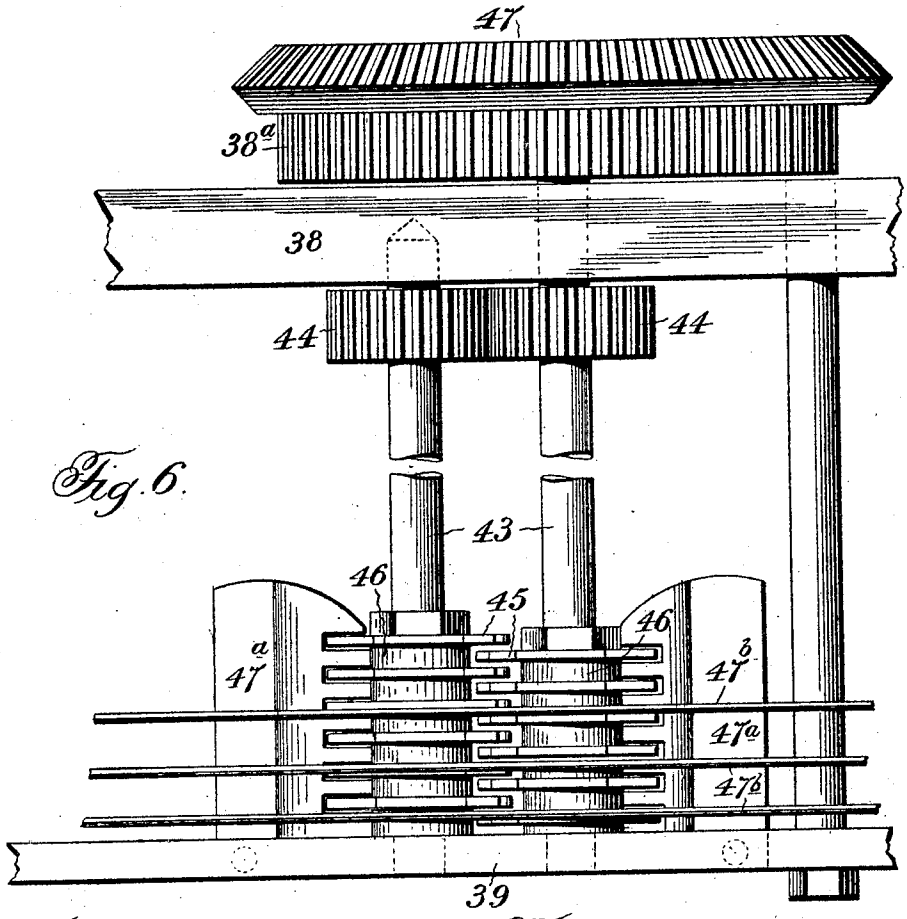


Fig. 6.

Fig. 7.

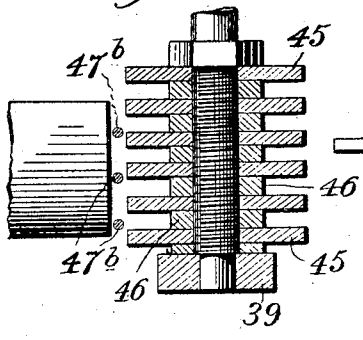
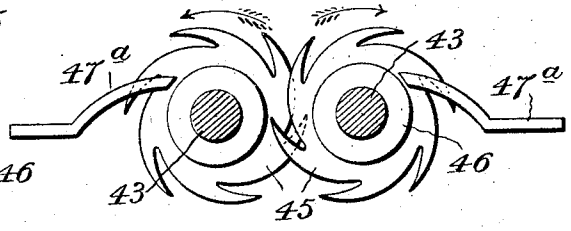


Fig. 8.



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No. 794,890. Patented July 18, 1905.

UNITED STATES PATENT OFFICE.

ARTHUR R. ROGERS, OF JONESPORT, MAINE.

FISH-HANDLING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 794,890, dated July 18, 1905.

Application filed August 5, 1902. Serial No. 118,544.

To all whom it may concern:

Be it known that I, ARTHUR R. ROGERS, a resident of Jonesport, in the county of Washington and State of Maine, have invented certain new and useful Improvements in Fish-Handling Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in fish handling and cleaning apparatus, the object of the invention being to provide improvements of this character which will separate the fish according to sizes and feed them to my improved apparatus for severing their heads and tails and cleaning them.

With this object in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as will be more fully hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in side elevation, partly broken away, illustrating my improvements. Fig. 2 is a plan view of a portion of the apparatus. Fig. 3 is a plan view of the fish-separator. Fig. 4 is a side view of the same, and Fig. 5 is an end view. Figs. 6, 7, and 8 are views showing the details of the cleaning mechanism.

My improved fish-separating mechanism is located on a floor or flat above the cleaning mechanism and comprises a frame 1, supporting a large flat tray 2, divided by longitudinal partitions 2^a into three receptacles, and on these partitions standards 3 are located, as shown. These standards 3 are connected by rods 4, and beneath the rods on the partitions tracks or rails 5 are located for a purpose which will hereinafter appear.

To the rods 4 shaking-screens 6 and 6^a are hinged, one being located above the other and provided at their opposite edge with legs 7, carrying rollers 8 to run upon the rails 5. The screens 6 and 6^a are shorter than tray 2 and are provided at one end with handles 9 to facilitate the shaking thereof. The screens are provided with slats spaced apart to permit the fish to fall therethrough, the slats in upper screen 6 being farther apart than those in screen 6^a. Hence the upper screen will retain nothing but the largest fish, the lower screen the medium-sized fish, and the smallest fish will fall through into the central receptacle, while the other sizes are dumped into the receptacles on opposite sides of the central one by simply swinging the screens over on their hinges, as will be readily understood. At one end of each of said receptacles conveyer wheels or cylinders 11 are located. All of said wheels are secured upon a single shaft supported in the frame 1 and driven by a belt 12, passed around a pulley 13 on the shaft. All of these conveyer-wheels are adapted to direct the fish into inclined chutes 14, of wire-netting, and the wheels comprise cylinders provided around their peripheries with pockets or receptacles to receive the fish as they are fed thereto from the receptacles, and a semicylindrical casing 14^a covers the wheels to prevent the escape of the fish, and removable partitions or gates 15 are provided at the discharge end of the receptacles to shut off all save one receptacle at a time.

The chutes are adapted to discharge into tubes 16, of wire-netting, and the latter in turn direct the fish into a curved conical feed-spout 17, which latter is also preferably composed of wire-netting. This spout 17 is bent so as to rest at its discharge end at right angles to the endless conveyer 18 on the fish-cleaning apparatus and discharge the fish through an opening in its bottom onto a wire grating 19, through which the teeth 20 of a wheel or cylinder 21 project and are adapted to engage the fish and move them into the pockets of a conveyer wheel or cylinder 22. The conveyer-wheel 22 is provided at each end with gages 23, which may be slid on the wheel or cylinder 22 to vary the length of the pockets according to the size of the fish being handled, and a casing 24 incloses one side of the wheel or cylinder to hold the fish in the pockets until they are deposited in the pockets 25 of endless conveyer 18, located beneath wheel or cylinder 21.

26 represents the frame of the cleaning apparatus provided with a large wheel 27, over which conveyer 18 is passed and driven thereby. On opposite sides of the conveyer 18

and secured upon a shaft 28 are rotary cutters 29 and 30, the former preferably toothed and adapted to sever the heads of the fish and the latter a plain sharp disk to cut off the tails of the fish, and a pneumatic-tired wheel or wheels 31 are provided between the cutters to bear upon the fish and hold them on the conveyer while being cut, and other pneumatic-tired wheels 34 are located upon the conveyer to squeeze out their entrails and hold the fish in the receptacles of the conveyer while the entrails are being drawn completely out. The cleaning mechanism, (indicated at 35 in Figs. 1 and 2,) other than the pneumatic-tired wheels, is precisely like that disclosed in my former application and may be described in detail as follows: In constructing the said cleaning apparatus a series of parallel vertical shafts 43 are supported in suitable bearings and made with intermeshing gears 44, and each carries a cleaner comprising a series of toothed disks 45, having interposed washers 46 of less diameter than the disks to permit the latter to overlap and draw the entrails from the fish when they are rapidly revolved, and toothed combs 47^a are secured on lower bar 39 with the teeth thereof interposed between the disks 45, so as to effectually remove any entrails which may cling thereto, and hence always leave the disks clean when the next fish is presented thereto, and wires or rods 47^b are secured on the frame between the carriers and cleaners to prevent the latter from pulling the fish from their receptacles and grinding them to pieces. On one of each pair of shafts 43, which projects above bar 38, a gear 38^a is secured and meshes with the corresponding gear of the next pair of shafts, and one of said shafts has a large beveled gear 47 thereon to mesh with gear 48 on a shaft 49 and transmit motion to all of the cleaners.

A source of water-supply 32 is provided and is connected by a hose 33 with discharge-spout 17 to force the fish onto grating 19, and hose for cleaning and other uses may also be connected with this pump to supply water to the various parts of the apparatus.

The operation of my improvements is as follows: The fish are dumped into screen 6 and the same and screen 6^a shaken, all but the largest fish falling into screen 6^a and the smallest fish falling therethrough into the central receptacle, dividing the fish into three sizes. Screen 6 is then dumped into one side receptacle and screen 6^a into the other. The partition or gate 15 at the end of one receptacle is now opened to permit the fish to be removed by feed-wheel 11 and dropped into chute 14 and pass down tube 16 and into spout 17. The chute 14, tube 16, and spout 17, as above explained, are composed of wire-netting and compel the fish to pass therethrough head first, for if they should slide tail first the tail would catch in the mesh and the fish be swung around head first and be ejected from spout 17 in that position onto grating 19. The gages 23 are set to accommodate this size of fish, and the wheel 21 moves them into position to be taken up by feed-wheel 22 and be deposited in the receptacles of conveyer 18, the receptacles in wheel 22 and conveyer 18 exactly meshing to insure the proper placing of the fish in the receptacles in which they are carried to the cutters to have the heads and tails of the fish severed and the fish cleaned.

A great many slight changes might be made in the general form and arrangement of the several parts described without departing from my invention, and hence I do not limit myself to the precise construction set forth, but consider myself at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of my invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a fish-handling machine, the combination with a tray having a series of compartments, hinged screens disposed over one of said compartments and adapted to discharge into the other, said screens having meshes to permit the passage of fish smaller than predetermined sizes, and means for removing the fish from said compartments.

2. In a fish-handling machine, the combination with an assorting mechanism, and decapitating mechanism, of means for withdrawing fish from the assorting mechanism and a conveyer communicating with the withdrawing means and constructed to discharge the fish head first to the decapitating mechanism.

3. In a fish-handling apparatus, the combination with a tray divided into three receptacles, of two screens located above the central receptacle, the upper screen having larger openings than the lower one to separate the fish into three different sizes, and said screens hinged to permit them to be dumped into the side receptacles.

4. In a fish-handling apparatus, the combination with a tray divided into three receptacles, of two shaking-screens of different mesh located one above the other and both above the central receptacle, rollers on the screens, tracks on which said rollers run, said screens mounted so as to be dumped into the side receptacles and wheels at the ends of said receptacles to convey the fish therefrom.

5. In a fish-handling apparatus, the combination with a tray divided into three receptacles, rods above the partition-walls of said receptacles, screens hinged on said rods and adapted to slide thereon, rollers at the free edges of the screens, tracks or rails on which said rollers run, a shaft across one end of the tray, conveyer-wheels on the shaft at the outlets of said receptacles, and woven-wire chutes into which the conveyer-wheels discharge the fish.

6. In a fish-handling apparatus, the combi-

nation with an endless conveyer, and means for severing the heads and tails of the fish, and cleaning them, of chutes of wire-netting for feeding the fish into side receptacles.

7. The combination with an endless conveyer comprising a series of pockets for fish and means for severing the heads and tails of the fish and cleaning them, of a conveyer-wheel to deposit the fish into the pockets of the conveyer and having pockets meshing with the pockets of said conveyer, a wire grating onto which the fish are deposited, and a toothed wheel projecting through the grating to move the fish into the pockets of the conveyer-wheel.

8. The combination with a feed-wheel, a wire grating on which the fish are deposited and a toothed wheel to move the fish from the grating into the pockets of the wheel, of a conical wire-netting spout having an opening in its side to drop the fish onto the grating and means for discharging a stream of water through the spout to eject the fish therefrom.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

ARTHUR R. ROGERS.

Witnesses:

DANFORD O. FRENCH,

BYRON SMITH.