

C. DUFOUR.
 APPARATUS FOR WASHING SKINS.
 APPLICATION FILED JAN. 16, 1909.

934,961.

Patented Sept. 21, 1909.
 2 SHEETS—SHEET 1.

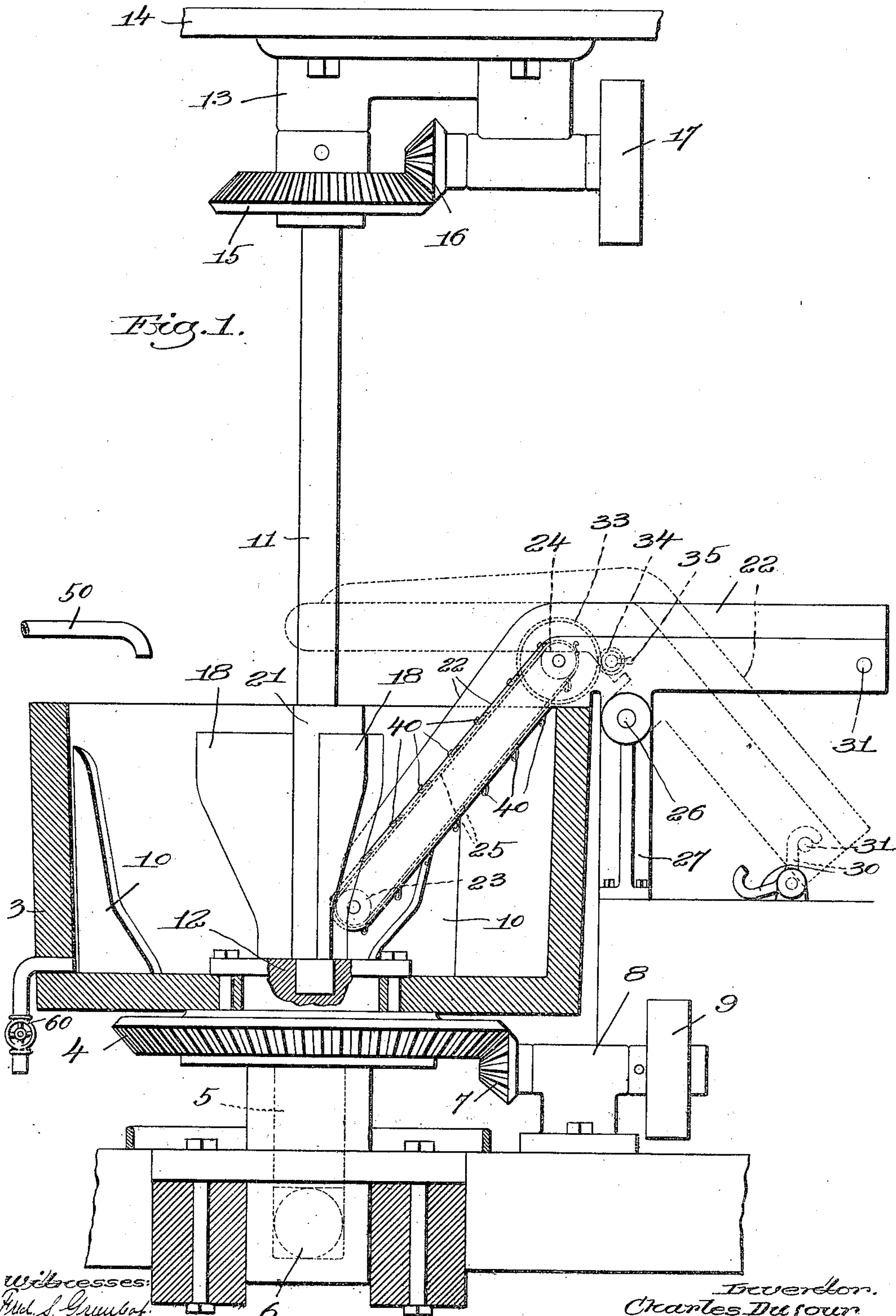


Fig. 1.

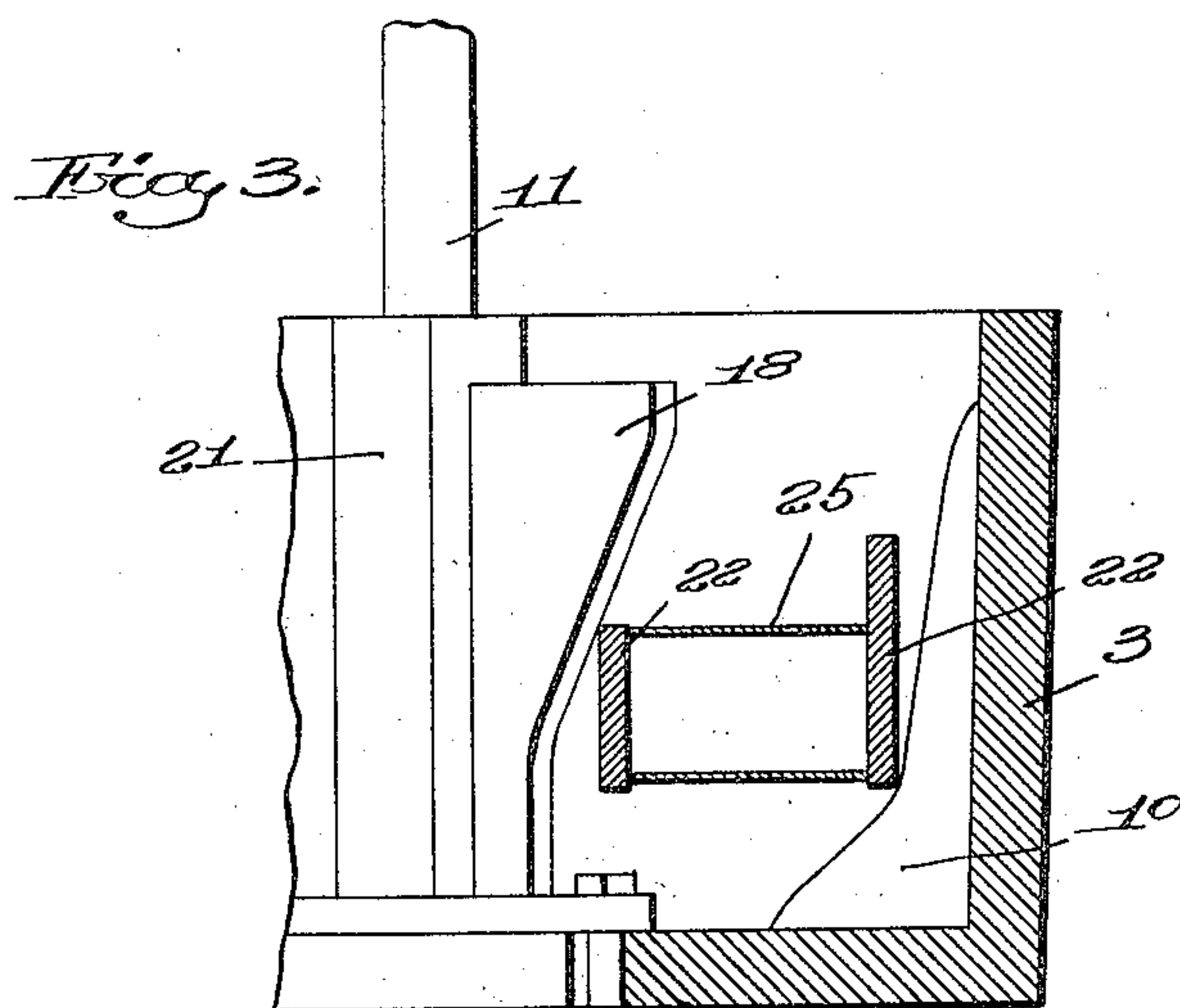
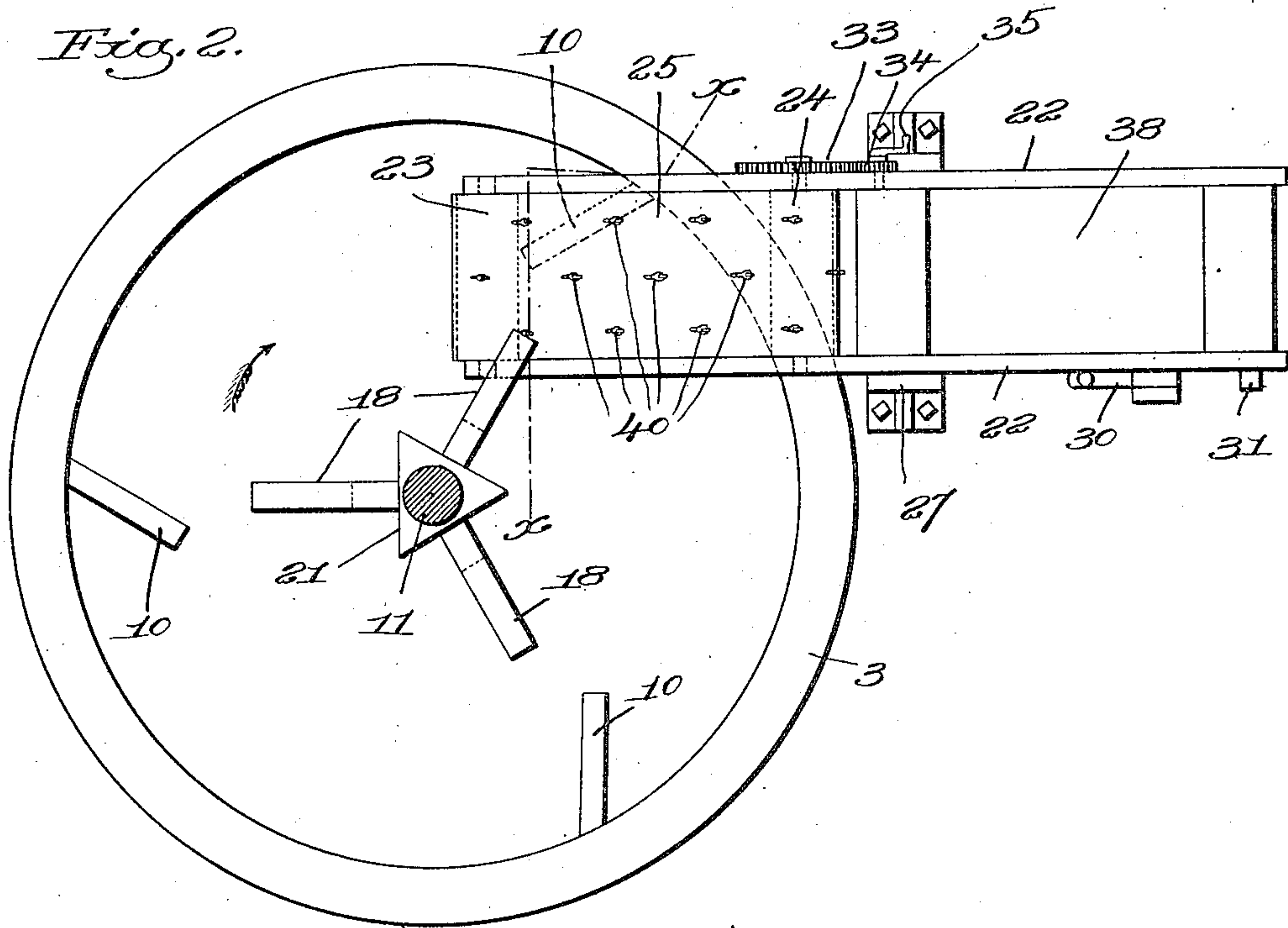
Witnesses:
 Edw. S. Grumbay
 Joseph M. Ward

Inventor.
 Charles Dufour
 by *Leslie H. Hargreaves* atty

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Inventor:
 Charles Dufour,
 by Lewis Gregory.
attys.

UNITED STATES PATENT OFFICE.

CHARLES DUFOUR, OF CAMBRIDGE, MASSACHUSETTS.

APPARATUS FOR WASHING SKINS.

934,961.

Specification of Letters Patent. Patented Sept. 21, 1909.

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To all whom it may concern:

Be it known that I, CHARLES DUFOUR, a subject of the King of Great Britain, and resident of Cambridge, county of Middlesex, State of Massachusetts, have invented an Improvement in Apparatus for Washing Skins, of which the following description, in connection with the accompanying drawing, is a specification, like characters on the drawing representing like parts.

This invention has for its object the production of a novel apparatus for washing skins, it being especially designed for washing sheep skins with wool on them, although the device is capable of use for washing other kinds of skins.

The device is of that type embodying a rotary tub adapted to contain the skins and provided on its walls with inwardly-projecting agitators, and also provided with a vertical shaft situated centrally of the tub and having outwardly-projecting agitators thereon, said shaft and tub being rotated in opposite directions.

The objects of my invention are to provide a novel form of agitator which will operate to stir the skins and complete the washing thereof without injury to them, and also to provide a novel device for removing the washed skins from the tub.

One embodiment of my invention will first be described and then the novel features thereof will be pointed out in the appended claims.

In the drawings, Figure 1 is a vertical section through a washing machine embodying my invention; Fig. 2 is a top plan view of the tub and the device for removing skins therefrom; Fig. 3 is a section through the side of the tub on substantially the line $x-x$, Fig. 2.

The tub in which the skins to be washed are placed is designated by 3 and in practice this will have a diameter of something like 12 feet and may be about 6 feet in depth. This tub is adapted to be rotated as usual in devices of this class, and it may be supported in any suitable way for this purpose. I have herein shown it as having rigidly secured to the under side thereof a large bevel gear 4 which is provided with a stud or stem 5 that is received in a suitably-supported step bearing 6. The gear 4 is driven by a bevel gear 7 which is carried by a shaft sustained in suitable bearings 8 and driven

by a pulley 9 from any suitable source of power.

Situated centrally of the tub is a vertical shaft 11, the lower end of which is journaled in a suitable bearing 12 sustained by the tub, and the upper end of which is sustained in a bearing 13 secured to the ceiling or some overhead support 14. The shaft has fast thereon a bevel gear 15 that is driven by a bevel gear 16 mounted on a shaft having a driving pulley 17 thereon. The parts thus far described may have any suitable or usual construction and form no part of my present invention.

The tub has rigid therewith a plurality of blades or agitators 10 which are in the nature of fins that extend obliquely from the wall of the tub, as plainly seen in Fig. 2. These fins are preferably wider at the bottom than at the top, as clearly seen in Figs. 1 and 3.

The shaft 11 carries a plurality of cooperating blades or agitators herein designated by 18. In the present embodiment of my invention I have shown three such agitators and each is in the form of a fin or web extending radially from the shaft and wider at the top than at the bottom.

In my preferred construction, the lower end of the shaft 11 is made triangular in shape, as shown at 21, and the blades 18 extend from the flat faces of this portion of the shaft, as clearly seen in Fig. 2. I find that agitators or blades of this character serve to effectually wash the skins without any danger of their becoming torn or injured. My invention also comprehends a novel device for removing the skins from the tub 3. This device is in the form of an elevator or conveyer adapted to be placed in the tub in such a position that as the tub rotates, the skins will be forced by the rotation of the tub onto said elevator, by which the skins are carried up over the top of the tub. I have herein shown this elevator as in the form of an endless belt elevator. It comprises two side pieces 22 which receive between them the two rolls 23 and 24 over which the endless apron 25 passes. The side rails 22 are pivoted at 26 to a stand or support 27 and each side rail has an angular shape, as clearly seen in Fig. 1. The side rails 22 are positioned so that the ends thereof carrying the endless apron 25 stand at one side of the shaft 11, and the shape of

said side rails is such that said ends may be lowered into the tub, as shown in full lines Fig. 1, or elevated from the tub, as shown in dotted lines said figure. During the time
 5 that the skins are being washed, the elevator device is placed in the dotted line position Fig. 1, and it may be held in this position by any suitable means such as a pivoted latch 30 which is adapted to engage a pin
 10 or projection 31 extending from one of the side rails 22. When the skins have been washed and it is desired to remove them from the tub, the elevator is placed in the full line position Fig. 1 so that the endless
 15 apron 25 is positioned within the tub. The tub is then rotated in the direction of the arrow Fig. 2, and at the same time the endless apron 25 is operated by turning the roll 24 in a direction to carry the upper run of
 20 said apron upwardly. This may be accomplished by any suitable means and I have herein shown for this purpose a gear 33 fast on the roll 24 and meshing with and driven by a gear 34 which is provided with a handle
 25 35. The rotation of the tub carries the skins up against the upper run of the endless apron 25, and by operating said endless apron, these skins are elevated from the tub and may be deposited through the space 38
 30 between the side rails 22.

The shape of the agitators 10 and 18 is such that when the endless apron 25 is lowered into the tub, as shown in full lines Fig. 1, said agitators will pass either side
 35 of the side rails 22, as shown in Fig. 3, the widest part of the agitators 18 passing over the elevator and the widest part of the agitators 10 passing under the elevator. I will preferably provide the endless apron 25 with
 40 hooks 40 which are adapted to take hold of the skins and facilitate their being elevated by the apron. I have shown at 50 a pipe by which the tub may be filled with liquid and at 60 a valve pipe by which the
 45 liquid may be drained from the tub. My improvement, therefore, provides a simple mechanism for thus doing away with the

laborious operation of lifting the skins out by hand as has been heretofore done.

Having fully described my invention, 50 what I claim as new and desire to secure by Letters Patent is:—

1. In a machine for washing skins, the combination with a tub, a shaft situated centrally of the tub, and means to rotate the
 55 shaft and tub in opposite directions, of fins extending inwardly in an oblique direction from the inner wall of the tub, and other fins extending outwardly from said shaft, the first-named fins being wider at the bot- 60
 tom than at the top and the latter fins being wider at the top than at the bottom.

2. In a machine for washing skins, the combination with a tub, a shaft situated centrally of the tub, and means to rotate the
 65 shaft and tub in opposite directions, of an elevator for removing the skins from the tub, and means whereby said elevator may be inserted into the tub or removed there-
 70 from.

3. In a machine for washing skins, the combination with a tub, a shaft situated centrally of the tub, and means to rotate the
 75 tub and shaft in opposite directions, of an endless belt elevator, and means for sus-
 taining said elevator whereby it may be placed within the tub for removing skins therefrom or placed in a position above the
 80 tub.

4. In a machine for washing skins, the
 80 combination with a tub and means for rotating it, of an elevator comprising two side rails pivotally mounted so as to permit one
 end thereof to be carried into the tub or elevated above the tub, an endless belt con- 85
 veyer sustained by said end of said side rails, and means for operating said conveyer.

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

CHARLES DUFOUR.

Witnesses:

LOUIS C. SMITH,
 THOMAS J. DRUMMOND.