No. 872,020. PATENTED NOV. 26, 1907.

F. G. SARGENT.

WOOL WASHING MACHINE.

APPLICATION FILED MAR. 5, 1906.

2 SHEETS—SHEET 1.

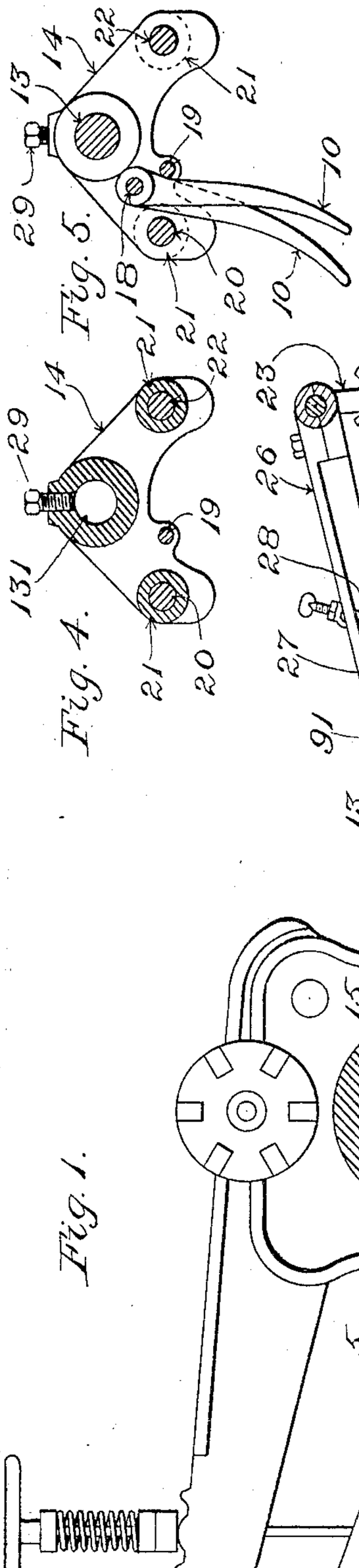

Fig. 5.

Fig. 4.

Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 2.

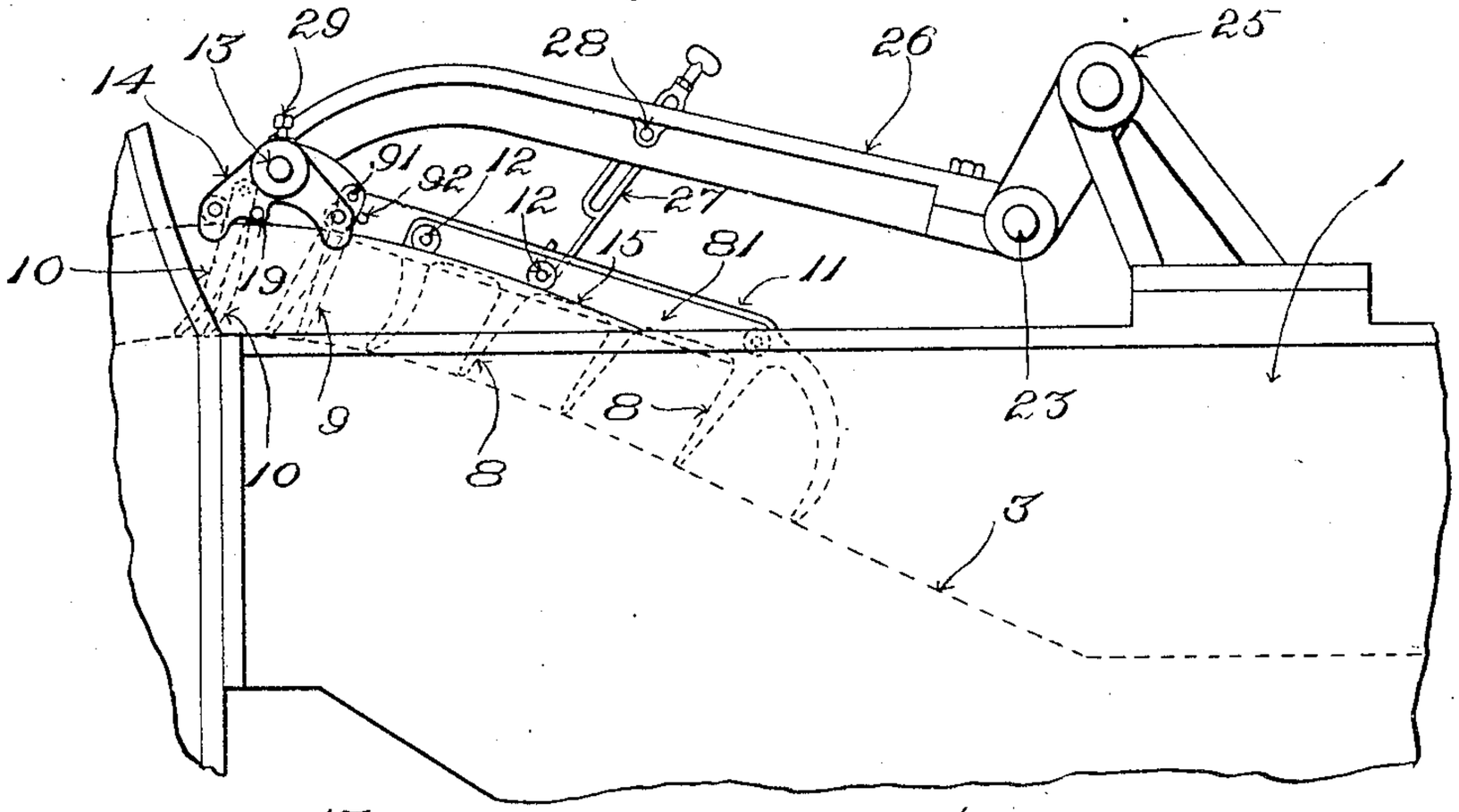

Fig. 3.

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UNITED STATES PATENT OFFICE.

FREDERICK G. SARGENT, OF GRANITEVILLE, MASSACHUSETTS, ASSIGNOR TO C. G. SARGENT'S SONS CORPORATION, OF GRANITEVILLE, MASSACHUSETTS.

WOOL-WASHING MACHINE.

No. 872,020. Specification of Letters Patent. Patented Nov. 26, 1907.

Application filed March 5, 1906. Serial No. 304,209.

To all whom it may concern:

Be it known that I, FREDERICK G. SARGENT, a citizen of the United States, residing at Graniteville, in the county of Middlesex, State of Massachusetts, have invented a certain new and useful Improvement in Wool-Washing Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention has relation to the devices which are employed at the delivery-end of the bowl of a wool-washing machine for the purpose of discharging the wool from the said bowl. More particularly, the invention relates to the reciprocating toothed carrier by means of which the wool is pushed upward along the inclined table at such end of the said bowl or tank adjacent to the squeeze or press-rolls, and delivered on to the surface of the lower one of such rolls.

At the present time, wool-washing machines are in use in which the leading end of the carrier is provided at each side thereof with a truck or roll which rests upon a fixed guide which is located at the side of the bowl. In some cases the carrier is constructed with a transversely-extending rod having a truck or roll such as aforesaid mounted upon each of its opposite end-portions. By means of the truck or roll at each side thereof, and the fixed guides, the said leading end of the carrier is supported and guided as the carrier reciprocates. The carrier is operated by means acting to cause the body of the same to occupy a raised position clear of the wool in the bowl during the return movement of the carrier toward the middle of the length of the bowl, and to occupy a lowered position in engagement with the wool in the tank during the advancing movement of the carrier toward the squeeze or press-rolls. This raising and lowering of the said body is produced by causing the carrier to rock or swing in a vertical plane upon the trucks or rolls. As such machines are at present constructed, the swinging or rocking movement of the carrier operates to move vertically the swing-teeth with which the carrier is furnished at the leading end thereof, and thereby the said swing-teeth are caused to recede bodily from the surface of the inclined table and approach the same again, as the carrier travels along such table.

The general object of the invention is to provide a construction of carrier by which the tendency to bodily movement of the swing-teeth at the leading end of the carrier is obviated, and by which the swing-teeth in question are enabled to move in a path which at all times is parallel with the surface of the table.

The drawings show the invention, Figure 1 thereof being a view in longitudinal section of a part of a wool-washing machine of a kind at present in extensive use, with the invention applied thereto. Fig. 2 shows in side elevation a portion of the said machine. Fig. 3 shows such portion in plan, with parts broken away. Fig. 4 is a sectional detail view of one of the carriages or heads of the carrier, on a somewhat enlarged scale. Fig. 5 is a somewhat similar view, the section being taken in a plane adjacent the carriage of Fig. 1, at a short distance from the inner side of such carriage.

Having reference to the drawings,—at 1, Figs. 1, 2 and 3, is represented a portion of the bowl or tank of a wool-washing machine, and at 2, Fig. 1, is shown a portion of the usual harrow. 3 is the inclined table located at the delivery end of the bowl or tank 1 and along which the wool is advanced by means of the carrier toward the squeeze or press-rolls. 4, 5, Fig. 1, are the said squeeze or press-rolls, 6 is the tank below the same which catches the liquid that is squeezed out from the wool, and 7 is the delivery-apron by means of which the wool is conveyed away from the rolls after having been discharged from between the latter.

The carrier working above the inclined table 3 is furnished as usual with the teeth, 8, 8, etc., 9, 9, etc., and 10, 10, etc., for engagement with the wool. The teeth 8, 8, etc., and 9, 9, etc., are applied to the vertically-swinging body of the carrier, but the teeth 10, 10, etc., are supported otherwise in connection with the carrier, as presently will be explained. The teeth 8, 8, etc., are mounted fixedly in connection with the said body of the carrier, but the teeth 9, 9, etc., and 10, 10, etc., are swing-teeth. The frame-work of the body of the carrier comprises a series of arms 11, 11, etc., three of which are shown in Fig. 3. These arms extend parallel with one another in the direction of the length of

the bowl and are located at suitable distances apart in the direction of the width of the carrier, and cross-rods 12, 12, etc., also forming part of the said framework pass transversely through the said arms 11, 11, etc. The teeth 8, 8, etc., are provided upon longitudinally-extending bars 81, 81, etc., which are supported by the said cross-rods 12, 12, etc. The swing-teeth 9, 9, etc., are hung upon a cross-rod 91, which is secured to the arms 11, 11, etc., and in connection with the said swing-teeth a stop-rod 92 is provided, the said stop-rod being secured to the said arms, and serving to limit the backward turning movement of such swing-teeth resulting from the resistance that is offered by the wool which is engaged thereby in the advancing movement of the carrier toward the squeeze or press-rolls. The arms 11, 11, etc., are hung loosely upon a supporting-rod 13, which extends transversely with respect to the bowl and is supported by carriages or heads 14, 14, located at the opposite sides, respectively, of the bowl, and resting upon the fixed guides 15, 15, on the respective side portions of the bowl. The said carriages or heads are adapted to travel upon and along the said guides in the working of the carrier. The working surfaces of the guides conform to and are parallel with the upper surface of the table 3. Each carriage or head is formed with a hole 131, Fig. 4, to receive the corresponding end of rod 13, and is secured to the said end by clamping-screw 29. The swing-teeth 10 are disconnected from the vertically swinging body of the carrier, and are supported by the carriages or heads 14, 14. To this end, the transversely-extending rod 18 upon which the said swing-teeth are hung is connected at its opposite ends to the respective carriages or heads 14, 14, as indicated in Figs. 1, 2 and 3.

At 19, Figs. 1 and 2, is a transversely-extending rod applied to the said carriages or heads and serving as a back-stop for the swing-teeth 10. At 20, Figs. 1 and 3, is another rod, also attached to the carriages or heads 14, 14, and intended to prevent the swing-teeth 10 from being caused by the wool behind them, in the backward movement of the carrier, to swing up so high as to strike the top squeeze or press-roll 5 on its return forward movement. Each carriage or head 14 is fitted to the corresponding guide 15 in a manner to cause such carriage or head to move along the said guide without tilting or turning thereon, in order that the ends of the swing-teeth 10, 10, may pursue or follow, during the movements or strokes of the carrier in the direction of the length of the bowl, a path which is parallel with the surface of the table 3.

In order to prevent the carriages or heads from tilting or turning, each thereof is formed or provided with a wide base of support, measured in the direction of the length of the corresponding guide 15, and is constructed to take bearing against the said corresponding guide at both sides of the rod 13, to which latter is transmitted the power by which the back-and-forth movement of the carrier is occasioned.

In the illustrated embodiment of the invention, each carriage or head is formed with opposite extensions which are provided with trucks or rolls 21, 21, to facilitate the travel of the carriage or head along the working surface of the guide, one of the said trucks or rolls being mounted upon the corresponding end-portion of the rod 20, and the other thereof being mounted upon a pin 22, Fig. 4.

The means shown in the drawings for actuating the carrier is the same in character and construction with that usually employed. Such means comprises the rotating crank or cranks 23, the journals of which are mounted in bearings 25, 25, that are provided upon the sides of the bowl; one or more connections or connecting-arms 26 each having one end thereof engaged with the said crank, or with one of the latter, and its other end engaged with the rod 13; the link 27, loosely engaging by its slotted lower end with one of the cross-rods 12 of the body of the carrier; and the pin or projection 28 carried by the connection or connecting-arm 26 and working in a slot with which the said link is formed. The said means operates in the usual manner to move the carrier toward and away from the squeeze or press-rolls, and to swing the carrier-body downward for the advancing movement and upward for the retracting movement. The vertical swinging movement of the carrier-body, however, takes place around the rod 13, and the carriages or heads 14, 14, do not rock or turn upon the guides. Consequently, the swing-teeth 10, 10, are not raised and lowered but remain unaffected by the vertical swinging movement of the carrier-body. The carriages or heads 14, 14, are held at the required distance apart by means of the clamping screws 29, 29, Figs. 2, 3, and 4, which are fitted to threaded holes that are tapped in the walls of the sockets of said carriages or heads which receive the end-portions of rods 13, the inner ends of the said clamping-screws biting against the said end-portions. The arms 11, 11, and connection or connections 26 turn freely around the said rod.

If desired, the construction may be reversed by securing the said arms and connection or connections to rod 13 by means of screws or other means, and permitting the rod to turn freely within the sockets on the carriages or heads within which its end-portions fit, suitable provisions being made for holding the carriages or heads in place upon the rod.

The form of the squeeze-roll 4, as shown in Fig. 1, is made the subject of claim in my divisional application filed September 24, 1906, Serial No. 335,937.

What is claimed is:—

1. The combination with the bowl, the table, and fixed guides adjacent the said table, of the carriages or heads movable along the said guides and wholly supported thereby, the carrier-body pivotally connected with said carriages or heads and provided with teeth, means to reciprocate the carrier lengthwise of the said table and swing the carrier-body up and down, and teeth mounted upon the said carriages or heads independently of the carrier-body.

2. The combination with the bowl, the table, and fixed guides adjacent the said table, of the carriages or heads movable along the said guides and wholly supported thereby, the carrier-body pivotally connected with the said carriages or heads and provided with teeth, a crank operatively connected to reciprocate the carrier lengthwise of the table and swing the carrier-body up and down, and teeth mounted upon the said carriages or heads independently of the carrier-body.

3. The combination with the bowl, the table, and fixed guides adjacent the said table at opposite sides of the latter, of a vertically-swinging carrier-body provided with teeth, carriages or heads having the said carrier-body connected pivotally thereto and having the bases or supporting portions thereof extended in the direction of the length of the guides and working upon the said guides, carrier-actuating means operatively connected with the said carriages or heads at an intermediate point in the effective length of the latter, whereby the carriages or heads are prevented from tilting or turning under the application of moving power thereto, and teeth mounted upon the said carriages or heads independently of the carriage-body.

In testimony whereof I affix my signature in presence of two witnesses.

FREDERICK G. SARGENT.

Witnesses:

CHAS. G. SARGENT,

H. V. HILDVETTE.