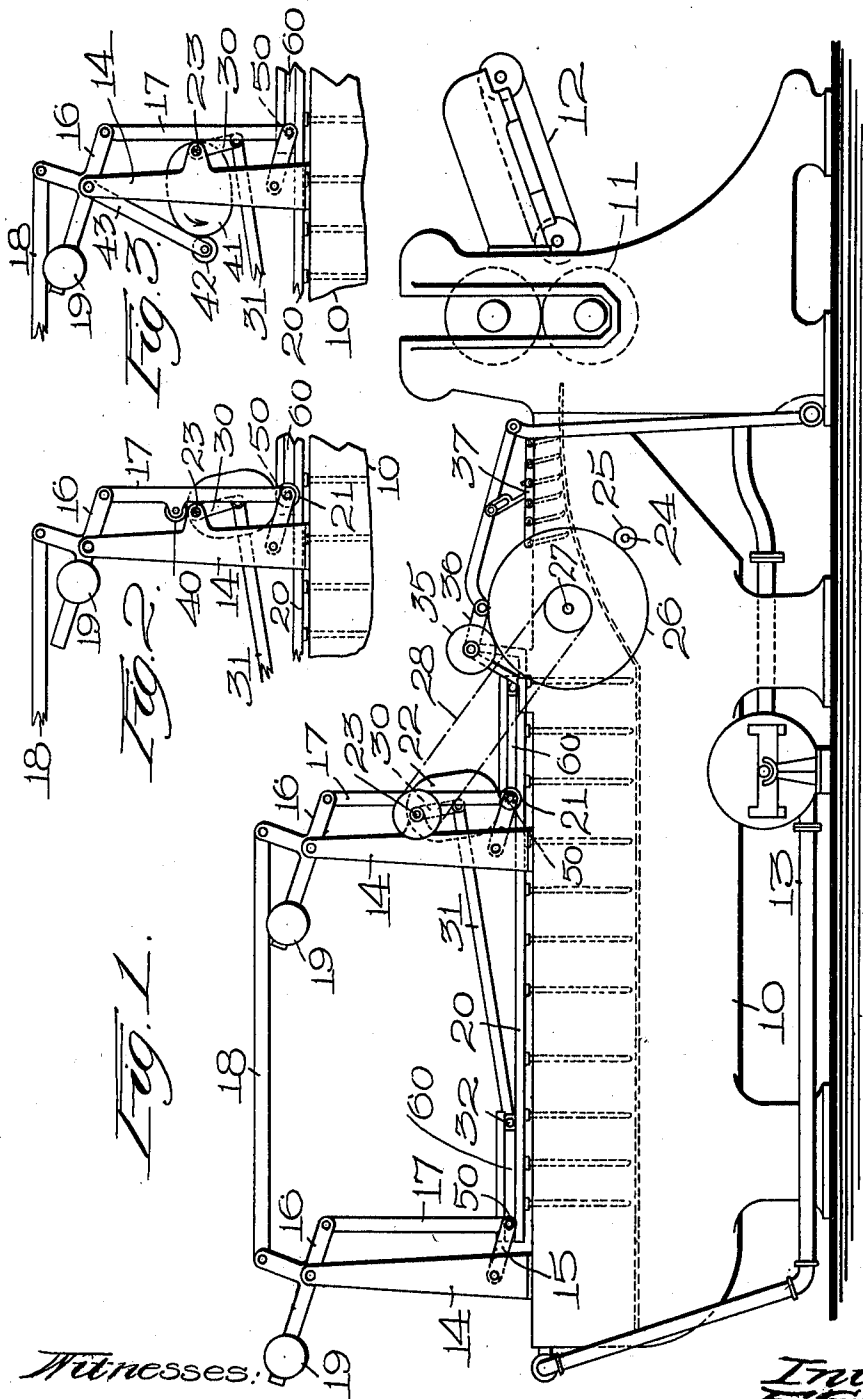


F. G. SARGENT.
WOOL WASHER.

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1,003,809.

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UNITED STATES PATENT OFFICE.

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WOOL-WASHER.

1,003,809.

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To all whom it may concern:

Be it known that I, FREDERICK G. SARGENT, a citizen of the United States, residing at Westford, in the county of Middlesex and State of Massachusetts, have invented a new and useful Wool-Washer, of which the following is a specification.

This invention relates to a wool washing machine of the type well-known as the Sargent wool washer.

The principal objects of the invention are to provide a construction in which the harrow is supported from above and is positively moved downwardly into the bowl, and while it is in the bowl is reciprocated in such a way that its motion is not a circular motion, but approximately an elliptical one; to provide improved means for operating the harrow consisting of certain details of construction as will appear hereinafter; and to provide for operating the carrier that takes the wool to the press rolls independently of the harrow, so that the relative speed of the two can be changed.

Further objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings, in which—

Figure 1 is a side elevation of a Sargent wool washer with one form of the present improvements applied thereto; Fig. 2 is a similar view of certain details of the harrow operating mechanism with certain modifications; and Fig. 3 is a similar view modified in another way.

In the form of the invention shown in Fig. 1 the washing bowl 10 is provided as usual with a set of press rolls 11 and means 12 for receiving the wool therefrom. A water circulating system 13 also is shown. Extending upwardly from the sides of the bowl are a plurality of sets of stands 14, each set consisting of a pair located on opposite sides of the bowl. On each of these sets of stands are pivoted links 15 and levers 16. Each link 15 is connected with the lever 16 on the same set of stands by a vertical link 17. The several levers are connected by horizontal links 18 in such a way that the motion of any one of the levers or links will be transmitted to the others uniformly, so that they will always be parallel with each other. Counter-weights 19 are provided for raising the links. At the point at which the links 15 and 17 are connected they are provided

with rolls 50 running in ways 60 on a harrow 20. As the links 15 are at the same elevation, this harrow will always be horizontal whatever the motion of the several links.

Where two of the links 15 and 17 are connected they are provided with a roller 21 adapted to be operated by a cam 22 on a shaft 23. This shaft receives power from a driving shaft 24 having a pinion 25 thereon, which operates a gear 26 on a shaft 27 which is connected to the shaft 23 by a belt or chain 28. It will be seen from what has been said that the rotation of the shaft 23 will cause the cam 22 to operate on the roller 21 and through the parallel motion connections positively depress the harrow. The harrow is raised in this case by the operation of the counter-weights 19. In order to provide for reciprocating the harrow and avoiding the ordinary circular motion thereof, the shaft 23, which is located near one end of the harrow, is provided with a crank arm 30 which is connected by a link 31 with a pin 32 on the harrow at a distance from the shaft 23. This obviously reciprocates the harrow, but has no effect on the vertical motion thereof, because that is controlled entirely by the cam 22.

The gear 26 is connected with a gear 35 which operates an arm 36 and controls the operation of a carrier 37 which takes the wool from the body of the washer to the press rolls. On account of this construction the gearing between the harrow and carrier can be changed at will, and their relative speeds varied as desired. This is an improvement over those classes of wool washers in which the carrier is part of the harrow and necessarily moves therewith.

The operation of the cam 22 is important, because it provides a simple and inexpensive way of forcing the harrow down into the wool in a positive manner particularly when the harrow is supported from above as shown in the drawings. The lifting of the harrow does not have to be provided for positively, and the counterweights are sufficient to accomplish that operation, but in the form of the invention shown in Fig. 2 the link 17 on which the roll 21 is located is also provided with another roll 40 which engages the cam and provides for positively lifting the harrow. In this case the counterweights do not need to be employed and they are shown as moved up toward the

point at which the lever 16 is pivoted, so as not to quite balance the harrow.

In Fig. 3 another form is shown, in which the cam 41 operates a roller 42 on an arm 43 connected with one of the levers 16. The other elements so far as shown being the same as those above described.

While I have illustrated and described certain preferred embodiments of the invention, I am aware that many modifications can be made therein by any person skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore I do not wish to be limited to all the details of construction herein shown and described, but

What I do claim is:—

1. In a wool washer, the combination of a bowl and harrow, of a shaft, means on the shaft for positively forcing the harrow downwardly into the bowl, and independent means on the shaft for moving the harrow longitudinally along the bowl.

2. In a wool washing machine, the combination of a bowl, stands located thereon and extending upwardly therefrom, levers on said stands, a parallel motion connection between said levers, links on the levers, a harrow suspended from said links, a shaft, means on the shaft for positively forcing said links and harrow downwardly, means for raising the harrow, and means on the shaft for moving said harrow longitudinally.

3. In a wool washing machine, the combination of a bowl, stands extending upwardly therefrom, a shaft supported by said stands, means for rotating said shaft, a harrow located in the bowl, a cam on the shaft for positively forcing said harrow downwardly in the bowl, a crank on the shaft for reciprocating said harrow, and means for counter-balancing the harrow so as to raise it.

4. In a wool washing machine, the combination of a bowl, stands extending upwardly therefrom, a shaft supported by said stands, a cam on said shaft, links pivoted on the stands, a harrow connected with said links, means connected with one of said links and adapted to be engaged by the cam for transmitting downward motion to the harrow, said cam being located above said means in all positions thereof, means for counterbalancing the harrow to raise it when the cam turns to a certain position, and means for reciprocating the harrow in one direction when it is in its lowest position, and in the other direction when it is in its highest position.

5. In a wool washing machine, the combination of a bowl, a harrow therein, parallel levers, a link connecting the levers to keep them parallel, links depending from said levers, pivoted links connected with the lower ends of said depending links, and with the harrow, counterbalance weights on the levers set so as to counterbalance and raise the harrow, said levers, links, and weights being located above the surface of liquor in the bowl.

6. In a wool washing machine, the combination of a bowl, a harrow therein, a rotatable cam above the bowl adapted to engage the harrow and move it downwardly, a link connected with the harrow and extending upwardly therefrom, a lever connected with said link, and a counterbalance weight on the lever for raising the harrow.

In testimony whereof I have hereunto set my hand, in the presence of two subscribing witnesses.

FREDERICK G. SARGENT.

Witnesses:

FRED W. SWAIN,
FRANK COLLINS.