(No Model.) 3 Sheets—Sheet 1.

S. & F. G. DAVIS.

WOOL WASHING APPARATUS.

No. 458,315. Patented Aug. 25, 1891.

Fig. 1.

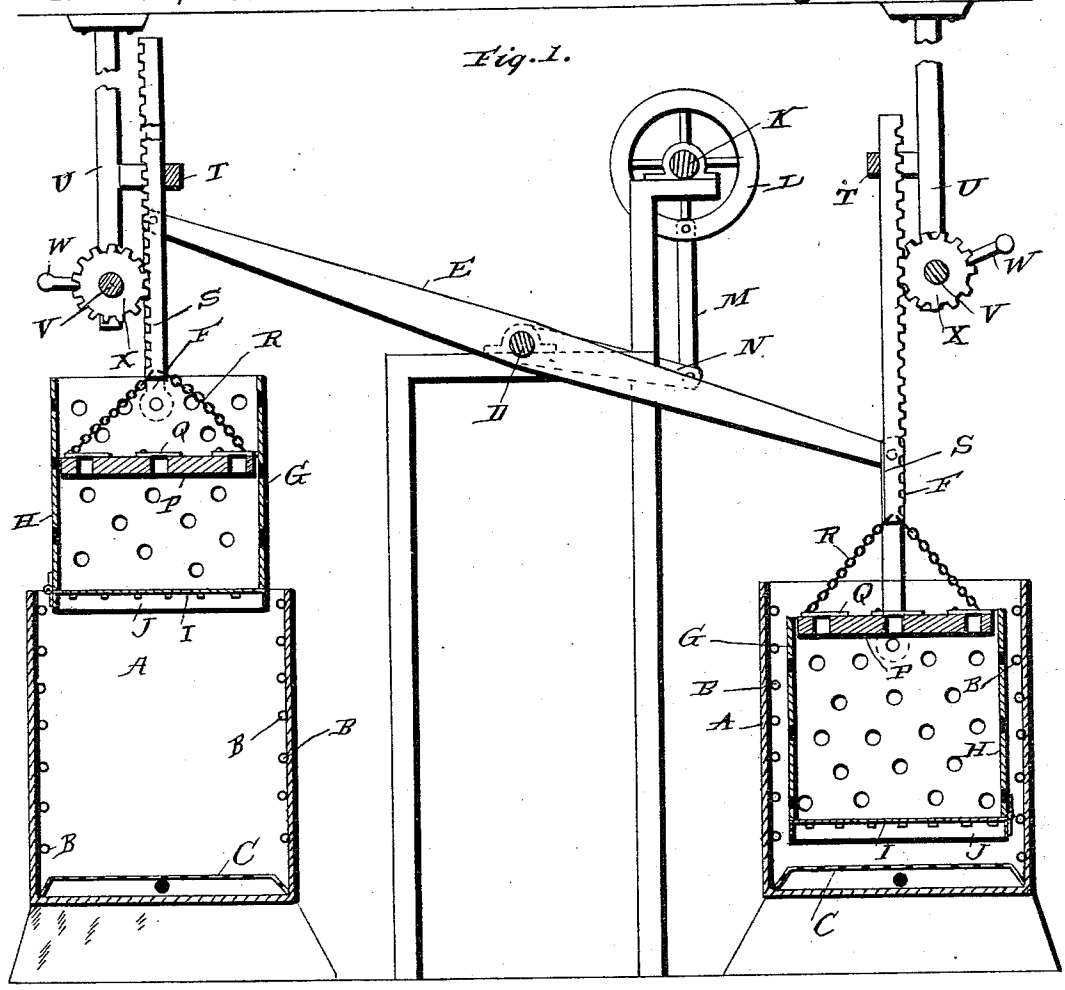
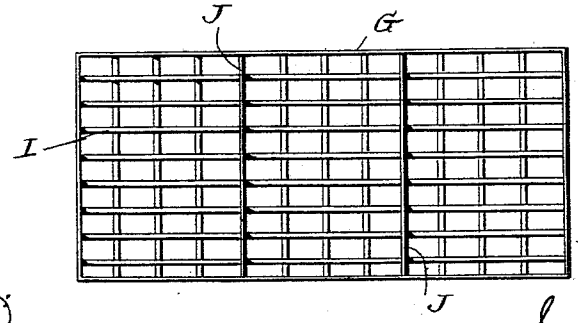


Fig. 4.



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Fig. 2.

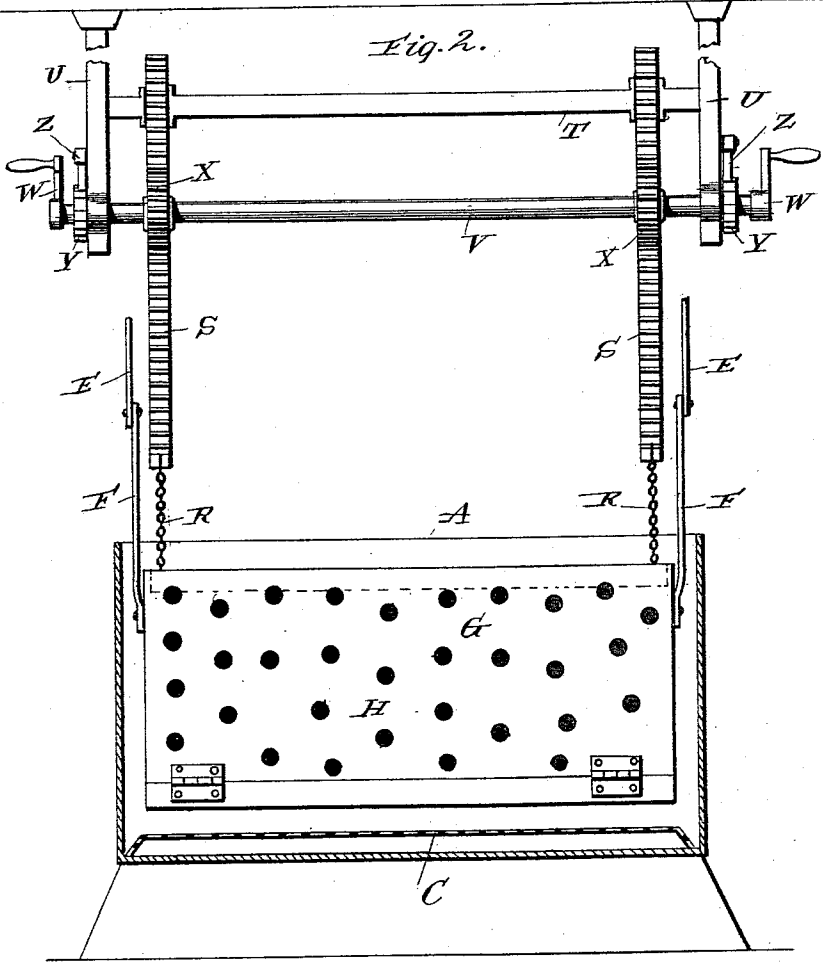


Fig. 5.



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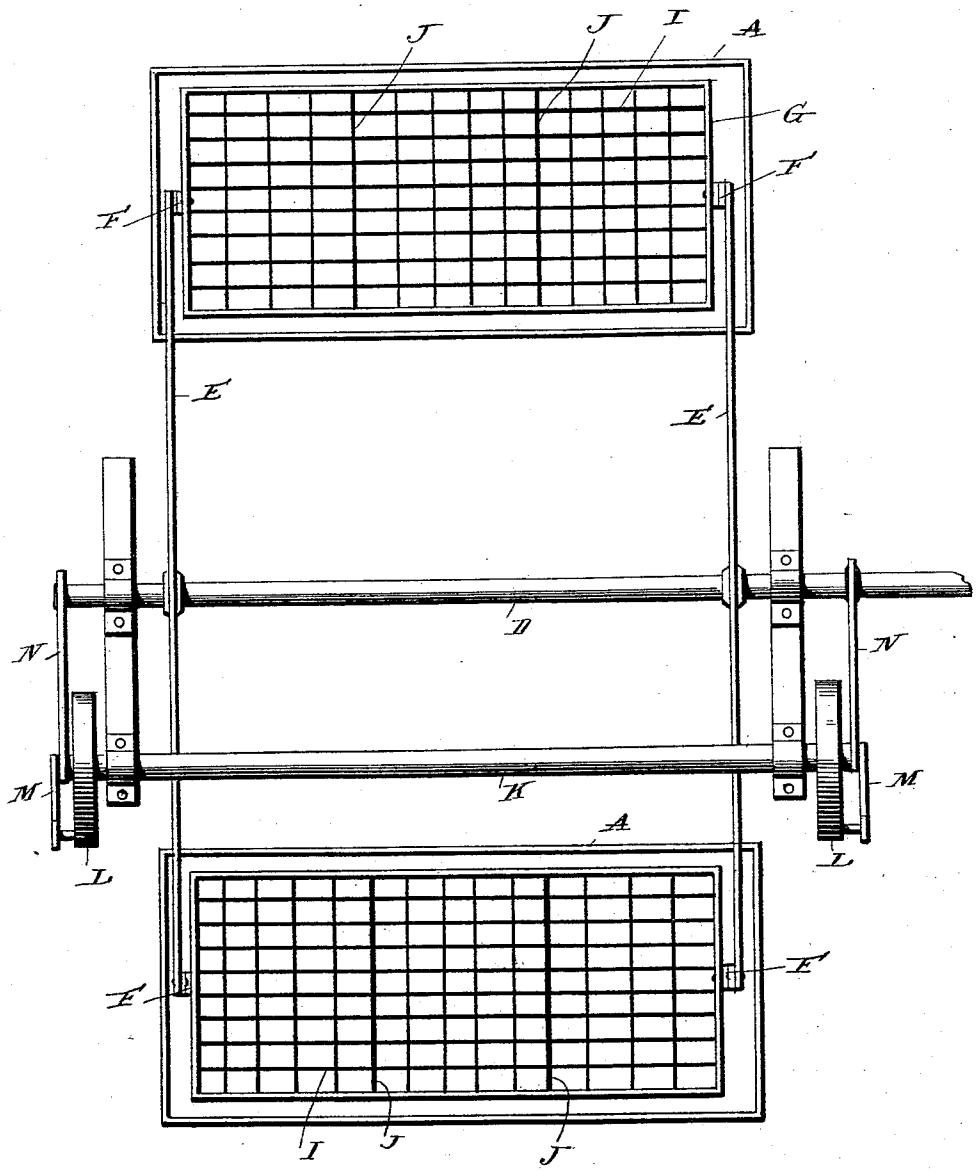
(No Model.) 3 Sheets—Sheet 3.

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Fig. 3.



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UNITED STATES PATENT OFFICE.

SAMUEL DAVIS AND FREDERICK G. DAVIS, OF LAS VEGAS, TERRITORY OF NEW MEXICO.

WOOL-WASHING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 458,315, dated August 25, 1891.

Application filed March 19, 1891. Serial No. 385,603. (No model.)

To all whom it may concern:

Be it known that we, SAMUEL DAVIS and FREDERICK G. DAVIS, citizens of the United States, residing at Las Vegas, in the county of San Miguel and Territory of New Mexico, have invented certain new and useful Improvements in Wool-Washing Apparatus; and we do 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.

Our invention has relation to improvements in apparatus for washing wool and the like; and it has for its objects, among other things, first, to provide a construction of apparatus whereby the wool may be conveniently handled and thoroughly cleansed, and, secondly, to provide a construction whereby after each immersion of the wool in the water-tanks it will be subjected to a pressure and the dirty water pressed out of the same, the said pressure being governed by regulating devices, so as to perform its functions without in any manner injuring the wool.

With these and other ends in view our improvements will be fully understood from the following description and claims, when taken in connection with the accompanying drawings, in which—

Figure 1 is a side elevation of our improvements with parts in section. Fig. 2 is an end elevation of the same with parts in section. Fig. 3 is a top plan view of the cleansing apparatus minus the pressure devices. Fig. 4 is a plan view of the open-work bottom of the wool receptacles or plungers; and Fig. 5 is a top plan view of the pressure-plate, illustrating the valve-gates thereon to a better advantage.

Referring by letter to the said drawings, in which corresponding letters indicate similar parts throughout the several views, A indicates the stationary water-tanks, of which two are preferably employed, arranged at a proportional distance apart approximately, as illustrated. These water-tanks A, which are preferably of a rectangular form and are open at their tops, are provided with a discharge-opening to discharge-water pipes, and in order to keep the water at a proper temperature for washing wool we provide steam-pipes B around the inside of the tanks; but it is obvious that, if desirable, a steam-jacket or other means of heating the water in the tanks might be employed in lieu of the pipes.

Within the tanks A, at a proper distance above the bottom thereof, is a perforated or open-work false bottom C, through which the sediment from the wool sifts and is prevented from again mingling with the water.

Journaled in suitable bearings upon a standard-frame situated between the stationary tanks A is a transverse rocking shaft D, upon which is keyed or fixed at a suitable distance apart two rocking beams E, which are of a length corresponding approximately to the distance between the stationary tanks and are designed to be operated, as will be presently described.

Pivotally connected to the ends of the rocking levers E and depending therefrom are bail-bars F, which have their lower ends pivotally connected in a suitable manner to opposite side walls of the plunging wool receptacles or cages G, which are designed to be alternately immersed in their respective tanks by the rocking of the beams E, as will be presently set forth. These wool receptacles or plungers G are of a form corresponding to that of the tanks A, in which they are designed to plunge, and they are open at their upper side, as shown, to receive a weighted pressure device, presently to be described.

The side walls of the rectangular receptacles G are perforated, as illustrated, to allow a free circulation of the water through the wool when the receptacle is immersed, and one of the side walls is provided with a hinged section H, which may be connected at its upper end to the main portion of the receptacle by hooks or other devices, and by this construction it will be seen that when it is desired to remove the wool from the receptacle the said hinged section H is let down and rests upon the edge of the tank A, when it will serve as an apron for the wool, which may be thus readily removed.

The bottom of the receptacles G, as better illustrated in Fig. 4 of the drawings, is preferably formed of open wire-work, and is situated in the receptacle at about the distance

illustrated above the lower edges of the side walls thereof, and by this construction it will be seen that the lower edges of the side walls serve to cut the water and prevent a splashing thereof when the receptacles G are plunged into the tanks.

Arranged transversely of the receptacles G, and at suitable distances apart are two strips J, of suitable material, which are set edgewise and have their ends connected to the side walls of the tank. These strips J, while serving to strengthen the bottom I, also serve, in conjunction with the lower edges of the side walls to prevent a splashing of the water, as has been described.

Journaled in suitable bearings upon a standard-frame and in a plane above or below the shaft D is a transverse shaft K, which carries adjacent to its ends two fly-wheels L, which are connected by levers M and N to the said shaft D and serve to impart a rocking motion thereto and to the levers or beams E, whereby the receptacles or plungers G will be caused to alternately plunge into the tanks A.

P indicates pressure-plates, which are of a form and size to enable them to enter the receptacles G. These pressure-plates, which are preferably formed of iron or other heavy material, are provided, as illustrated, with vertically-disposed openings, which are closed when desired by valve-gates Q, which are pivotally connected to the upper side of the plate. Thus it will be seen that in operation the water may be allowed to come up through the openings in the plate or made to seek passage through the perforations in the side walls and bottom of the plunging receptacles at each stroke or plunge thereof.

Connected in a suitable manner to the four corners of plate P are chains R, which have their ends connected in a suitable manner to the lower ends of vertically-disposed rack-bars S, of about the proportional length shown, which are guided in the transverse bar T of a hanger-frame. The hangers U, to which the horizontal bar T is connected, depend from a ceiling or frame, to which they are connected above the respective tanks A. Journaled in the hangers U adjacent to their lower ends is a transverse shaft V, which has keyed to its respective ends crank arms and handles W, which serve to turn the same to adjust the vertical rack-bars and the weighted pressure-plates, through the medium of pinions X, keyed on said shaft in line with the rack-bars and adapted to engage the teeth thereof. Fixed on the shaft V, outside the hangers U, are ratchet-wheels Y, which are adapted to be engaged by pawls Z, pivotally connected to the hangers, whereby the rack-bars may be locked in their adjusted positions. By this construction it will be seen that the weighted pressure-plates may be adjusted so as to exert a great or slight pressure upon the wool in the receptacles or plungers G, and that when no pressure is desired they may be adjusted up out of the way of the plunging wool-receptacles.

In operation the requisite amount of water is placed in the tanks A and is heated to the desired temperature, as described, and the receptacles G are charged with wool according to their capacity. The pressure-plates are then adjusted with respect to the receptacles through the medium of the devices set forth. The shaft K is then set in motion and driven by any suitable power, when motion will be imparted to the shaft D, and the rocking beams E and the respective receptacles G will be caused to alternately plunge into the tanks. Thus it will be seen that the wool is subjected first to a cleansing process, the water being caused to freely circulate therethrough by the plunging, and is then subjected to pressure, which causes the dirty water and a quantity of dirt to leave the wool.

Having described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a wool-washing apparatus, a wool-receptacle comprising open-work sides, one of which is provided with a hinged section, an open-work bottom situated above the lower edges of the sides, and strips set edgewise beneath said bottom, substantially as and for the purpose specified.

2. In a wool-washing apparatus, the combination, with a stationary water-tank, a rocking beam journaled on a standard adjacent to said tank, and an open-work receptacle for the wool connected to the end of said beam and adapted to be immersed in the tank, of a pressure-plate adapted to be adjustably fixed with respect to the wool-receptacle to operate in conjunction therewith, substantially as and for the purpose specified.

3. In a wool-cleansing apparatus, the combination, with a stationary water-tank, a rocking beam journaled on a standard adjacent to said tank, and an open-work receptacle for the wool connected to the end of said beam and adapted to be immersed in the tank, of a pressure-plate having vertical perforations and valve-gates adapted to close said perforations, an upright rack-bar connected to said plate, and a pinion adapted to adjust the rack-bar vertically, substantially as and for the purpose described.

4. In a wool-washing apparatus, the combination, with a water-receptacle, of a vertically-movable wool-receptacle arranged therein and a pressure-plate arranged in the wool-receptacle in an adjustably-fixed manner, substantially as specified.

5. In a wool-washing apparatus, the combination, with two stationary tanks, of the open-work wool-receptacle adapted to be immersed in said tanks, the rocking beams fixed on a transverse shaft and connected at their ends to the said receptacle, the transverse shaft carrying the rocking beams journaled on a

standard intermediate of the stationary tanks, a transverse shaft journaled on the standard and carrying fly-wheels adjacent to its ends, the levers connecting said fly-wheels with the shaft carrying the rocking beams, and a suitable means for actuating the shaft carrying the fly-wheels, substantially as and for the purpose described.

6. The combination, with a plunging wool-receptacle, of the pressure-plate connected to a vertically-disposed rack-bar, a pinion-shaft adapted to engage and adjust said rack-bar, a ratchet-wheel also carried by said transverse shaft, and a pawl adapted to engage the ratchet-wheel to lock the pinion and rack-bar in their adjusted positions, substantially as specified.

In testimony whereof we affix our signatures in presence of witnesses.

SAMUEL DAVIS.
FREDERICK G. DAVIS.

Witnesses:
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ALICE H. RICE.