J. A. Clarke,

Wool-Washing Machine,

No 46,078. Patented Jan. 31, 1865.

Fig. 1.

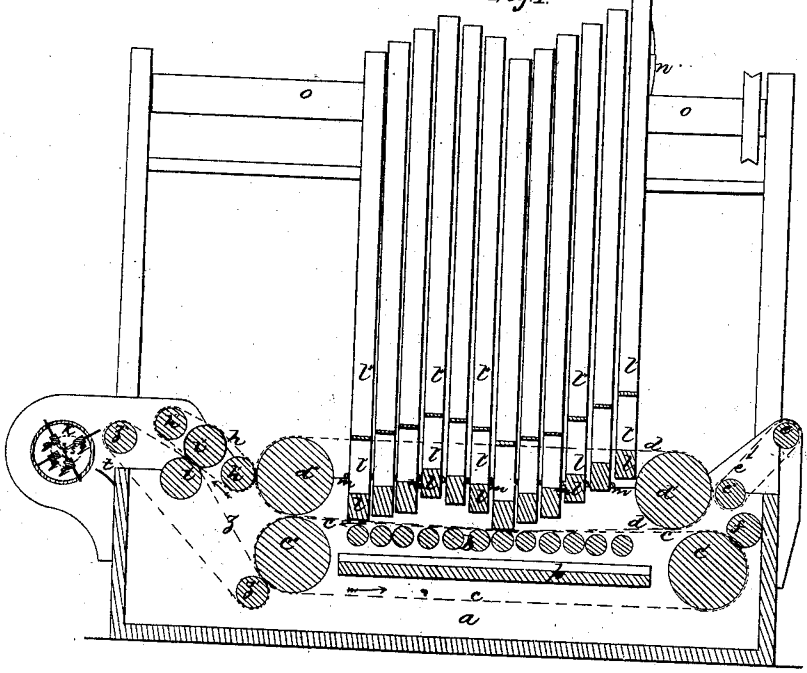


Fig. 3.

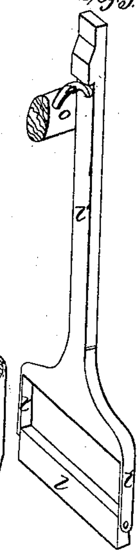
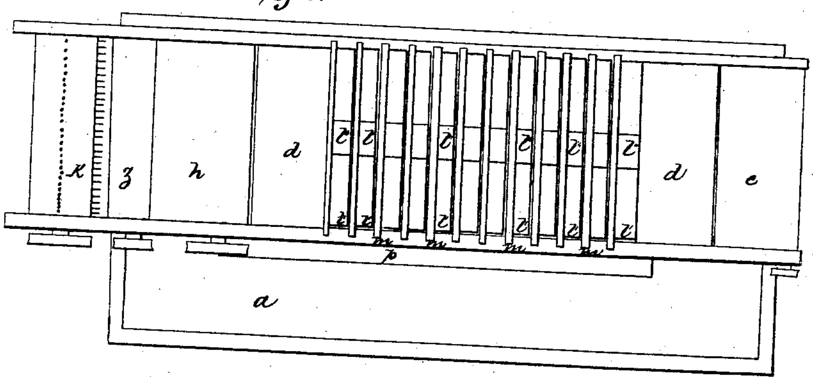


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

JAMES A. CLARKE, OF NEW YORK, N. Y.

IMPROVEMENT IN MACHINES FOR WASHING WOOL.

Specification forming part of Letters Patent No. **46,078**, dated January 31, 1865.

To all whom it may concern:

Be it known that I, JAMES A. CLARKE, of the city, county, and State of New York, have invented certain new and useful Combinations of Machinery for Washing Wool, &c.; and I do hereby declare and ascertain my said invention, referring to the accompanying drawings, in which—

Figure 1 is a vertical longitudinal section; Fig. 2, a plan with upper gear removed; Fig. 3, a perspective view of a stamper and cam.

My invention consists in the combination and arrangement of certain machinery for the purpose of washing wool, &c., whereby a simple and cheap machine is produced that will efficiently cleanse the material and conveniently discharge the wool or other material when cleaned.

The construction of my improved wool-cleaner is as follows:

An oblong reservoir or rectangular trough, *a*, is formed, of any size found most convenient to accomplish the work, and of a sufficient depth to contain the machinery acting upon the wool under water. This reservoir *a* is divided longitudinally into two parts, as is seen in the plan, Fig. 2, one part containing the machinery, the other a surplus of water. There is a free communication for the water from one to the other.

The machinery consists of a bed of rollers, *b*, the journals of which turn in permanent fixtures in the reservoir, or in an independent frame placed within it. (I prefer the latter, as it enables me to raise the machinery out of the reservoir without taking it apart to clean out the reservoir.) Over the bed of rollers an endless apron, *c*, runs, which returns back below them, running around the carrying-rollers *c' c''*. The arrows give the course of the several aprons in Fig. 1. Over the endless apron *c*, above named, there is a second endless apron, *d*, the lower section of which runs close to the upper surface of the lower one. This upper apron does not project out as far at one end as the lower one, and it passes around two carrying-rollers, *d' d''*, of sufficient diameter to allow the proper rise and fall of certain stampers, to be hereinafter described. At one end of the endless apron *c* there is an endless feed-apron, *e*, upon which the wool is spread to be fed into the machine. This endless feed-apron *e* is supported in an inclined position by carrying-rollers *e' e''*, placed in proper position for the purpose. Under this feed-apron should be placed a heavy or weighted roller, *f*, which bears upon carrying-roller *c'*, and is for the purpose of pressing out the dirty water from the apron just before the wool is fed onto it. At the end of the endless aprons *c* and *d*, opposite the feed-apron *e*, are two endless aprons, *g* and *h*. The lower one, *g*, extends from a roller, *g'*, situated close to and just below the level of roller *c''*, (so as to receive the wool from the apron *c*,) up to the roller *g''* above the reservoir, passing in its course over the roller *i*. The apron *h* runs over two carrying-rollers, *h' h''*, so placed as to bring its surface in contact with apron *g*. The wool, after being washed, passes up between them. Between the two rollers *h' h''* there is a pressure-roller, *i'*, that bears upon the roller *i*, above named, and (the point of bearing being above water) presses out the water from the wool before delivering it. A picker-wheel, *k*, is placed just opposite the point of delivery of the rollers *g'' h''* and throws the wool off from the machine, the course of the wool being from the feed-apron, between the aprons *c* and *d*, over the bed of rollers *b*, where it is washed beneath the water in the reservoir, as hereafter described, and thence between the delivering-rollers to the picker-cylinder *k*, before named.

The washing apparatus consists of a series of oblong bars, *l*, jointed to a bail or arms, *l'*, which are affixed to an upright shank or rod, *l''*. This is most clearly shown in Fig. 3. (The object of jointing the bar is to allow lateral play while resting upon the moving aprons.) There is a stamper thus constructed over each roller of the roller-bed *b*, the bar *l* being parallel with and directly above said roller. The arms to which it is jointed extend up on each side of the upper portion of the endless apron *d*, and join the standard, shank, or rod *l''* in the center above, the said upper portion of apron *d* running in the space above the bar, while the lower portion, together with the endless apron *c*, upon the bed of rollers *b*, that bear the wool between them, are below the bar *l*. The series of stampers are held in place by proper guides, the lower ones, *m*, serving to bring the bars into proper position for their descent before falling. The stampers are raised by arms or wipers *n* on a shaft, *o*, overhead, which runs

along beside them, the wipers being set spirally, so as to raise the stampers alternately, as in ordinary stamping-mills for other purposes.

It is obvious that the endless apron *c* could be made to take the place of the feed-apron, and other modifications might be made in the machine without changing its character.

To prevent the dirt washed out of the wool on the bed of rollers from falling on the inside of the lower section of endless apron *c*, a shelf or board, *p*, is inserted under the bed of rollers *b* and over the return or lower section of the endless apron *c*. This is so inclined as to convey the dirt off laterally into the part of the reservoir opposite that in which the machinery is situated.

It is my purpose, after the first washing, to pass the wool through a second and third, &c., apparatus to further wash and rinse it.

The picker-cylinder *k*, above named, I construct as follows: The cylinder is made hollow and has a series of four (more or less) rows of teeth projecting radially through the periphery. Each row of teeth is affixed to a bar, *q*, within the cylinder, which projects through the heads thereof at each end, in which there is a radial slot, *s*, so as to allow the bar *q* to slide outward and back, to and from the axis of the cylinder. By the movement of this bar the teeth are projected out through holes in the periphery, or retracted, so as to have their points even with or below the surface of the cylinder. The ends of the bars enter an eccentric groove or cam-groove in the stationary frame, (shown by dotted lines in Fig. 1,) that causes them to slide in and out as the cylinder revolves, so as to cause the teeth to be projected as they approach the carrying-rollers *g''* *h''* and be drawn in on the opposite side, the effect being to allow them to seize the wool as it is fed forward and discharge it with certainty by the withdrawing the teeth therefrom. The teeth, on seizing the wool, carry it down between the stationary teeth *t* before leaving it.

The carrying rollers and other moving parts are properly connected by bands or otherwise with the moving power.

Having thus fully described my improved machinery for washing wool, &c., what I claim therein as new, and for which I desire to secure Letters Patent, is—

The combination of the apparatus described for conveying the wool, &c., through the reservoir with the apparatus for washing the same, consisting of the stamps, constructed as described, acting on a roller-bed or its equivalent, as and for the purposes herein set forth.

JAMES A. CLARKE.

Witnesses:
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