May 12, 1925.

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J. F. WHITE ET AL

WOOL WASHING MACHINE

Filed April 29, 1921

2 Sheets-Sheet 1

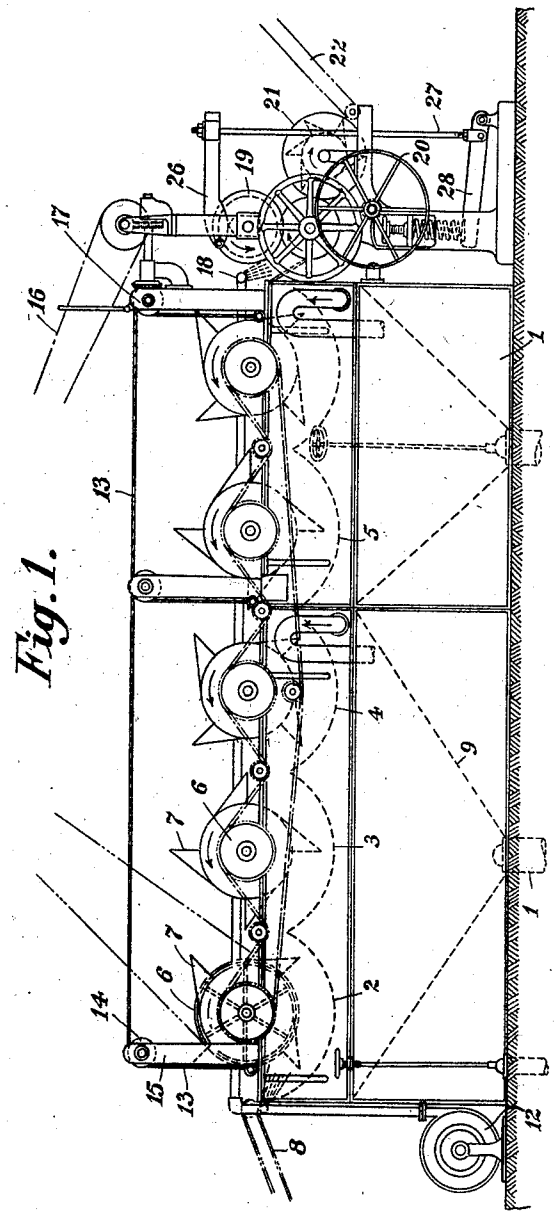


Fig. 1.

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2 Sheets-Sheet 2

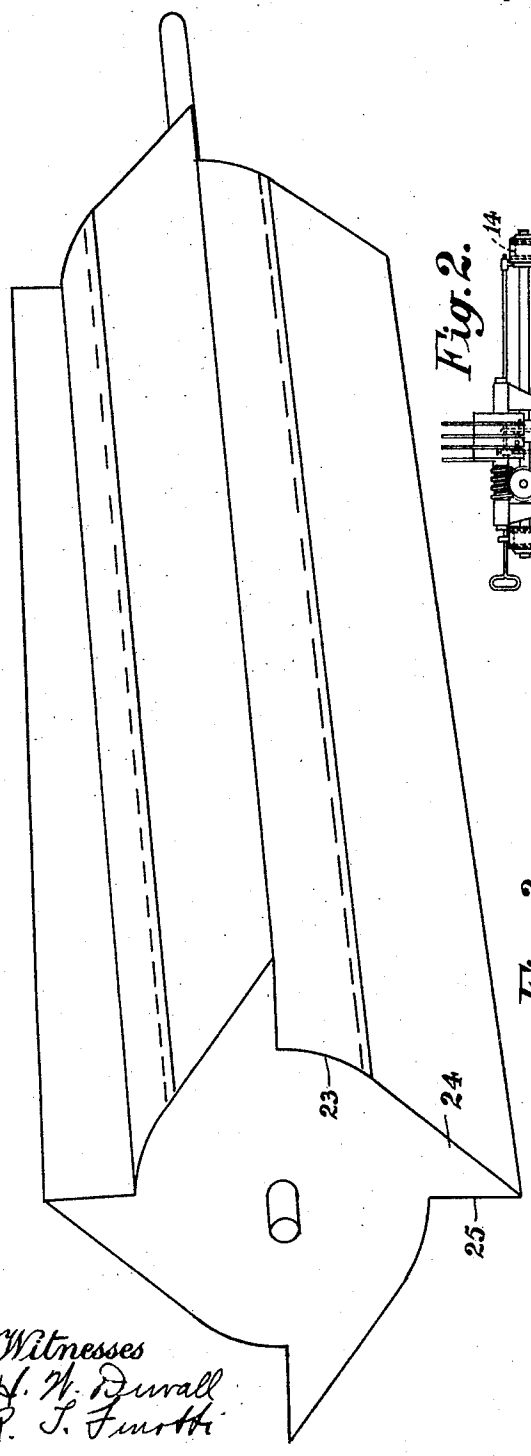


Fig. 3.

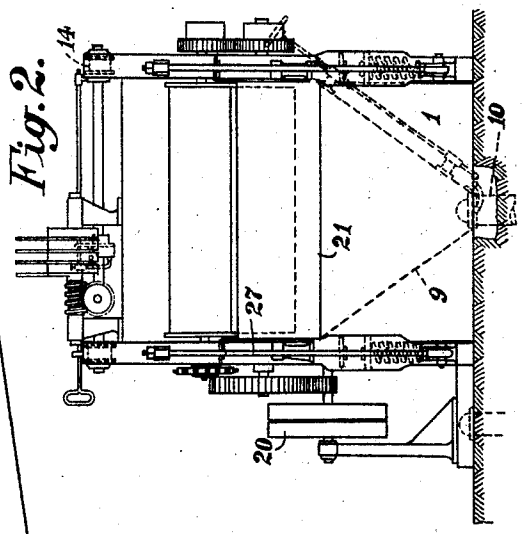


Fig. 2.

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Patented May 12, 1925. 1,537,720

UNITED STATES PATENT OFFICE.

JOHN FRANCIS WHITE AND WILLIAM HOLLERAN WHITE, OF BRADFORD, ENGLAND.

WOOL-WASHING MACHINE.

Application filed April 29, 1921. Serial No. 465,459.

(GRANTED UNDER THE PROVISIONS OF THE ACT OF MARCH 3, 1921, 41 STAT. L., 1313.)

To all whom it may concern:

Be it known that we, JOHN FRANCIS WHITE and WILLIAM HOLLERAN WHITE, subjects of the King of Great Britain, residing in Bradford, in the county of York and Kingdom of England, have invented certain new and useful Improvements in Wool-Washing Machines, for which we have filed an application in England, October 8th, 1919, Patent No. 162,313, of which the following is a specification.

The present invention relates to improvements in wool washing machines, for the removal of fatty matter, dirt, sand, vegetable matter and the like from wool.

It has been usual to wash wool in a machine consisting of a long bath in which the wool is forked by a series of reciprocating prongs progressively onwards through the bath.

According to the present invention, wool is arranged to be passed through the scouring bath in a path similar to a series of cusps.

This may be obtained by providing a false bottom for the washing vessel consisting of a number of perforated semi-circular or the like curved parts in sequence over which the wool is passed by any desired means but preferably by drums having tangential surfaces thereon revolving coaxially with the said concave false bottom parts.

The invention is more particularly described with reference to the accompanying drawings in which:—

Figure 1 is an outside elevation of one form of construction.

Figure 2 is a corresponding end view.

Figure 3 is an enlarged view of one of the drums.

The wool washing machines comprises a vessel 1, provided with a false bottom consisting of a series of perforated semi-circular or the like curved plates 2, 3, 4, 5, . . . in sequence. Concentric with these curved plates, revolve rotary drums or cylinders 6, having a plurality of tangential beaks 7, of wedge shape, which beaks are consecutively formed with circumferential parts of the said drums. By this means the wool is fed progressively forwards through the machine by the ends of the tangential beaks and owing to the shape of these, there is no tendency for the wool to lap round them but this is taken up by one drum as it leaves the last. Further the cylindrical parts of the drums maintain the wool immersed below the surface of the liquor.

The wool therefore is fed into the machine by means of a travelling conveyor 8, and is here submitted to a water spray as is usual, from a rotary pump 12. In its passage through the machine it moves in a number of semi-circular or other curved paths end to end formed of a plurality of semi-circular false bottoms 2, 3, 4, 5, &c. arranged above the bottom of the vat or vessel 1, which is of pyramidal shape as shown at 9.

It is preferred to divide the bottom of the vessel up into a number of compartments (two in the instance shown) so that the accumulated dirt in the bottom of any part can be drawn off separately.

The drums 6, are mounted on a frame suspended by cables 13, from pulleys 14, on brackets 15, on the main frame of the machine so that by operating the handle 16, the pulley over which the cables 13, are wound, can be turned in either direction, to raise or lower the drums from the vessel 1, or in certain cases it may be desirable to use this means to adjust the spacing of the beaks of the rollers from the false bottoms 2, 3, 4, 5, &c.

It will be usually desirable to provide some stop motion to prevent the lifting of the rollers too far upwards. This may be any mechanical form of device desired.

As the wool leaves the machine, it is subjected to a water spray 18. This has the effect of moving the wool into the path of the squeeze rollers 19, and further of washing back the dirt which will be squeezed out of the wool as it is passed through these rollers.

The squeezing pressure of these rollers is adjustable by screw and lever mechanism such as 26, 27 and 28.

After leaving the squeezing rollers the wool is subjected to a beater such as 21 which may be of the form shown in Fig. 3, and similar to the cylinders or drums 6, The wool is thereby opened which is extremely useful before passing the wool to a second washing machine working in tandem and fed by the conveyor 22 or of course when passing the wool from the final washing machine to a drying mechanism as usual.

The use of an operating drum between

a pair of washing machines in tandem is found to give very desirable results as the wool is in better condition for being worked upon by the next machine.

The rollers 6, and 21, are preferably of the form shown in Fig. 3, on a large scale having partial circumferential portions 23, tangential portions 24, and radial portions 25, three or more of such portions being arranged round the roller as shown.

We declare that what we claim is:—

1. A wool washing machine comprising in combination, a vat to contain liquor, a tray disposed therein so as to be submerged beneath the washing liquor formed of a sequence of semi-cylindrical, perforated surfaces, a plurality of rotatable drums provided with solid faced beaks and spaced apart so that the beaks thereof are out of contact with each other during the revolution of said drums, said beaks rotating in proximity to the cylindrical surfaces of the tray.

2. A wool washing machine comprising in combination, a vat to contain liquor, provided with a bottom formed with a plurality of recesses of substantial inverted pyramidal-shape, means for draining each recess separately, a tray disposed above said recesses in said vat and submerged beneath the washing liquor formed of a sequence of semi-cylindrical, perforated surfaces, and a sequence of rotatable drums disposed one over each surface and provided with solid-faced beaks rotating in proximity to each surface.

In witness whereof, we have hereunto signed our names this 11th day of April, 1921, in the presence of two subscribing witnesses.

JOHN FRANCIS WHITE.
WILLIAM HOLLERAN WHITE.

Witnesses:
HENRY J. WHITE,
JOHN F. WHITE, Junior.