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APPARATUS FOR CLEANING FELTS ON PAPER MAKING MACHINES

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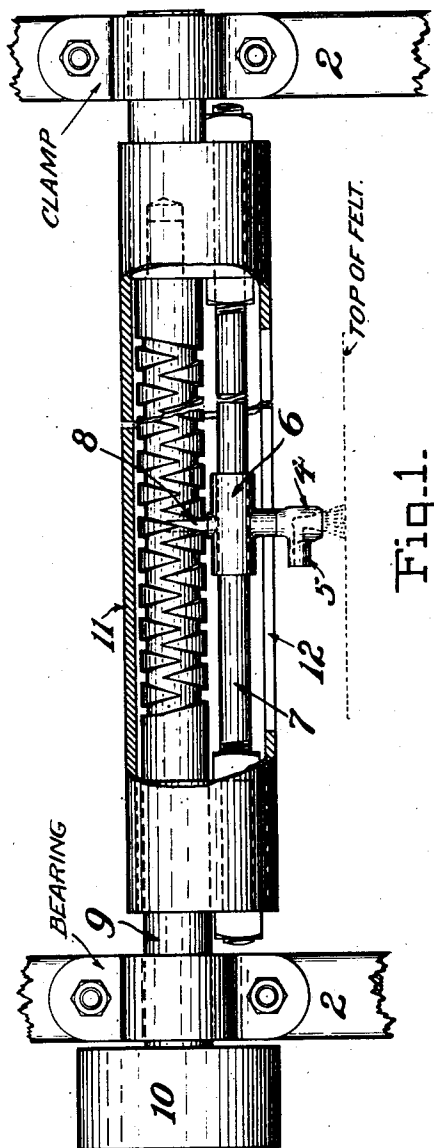


Fig. 1.

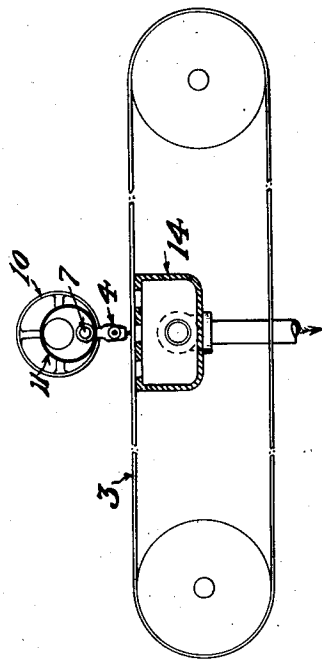


Fig. 3.

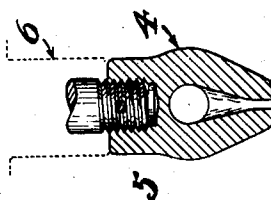


Fig. 2.

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UNITED STATES PATENT OFFICE.

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APPARATUS FOR CLEANING FELTS ON PAPER-MAKING MACHINES.

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This invention relates to devices for the cleaning of felts on papermaking machines, and has for its object the improving of the method of removing therefrom small particles of pulp and other foreign substances the nonremoval of which interferes with the proper functioning of such felts.

To this end we employ a particular structure and arrangement of parts as illustrated in the accompanying drawings, but as other mechanical movements may be substituted for those which we now employ without departing from the spirit of our invention, we do not wish to limit ourselves to the particular mechanism illustrated, in which:

Fig. 1 is an elevation, partly in section, illustrating the flushing apparatus which we now use.

Fig. 2 is a section across the nozzle through which water is discharged onto the felt.

Fig. 3 illustrates the relative position of the flushing apparatus and the co-acting suction box.

The same reference characters refer to the same parts throughout the several views.

Referring to the drawings, 2—2 represent portions of the side frame of a paper-making machine between which the felt 3, travels. Between these side frames and mounted thereon (or on any other suitable support) so as to lie parallel with and across the felt, and in proper proximity therewith, we place our flushing apparatus.

Reference to Fig. 1 will show that the flushing apparatus consists of a nozzle 4, provided with an inlet nipple 5, adapted to be connected by a flexible tube or pipe (not shown) to a source of supply of water under pressure. The nozzle 4, is mounted on a cross-head 6, slidable on a guide bar 7. Pivoted in the top of cross-head 6, is a forked thread engaging member 8, adapted to engage with double cut, or right and left threads formed on the driving shaft 9. One end of the driving shaft is provided with a driving pulley 10, adapted to be driven from a convenient rotating part of the paper machine on which the device is installed.

The double cut threads on the shaft 9, terminate in cam faces adapted to reverse the angle of the forked member 8, to the end that when the cross-head 6 reaches the limit of its normal travel in one direction, the forked member will at once enter the

oppositely cut thread and so automatically reverse the direction of motion of the cross-head, and the nozzle carried thereby will not come to rest at the end of its travel for any appreciable length of time. The nozzle 4, is adapted to deliver a broad, comparatively thin chisel-like jet of water and the immediate reversal of direction of lateral travel without appreciable stoppage, together with the uniform rate of travel at all points, forms an important point in our improved working method as will hereinafter appear.

In mounting the mechanism shown we have employed a cylindrical cover 11, provided with a longitudinal slot 12, in which the nozzle 4, reciprocates. As the method of mounting this device is clearly disclosed in Fig. 1, and forms no principal part of our method, a detailed description thereof is omitted.

Under the felt 3, at a point directly beneath and in line with the line of travel of the flushing device, we mount a suction box 14, in the face of which we form a series of slots. The relative position of the nozzle and box being such that one (or more) slots are positioned on each side of the line of travel of the nozzle, and one directly beneath it.

The operation of our devices and our method of washing is as follows:—

After the machine on which is the felt to be washed, has been started, water under pressure is turned on and is ejected from the nozzle 4, with considerable force so that the chisel-like jet of water will loosen and force through the felt any foreign matter which may have become lodged between the yarns forming the same. As this jet of water will, if continued in one spot for an unusual length of time, cause excessive wear on the felt at that particular place, it is important that the rate of travel of the jet be constant.

By making the suction box of sufficient width to permit a slot therein to be exposed at each side of the one over which the jet is discharged, we find that the suction on the felt just prior to its receiving the forceful jet of water tends to loosen somewhat any foreign matter which may have become clogged in between the yarns, so that a less forceful jet will wash out the foreign matter (with the aid of the suction) than that which must be employed if the advance suc-

tion is not used. The function of the slot behind the jet is to remove surplus water from the felt in the usual manner.

The flushing mechanism is preferably so
5 timed that the nozzle travels laterally over the felt a distance equal to the width of the water jet, with each revolution of the felt.

We claim:—

A flushing device for washing foreign
10 matter from the felts on paper making machines, comprising a driving shaft mounted

above and across the felt; a nozzle on a guide, adapted to deliver water under pressure in a chisel-like jet; and means whereby the regular rotation of said driving shaft 15 will cause a reciprocating movement of said nozzle and at a regular speed.

In testimony whereof we have affixed our signatures.

EUGENE H. LANSING, JR.
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