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J. E. ALEXANDER ET AL.

CLEANING MEANS FOR DRUM DRIERS

Filed Aug. 24, 1925

FIG. 1

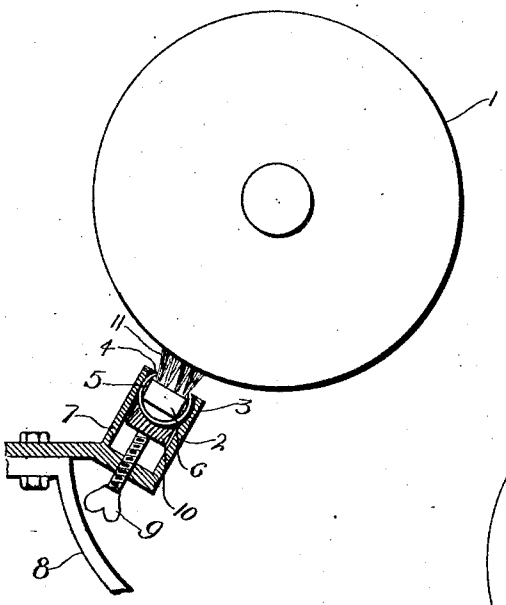


FIG. 2

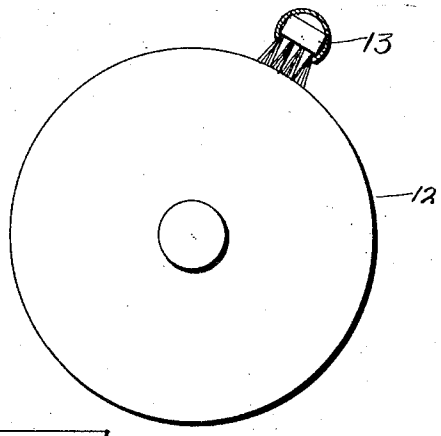
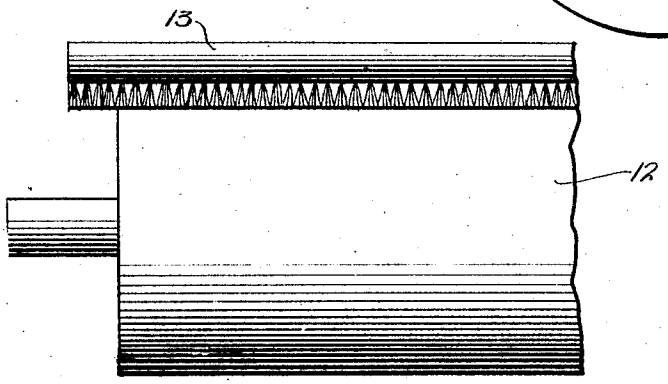


FIG. 3



INVENTOR

John E. Alexander
Casper E. Youngchild,

BY Charles W. Nields ATTYS

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UNITED STATES PATENT OFFICE.

JOHN E. ALEXANDER, OF PORT EDWARDS, AND CASPER EDWARD YOUNGCHILD, OF NEKOOSA, WISCONSIN; SAID YOUNGCHILD ASSIGNOR TO SAID ALEXANDER.

CLEANING MEANS FOR DRUM DRIERS.

Application filed August 24, 1925. Serial No. 51,898.

This invention relates to a cleaning mechanism and more particularly to a brush mechanism for cleaning the surface of a drying cylinder on a paper machine.

The drying of paper is generally effected on revolving heated drums or cylinders, around which the web of paper is made to pass. The efficiency of these drying cylinders depends in large part upon the freedom of the outer drum surface from scale, rust and the like.

It is therefore an object of this invention to provide cleaning means for drum driers adapted to increase the thermal efficiency thereof and also to improve the surface of said drums for making paper.

Other and further important objects of this invention will be apparent from the disclosures in the drawings and specifications.

The invention (in a preferred form) is illustrated in the drawings and hereinafter more fully described.

On the drawings:

Figure 1 is an end elevation of an upper drying cylinder provided with a cleaning device embodying the principles of our invention.

Figure 2 is an end elevation of a lower drying cylinder showing a cleaning mechanism in operative position.

Figure 3 is a longitudinal broken view of the same.

As shown on the drawings:

The reference numeral 1 indicates an upper drying cylinder or a drum such as is found in the ordinary paper making machine. A cleaning mechanism 2 is positioned on the lower side of said drum at a slight angle from the vertical line passing through the axis of said drum. Said cleaning mechanism 2 comprises a pipe 3 having a longitudinal slot 4 extending substantially the entire length thereof and a brush 5 adapted to be slipped into said pipe 3 from one end thereof. Said brush 5 is formed with a backing block 6 of rectangular cross section and adapted to fit snugly within said pipe 3 and bristles 11 extending through said slot 4. The bristles 11 are preferably formed of wire but other suitable material may be used. The pipe 3 extends the length of the drier drum 1 and is supported at each of its ends by a bifurcated bracket 7 bolted to a portion of the drier frame 8. The brush 5 is adapted to be adjustably held aganist the surface of the drier drum 1 by means of an adjusting screw 9 threaded through the back of the bifurcated bracket 7, the end of said screw being rotatably secured in a bearing block 10. The bearing block 10 is adapted to slide in the bifurcated bracket 7 and at the same time is secured to the pipe 3 so that movement of said block 10 effects corresponding movement of the brush 5. By turning the screw 9 the contact of the bristles 11 with the surface of the drier drum may be adjusted to any desired pressure.

It will be understood that in the case of a paper machine the paper web passes over only a portion of the drying cylinders. In the case of an upper drying drum, as illustrated in Figure 1, the web of paper is in contact with the upper half of the drying drum only. The brush mechanism 2 is therefore positioned against the lower surface of the drying drum so as to remove all scale, rust and other accumulations on the surface of the drying drum and to keep it highly polished.

In Figures 2 and 3 there is shown a lower drying drum 12 and a brush mechanism 13, similar to that already described, located on the upper surface of the drying drum at a slight angle to its vertical axis. In this case the web of paper is in contact with the lower half of the drying drum only and the brush mechanism 13 bears against the free surface of the drum to clean and polish the same.

It is thus seen that we have provided a brush cleaning mechanism for cleaning and polishing the surface of a drying cylinder of paper machines and the like. Said brush mechanism is much more satisfactory than the present scrapers, or doctors, used in connection with drum driers, in increasing the thermal efficiency of the driers.

We are aware that numerous details of construction may be varied through a wide range without departing from the principles of this invention, and we therefore do not purpose limiting the patent granted otherwise than necessitated by the prior art.

We claim as our invention:

1. The combination with a revolving drying cylinder, of a non-revolving brush mechanism, means for supporting said brush in contact therewith, and means for adjusting the pressure of said contact.

2. The combination with a drying cylinder of a paper machine, of a brush mechanism therefor comprising a slotted tube, a brush rigidly held therein, the bristles of said brush extending through said slot, and means for supporting said tube for holding said bristles in contact with the surface of said cylinder.

3. The combination with a drying cylinder of a paper machine, of a brush cleaning mechanism extending longitudinally thereof and means for supporting said mechanism to cause the same to engage the surface of said cylinder.

In testimony whereof we have hereunto subscribed our names.

JOHN E. ALEXANDER.
CASPER EDWARD YOUNGCHILD.