(No Model.)

O. J. THOMAS.

AUTOMATIC SEVERING DEVICE FOR PULP MACHINES.

No. 457,467. Patented Aug. 11, 1891.

Fig. 2.

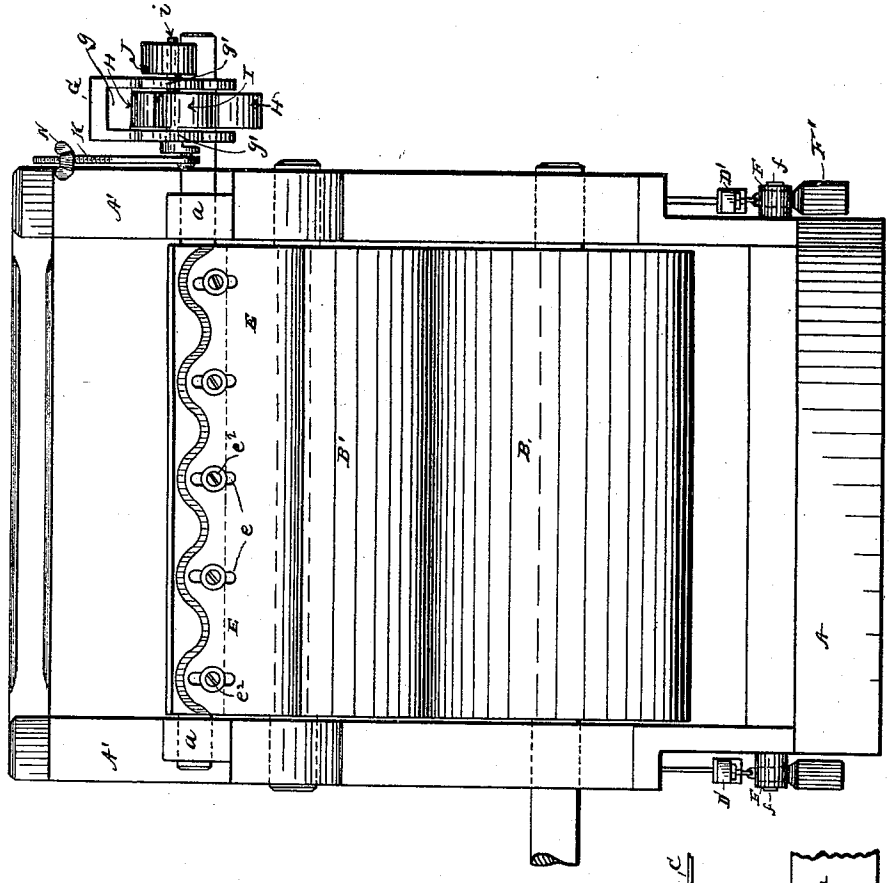
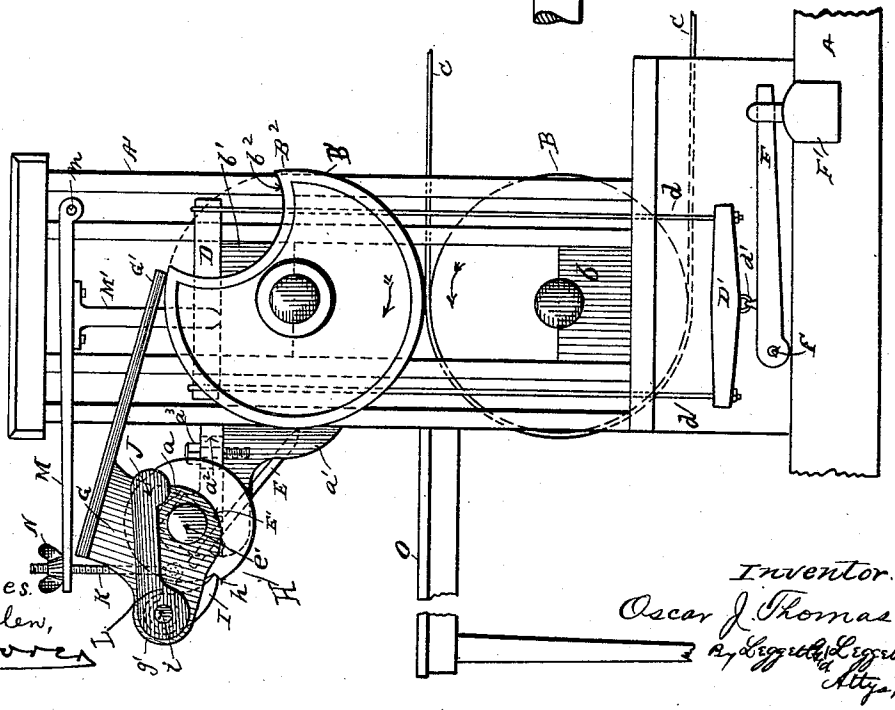


Fig. 1.



Witnesses.
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

OSCAR J. THOMAS, OF PENINSULA, OHIO, ASSIGNOR OF ONE-HALF TO JOHN SEEBECK, OF SAME PLACE.

AUTOMATIC SEVERING DEVICE FOR PULP-MACHINES.

SPECIFICATION forming part of Letters Patent No. 457,467, dated August 11, 1891.

Application filed October 11, 1890. Serial No. 367,822. (No model.)

To all whom it may concern:

Be it known that I, OSCAR J. THOMAS, of Peninsula, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Automatic Severing Devices for Pulp-Machines; and I do hereby 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 pertains to make and use the same.

My invention relates to improvements in automatic severing devices for pulp-machines for severing and cleaving the pulp from the receiving-roller; and it consists in certain features of construction and in combination of parts hereinafter described, and pointed out in the claim.

In the accompanying drawings, Figure 1 is a side elevation, and Fig. 2 an end elevation, of a machine embodying my invention.

A represents the bed of the machine, having attached upright housings A′ for supporting rollers B B′, the former being journaled in stationary boxes *b* and the latter being journaled in boxes *b′*, adapted to slide up and down the housings with the up-and-down movement of roller B′. The lower roller B is provided in the usual manner with an endless apron C, by means of which the pulp is brought to the rollers, the pulp being taken off the apron by the upper or feed roller B′. Cross-bars D rest on the sliding boxes *b′* of roller B′, said bars being connected by rods *d* with cross-bars D′, the latter in turn being connected by links *d′* with levers F near the fulcrums *f* of the latter, and levers F are weighted, as shown at F′, to press the upper roller B′ against the lower roller and drain the pulp of water as the pulp accumulates on roller B′. This peculiar construction of connecting and draining mechanism, however, forms no part of my present invention, and hence will not be further referred to in this specification. When the pulp has accumulated to a desired thickness on the feed-roller, the pulp is severed lengthwise of the roller and taken off in sheets, such sheets, when afterward folded and dried, constituting the article of commerce from which large varieties of paper are manufactured. For automatically severing the pulp and cleaving the same from the roller when such pulp has reached a predetermined thickness I provide the following mechanism, to wit:

E represents the knife for severing the pulp, and E′ represents the knife-bar, to which the knife is adjustably secured by means of slots *e* and set-screws e^2, the trunnions of the knife-bar being journaled in boxes *a*, that are supported, preferably by brackets *a′*, connected with the housings. Boxes *a* are preferably adjustable to and from the housings by means of slots a^2 and screw-bolts a^3. On the one trunnion *e′* of the knife-bar is loosely mounted a block G, and rigidly attached to or integral with the top of this block is a lever G′, the free end of the latter extending over the respective trunnion of the feed-roller and in position to engage a cam B^2, that is mounted on such trunnion of the feed-roller.

Block G is slotted longitudinally, as shown at *g*, and within this slot, on the trunnion of the knife-bar, is rigidly mounted a notched disk H. Block G has ears *g′* projecting forwardly at either side of disk H. Ears *g′* afford journal-bearing for a spindle *i*, and upon this spindle, between ears *g′*, is rigidly mounted a dog I, that is adapted to engage notch *h* of the aforesaid disk H, as will hereinafter more fully appear. Spindle *i* extends somewhat beyond the respective ears *g′* and has at the one end rigidly mounted thereon or attached thereto a weight, preferably a bent arm J. At the other end spindle *i* is connected with a rod K by means of a link L. Rod K extends upwardly through a hole in the forward end of a lever M and is screw-threaded at its upper end for receiving a thumb-nut N, as shown.

Lever M is fulcrumed at the side of the respective housing A′ above the trunnion of the feed-roller B′, preferably near the upper end of the housing and rearward of the respective trunnion of the feed-roller, as shown at *m*, the forward end of lever M being adapted to engage thumb-nut N. Lever M has a depending arm M′, the free end whereof rests, preferably, upon box *b′* of the feed-roller.

In the operation of the device (the rollers traveling in the direction indicated by the arrows) as the pulp accumulates on the feed-

roller B′ the latter gradually rises. The depending arm M′ of lever M, having contact with box b' of the feed-roller, is elevated by the movement of the roller, gradually tilting lever M upward, and by means of the forward end of this lever having contact with thumb-nut N rod K is elevated. This elevation of rod K tilts link L upward, and the latter in turn actuates dog I to its engagement with disk H at notch h. Lever G′ has in the meantime operated idly from its engagement with the depression b^2 in cam B^2.

The arrangement and adjustment of the parts are such that when the pulp on the feed-roller has reached a predetermined thickness the tooth of dog I will enter the notch in disk H, thereby locking lever G′. This occurs just as lever G′ has entered the depression b^2 in the cam, and hence when the lever is again tilted upward after passing the depression in the cam knife E is actuated in the direction to cause the edge of the knife to engage or come in such close proximity to the face of roller B′ as to sever the pulp on the roller and cleave it off, the sheet of pulp thus disengaged falling onto table O. Arm J serves as a weight to assist dog I to maintain its engagement with disk H as the pulp is being severed and cleaved from the roller.

By adjusting thumb-nut N up or down on rod K the thickness of pulp that is allowed to accumulate on the feed-roller may be regulated as desired.

With the construction hereinbefore described, the parts having been adjusted to give the desired thickness to the sheet of pulp, the machine afterward operates automatically and requires no further attention, and the sheets of pulp discharged from the machine are of a uniform thickness.

Slight modifications in the construction might be made, of course, without departing from the spirit and purpose of my invention. For instance a cord might be used instead of the link L shown and the depending arm M′ of lever M might rest on cross-bar D, or directly on the trunnion of the feed-roller, instead of resting on the journal-box of the latter; also arm J might, if desired, be dispensed with without materially affecting the working of the machine.

What I claim is—

In a pulp-machine, the combination, with the housings of the machine, a movable feed-roller journaled in movable boxes, and a knife mounted on a shaft and adapted to be forced by the movement of the feed-roller into contact with the pulp on said feed-roller, of a lever fulcrumed to one of the housings above the journal of the feed-roller, said lever being adapted to be actuated by the movement of the feed-roller, and mechanism connecting said lever with the aforesaid knife, whereby the latter is automatically actuated to sever and cleave the pulp from the feed-roller when the latter has been elevated a predetermined distance, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 1st day of September, 1890.

OSCAR J. THOMAS.

Witnesses:
C. H. DORER,
ALBERT E. LYNCH.