(No Model.) 3 Sheets—Sheet 1.

E. ALLEN.

AUTOMATIC FEEDER FOR BRAID ROLLS.

No. 303,605. Patented Aug. 19, 1884.

Fig. 1.

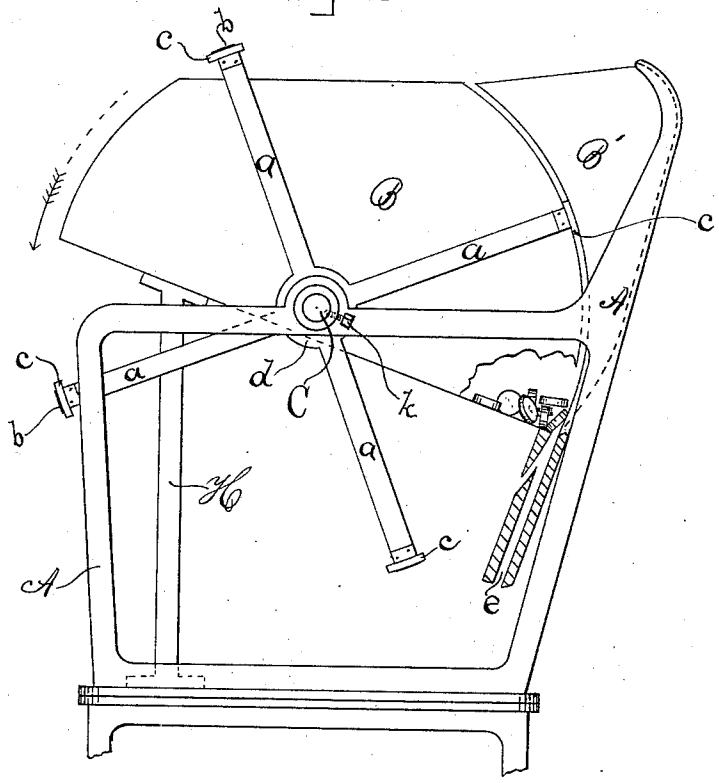
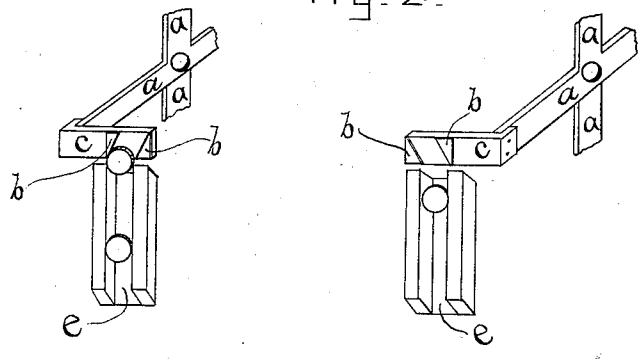


Fig. 2.



WITNESSES

W. W. Beckwith.

Frank H. Allen

INVENTOR

Edwin Allen

(No Model.) 3 Sheets—Sheet 2.

E. ALLEN.

AUTOMATIC FEEDER FOR BRAID ROLLS.

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Fig. 4.

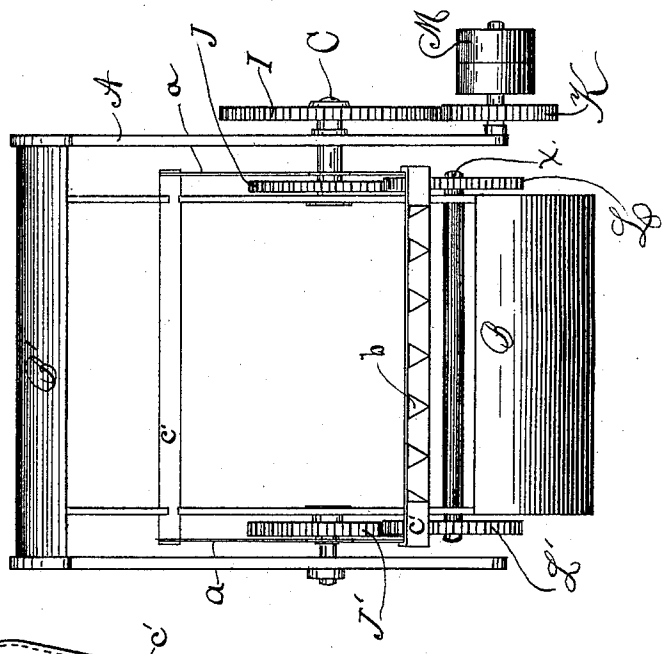
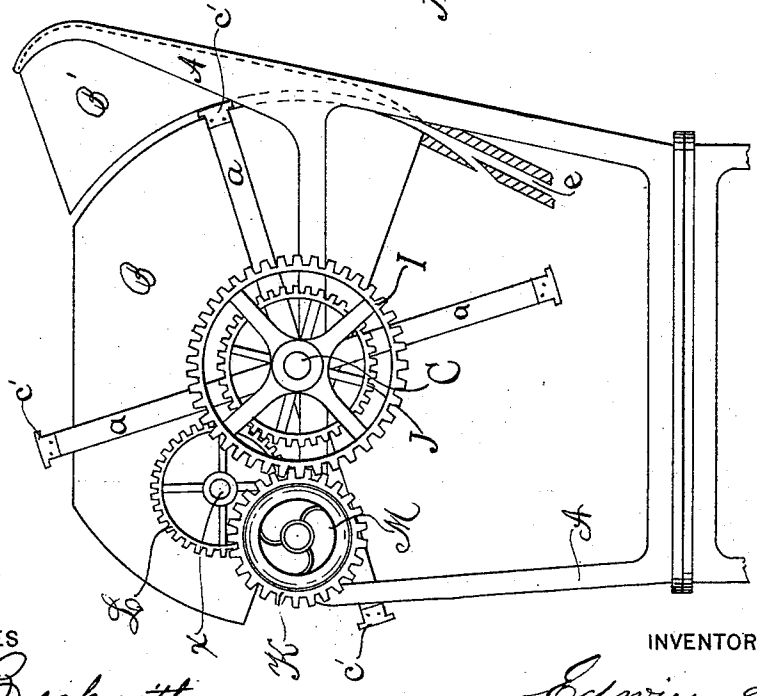


Fig. 3.



WITNESSES

M. M. Beckwith.

Frank H. Allen

INVENTOR

Edwin Allen

(No Model.) 3 Sheets—Sheet 3.

E. ALLEN.

AUTOMATIC FEEDER FOR BRAID ROLLS.

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Fig. 5.

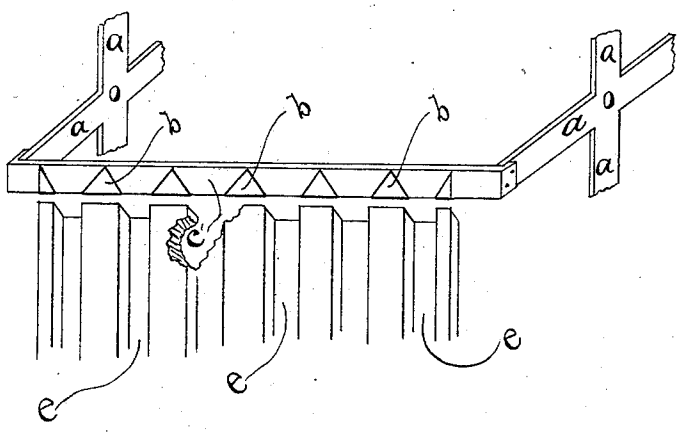
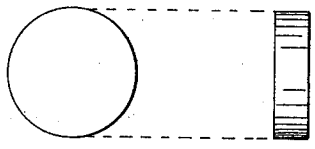


Fig. 6.



WITNESSES

W. C. Beckwith.

Frank H. Allen

INVENTOR

Edwin Allen

UNITED STATES PATENT OFFICE.

EDWIN ALLEN, OF NORWICH, CONNECTICUT, ASSIGNOR TO THE ALLEN SPOOL AND PRINTING COMPANY, OF SAME PLACE.

AUTOMATIC FEEDER FOR BRAID-ROLLS.

SPECIFICATION forming part of Letters Patent No. 303,605, dated August 19, 1884.

Application filed August 8, 1883. (No model.)

To all whom it may concern:

Be it known that I, EDWIN ALLEN, of the city of Norwich, county of New London, and State of Connecticut, have invented certain new and useful Improvements in Automatic Feeders for Braid-Rolls and Similar Articles, which improvements are fully set forth and described in the following specification, reference being had to the accompanying drawings.

My invention relates particularly to that class of devices by means of which braid-rolls, tobacco-tags, lunch-checks, game-counters, and, in fact, all disks in which the diameter is greater than the length, may be automatically transferred from a receiver (into which they are poured in bulk) to a suitable guide or trough, and thence to a printing, shaping, or boring machine, my object being to produce a feeder which, while simple in construction, shall work continuously without clogging.

In the accompanying drawings, Figure 1 is an end view of the simplest form of my device as constructed to feed the blank disks through two troughs, a front detached view of the troughs and agitator being shown in Fig. 2. Fig. 3 is an end view of my feeder arranged to feed said disks into and through a series of troughs, as shown also in Fig. 5, which presents a front view of parts of Fig. 3. Fig. 4 is a top view of the feeder shown in Fig. 3, showing the general arrangement of the shaft and gears, by means of which power is communicated to both ends of the agitator to rotate said agitator on the rigid shaft C, as more fully explained hereinafter. Fig. 6 shows the general shape of the blank disks which my device is constructed to feed.

In the following description (for convenience) I will assume that the feeder is to be used with a machine for automatically printing the ends of said blank disks.

My device, briefly described, consists of a receiver into which the blank disks are poured preparatory to printing, said receiver being supported by suitable bearings in a frame, which is attached to the frame of the printer. On the same bearings which support the receiver are arranged revolving hubs, with one or more radiating spokes, said hubs and spokes carrying with them, as they revolve, agitators, which, by the peculiar construction of my receiver, pass through one side of said receiver and gradually but surely move the blanks toward and finally into the troughs which lead to the printing mechanism.

In the feeders heretofore made with fixed receivers the agitators have been arranged to rotate inside of the receiver, thus keeping the blanks constantly stirred up and depending on chance to bring said blanks to the entrance of the troughs. The agitators in my device are arranged to pass through but one side of the receiver, thus disturbing only those disks which are immediately over and nearly in line with the entrance to the troughs. After passing through the receiver the agitators in my device pass around outside of said receiver, as shown in Figs. 1 and 3.

A represents a cast-metal frame, which is secured to the frame of the printing-machine at a point over or near where the blank disks are to be printed. Hung in suitable bearings in said frame A is a hopper or receiver, B, which does not revolve, but is held rigidly in place by a set-screw, *k*, or any other practical method.

Inasmuch as the agitator-arms in the feeder shown in Fig. 1 do not extend across the machine, a bracket, H, may be used, if thought best, to render the receiver more rigid. The box of the receiver may be square, if so desired; but I prefer to form the back side circular, conforming in size and shape to the circle traversed by the agitator-arms as they revolve, thus increasing the capacity of the receiver. The upper side of B is left open. The bottom is so constructed that it inclines toward the troughs *e*, thus tending to lead the contents of the receiver toward the entrance to said troughs. Near the front side of B, I provide a circular channel, through which the agitator-arms *c c* may travel as they rotate, said channel cutting the receiver into two parts, the part B′ being held securely in place by an upward extension of the feeder-frame A.

In Fig. 1 I have cut away that portion of the receiver immediately over the trough *e*, thereby exposing the blank disks as they lie in said receiver.

The inward extensions or arms *c*, which form the agitators in my device, rotate in the direction indicated by the arrow, the outer surface of *c* being provided with projecting lugs *b*, having angular sides, which tend to slide the

disks sidewise and bring them into line with the entrance to the trough. The lugs *b* on the several agitators are of the same general shape, but are located a little out of line with each other, so that each succeeding lug as it follows around slides the disks a little nearer the troughs. These lugs *b* form an important feature of my new feeding mechanism. When in use, the several agitators, as they rotate, are constantly stirring and changing the position of the disks. The inclined bottom of the receiver assists in working said disks toward the trough, and when the disks are nearly in position the lugs *b* slide them sidewise, and they drop into the trough, from the lower end of which they are taken by the printer as needed.

The feeder shown in Figs. 3, 4, and 5 is identical in general construction and operation with that already described; but owing to the fact that the agitators extend across the receiver the bracket H must be dispensed with. It then becomes necessary to provide a means for transmitting power from the hub which carries one end of the agitator to the hub at the other end, so that a driving-pulley need be used at only one end. To accomplish this result I provide the train of gears and shaft *x*. (Shown in Figs. 3 and 4.) The gear K, located on the shaft with the driving-pulley M, engages gear I, which is on the same shaft with the agitator and gear J, the two gears I and J and the agitator being all arranged to rotate together.

Through the back part of the receiver B extends a shaft, *x*, having on each end a gear, L and L′, the gear L being so located that it engages gear J. By this train of gearing rotary motion is imparted to the shaft *x*, and through the gear L′ to J′. By thus applying suitable power to each of the hubs of the agitator I am enabled to use very thin material for the agitator-arms *c*′, and the groove which divides B and B′ is narrowed in proportion.

In Figs. 1 and 3 the general shape of the interior of B′ is shown by the dotted line, which, beginning at the entrance to the trough *e*, follows upward nearly parallel with the frame A. The interior of B′ should be of such shape that as the agitator *c* passes upward from the trough the space between the agitator and the side of B′ should increase, so that if two or more disks become wedged between the agitator and B′ they will be freed as they slide upward, instead of being wedged tighter, as would be the case if said space were decreased instead of increased.

Having thus described my invention, I claim—

1. In a machine for automatically feeding braid-rolls or analogous articles, and in combination with a suitable supporting-frame, a two-part hopper or receiver, each of said parts being supported independent of the other, and so separated that a series of revolving agitator-arms may pass upward between the two parts of the hopper to disturb the blanks within the hopper and move them toward the feed-troughs *e*, said revolving agitators being so hung relative to part B that they pass, as they revolve, entirely around part B, as and for the purpose specified.

2. In combination with the frame A, having an upward extension to support B′, the rotating arms *a*, agitators *c*, and the two-part receiver B B′, said receiver being constructed with its bottom side inclined toward the trough *e*, the parts B B′ being separated by a circular groove through which the agitators pass, the center of the circle (of which the said groove is an arc) being in the rigid bearings which support the receiver B, as described, and for the purpose specified.

3. In combination with the frame A, troughs *e*, and two-part receiver B B′, the rotating arms *a*, revolving on the trunnions which support B, and arranged to pass upward through the two-part receiver and downward on the outside of said receiver, carrying with them as they revolve angular lugs *b*, for the purpose of moving the blank disks sidewise, as described.

4. In combination with a suitable supporting-frame, the two-part receiver B B′, a system of agitators revolving on the trunnions which support B, and arranged to pass upward between parts B and B′ and downward on the outside of part B, the shaft *x*, hung in part B, and the train of gears I, J, K, L, L′, and J′, so arranged relative to each other that rotary motion is transmitted from one end of the agitating device to the other end of the same, as hereinbefore described, and for the object specified.

EDWIN ALLEN.

Witnesses:
FRANK H. ALLEN,
W. W. BECKWITH.