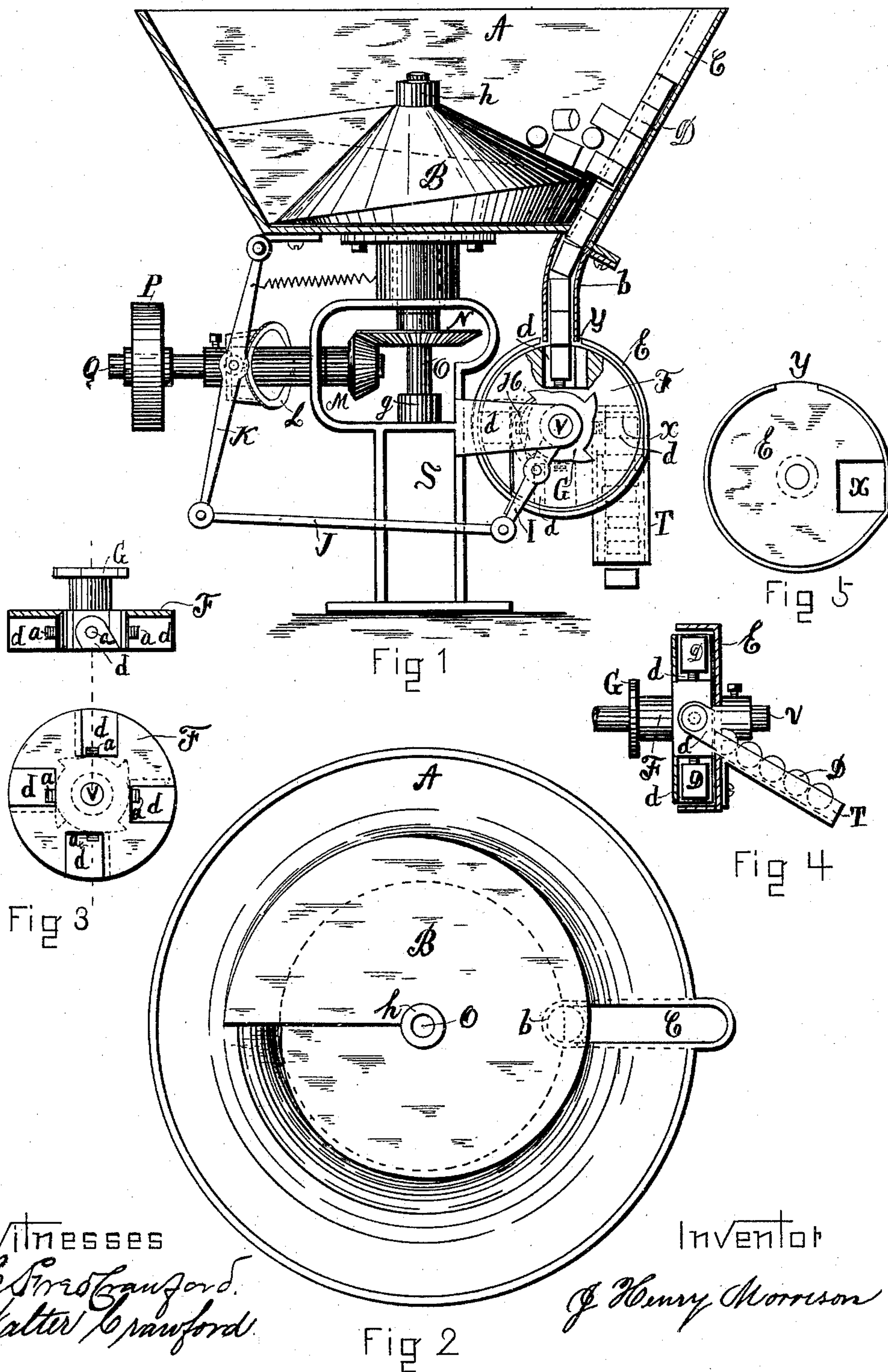


(No Model.)

J. H. MORRISON.
FEEDING DEVICE.

No. 445,964.

Patented Feb. 3, 1891.



UNITED STATES PATENT OFFICE.

JOHN HENRY MORRISON, OF PAWTUCKET, RHODE ISLAND, ASSIGNOR OF
ONE-HALF TO THE ATWOOD, CRAWFORD COMPANY, OF SAME PLACE.

FEEDING DEVICE.

SPECIFICATION forming part of Letters Patent No. 445,964, dated February 3, 1891.

Application filed March 3, 1890. Serial No. 342,502. (No model.)

To all whom it may concern:

Be it known that I, JOHN HENRY MORRISON, of Pawtucket, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Feeding Devices, of which, taken in connection with the accompanying drawings, the following is a specification.

My invention belongs to that class of improvements in which blocks of wood, commonly called "spool-blanks," "finished spools," and analogous articles are taken from a promiscuous mass, arranged and delivered, one by one, in a uniform and proper position to enter any requisite machine prepared to receive them, such as lathes, borers, and spool-printers.

The mechanism by which I attain the desired result is illustrated in the accompanying drawings, in which—

Figure 1 is a side view, partly in section. Fig. 2 is a top view. Fig. 3 is a detail view showing case E, carrier F, bearing-ratchet G, the stud V, and chute T, all properly connected and arranged to show the manner in which the blanks D are discharged into the chute T. Fig. 4 is a detached front and top view of the carrier F, showing openings *d* and adjusting-screws *a*. Fig. 5 is a side view of the case E, showing the rim cut out at Y for the downward passage of the blanks and the rectangular hole X through its side, through which the blanks are delivered.

Similar letters refer to similar parts throughout the several views.

Secured upon the top of standard S is a funnel-shaped receiver A, having a channel C opening from the inside of said receiver and extending outward through its periphery a distance equal to or slightly more than the diameter of the article to be acted on. The length of this channel may be the whole depth of the side of the receiver, and its width the same as its depth, thus forming a passage-way for the article to be fed entirely outside of the inner circumference of the receiver A. Inside of the receiver and entirely covering the bottom and a portion of the sides is the cam-shaped piece B, (which I call the "agitator,") secured to and wholly supported by

the vertical shaft O, resting on the step *g*. Said shaft and agitator can be freely rotated by means of the bevel-gears M and N, the shaft Q, and pulley P, connected with suitable power. By substituting an arm for the pulley P and properly connecting it a vibratory movement may be imparted to the agitator, which movement I find in practice nearly as effective as the rotary. The upper and outer edge of said agitator is spiral-shaped, gradually rising as it winds around its circumference. After reaching its highest point it abruptly drops to its lowest and starting point. From the periphery of the spiral it converges upward until it meets the boss or hub *h*. I do not, however, restrict myself to the exact shape of the agitator or the receiver that contains it. The sides of the agitator, instead of being flaring, might be straight, the sides of the receiver conforming to it and good results be attained; also, a piece forming the channel C might be formed separate and fastened to the receiver. I have shown it forming one piece with the receiver for convenience and simplicity. Connected to the lower end of channel C is the conducting-pipe *b*, into which the blanks pass endwise as they emerge from the channel. Directly under this pipe *b* and located upon suitable supports is the intermittent rotary carrier F, partially covered by the case E, which is rigidly secured to the fixed stud V, while the carrier F is free to rotate upon same by means of the toothed wheel G, pawl H, lever I, connection J, cam L, and spring R. The carrier F is provided with four recesses *d* (more or less might be used) opening out on its periphery and one of its sides, and are so formed that when approximately in a horizontal position on the proper side of center the openings on the sides of said carrier will incline downward. The bottoms of these recesses are provided with adjusting-screws *a*, to accommodate the varying lengths of articles to be fed. Attached to one end of said carrier is the ratchet-wheel G, by means of which it is intermittently rotated. Closing the open side and encircling the periphery of carrier F is the case E, the rim of said case being cut out at the top sufficiently for the

passage of the blanks into the carrier F, and a rectangular hole in its side leading to chute T for the exit of the blanks D.

The action of my machine is as follows:

- 5 The articles to be fed—for instance, the spool-blanks D—are poured into the receiver in bulk. A rotary or vibratory movement is imparted to the agitator by suitable mechanism, which causes a promiscuous stirring of the blanks, enough of which pass into the channel C to keep it constantly full. Whatever part of the channel is covered by the periphery of the agitator as it gradually rises and falls during its undulatory movements, the blanks therein contained are left free to slip down endwise into the pipe *b*. The lowermost blank then drops into the vertical recess in the top of carrier F, when said carrier is then moved sufficiently to bring said block to a horizontal position in front of exit X, when it rolls by its own gravity into the chute T. As the recesses are equidistant in carrier F, when one blank is being discharged another is being received, and so on. If the chute T should be full or a blank should by any means not roll out of the recess at the proper time, there would be no breaking of the parts, as the blanks would simply pass around with the carrier and be prevented from falling out on the under side by the case E, as shown at the bottom of Fig. 3.

Having thus described my invention, what I claim as new, and wish to secure by Letters Patent, is—

- 35 1. The combination, with a receiver for the reception of spool-blanks or analogous articles, having a channel on its side, of a moving agitator having its top spiral or cam shaped for the purpose of stirring the blanks

and constantly covering and uncovering a portion of said channel during its movements, all suitably arranged and supported, substantially as described, and for the purpose set forth.

2. In a feeding device and in combination, a receiver for the reception of spool-blanks or analogous articles, having a channel on its side for the deliverance of said articles, an agitator formed with a spiral or cam shaped top, located within said receiver and covering the bottom thereof, a conducting-pipe for the further deliverance of said articles, a stand for the proper support of the hereinbefore-mentioned mechanism, and means for operating, substantially as described, for the purpose set forth.

3. In a feeding device and in combination, a receiver for the reception of spool-blanks or analogous articles, a channel C, agitator B, connecting-pipe *b*, intermittent rotary carrier F, provided with recesses *d*, fixed case E, chute T, and suitable supporting and operating mechanism, substantially as described.

4. The combination, in a feeding device, of receiver A, bearing-channel C, agitator B, stand S, conducting-pipe *b*, intermittent rotating carrier F, provided with recesses for the reception of the blanks, adjusting-screws *a*, ratchet-wheel G, fixed case B, bearing-openings X and Y, and chute T, all supported, arranged, and provided with operating mechanism, substantially as described, and for the purpose set forth.

J. HENRY MORRISON.

Witnesses:

C. FRED CRAWFORD,
WALTER CRAWFORD.