# M. W. BRUSH & J. J. HARTNETT.

## Spool Printing-Machine.

No. 205,173. Patented June 25, 1878.

Fig. 1.

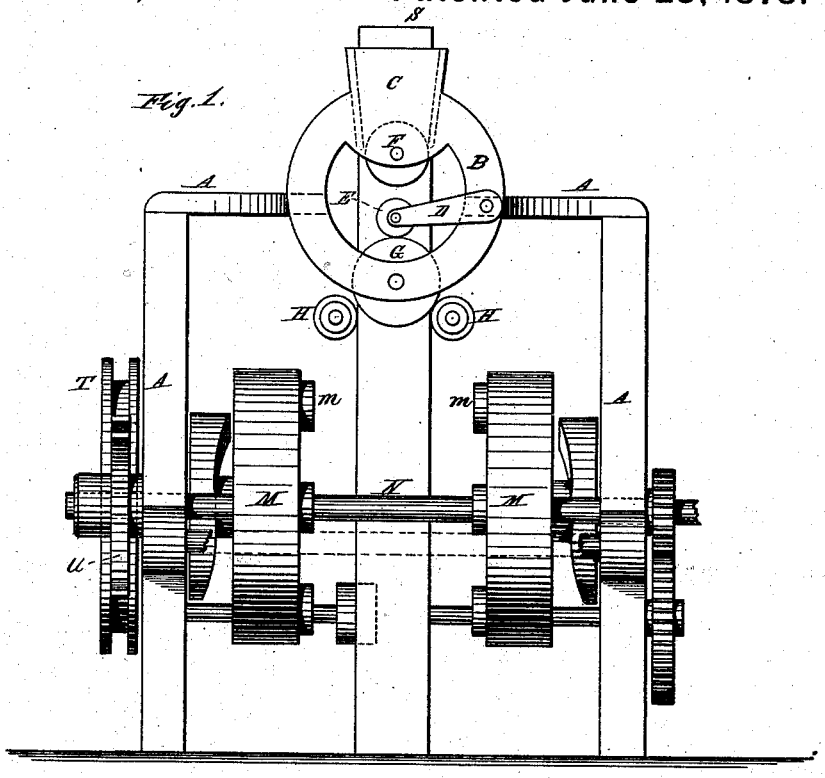
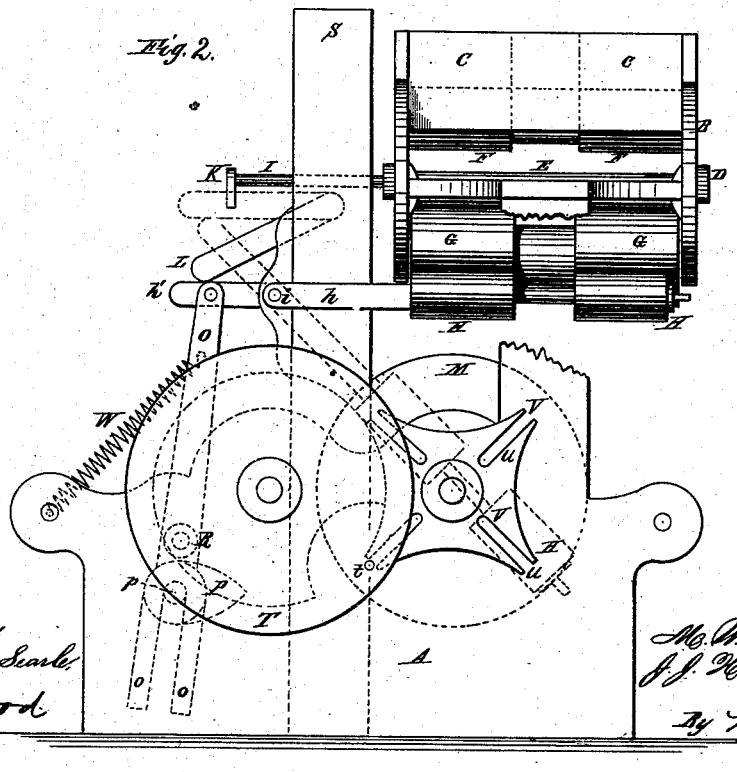



Fig. 2.

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# UNITED STATES PATENT OFFICE.

M. WAGNER BRUSH, OF CAMBRIDGE, AND JAMES J. HARTNETT, OF BOSTON, ASSIGNORS TO ARTHUR C. GOULD, OF BROOKLINE, MASSACHUSETTS.

## IMPROVEMENT IN SPOOL-PRINTING MACHINES.

Specification forming part of Letters Patent No. **205,173**, dated June 25, 1878; application filed April 11, 1878.

*To all whom it may concern:*

Be it known that we, M. WAGNER BRUSH, of Cambridge, in the county of Middlesex, and JAMES J. HARTNETT, of Boston, in the county of Suffolk, and both in the State of Massachusetts, have invented an Improvement in Machines for Printing the Heads of Spools, of which the following is a specification:

Our invention relates to an improvement in machines for printing the ends of spools, and is especially designed to be applied to a machine for which a patent was granted to C. M. Chase and A. C. Gould on November 20, 1877. In that machine no provision was made for specially inking the dies that make the impressions.

The object of our invention is to provide a means for automatically inking the dies that make the impressions on the heads of the spools; and the invention consists in the employment of an ink-reservoir in connection with a supply-roll, a distributing-cylinder, and die-rollers, all so constructed and arranged as to automatically supply the ink to the dies while the machine is in operation.

The invention further consists in certain combinations of parts for imparting an intermittent rotary motion to the die-carriers, so as to bring each die to the proper position for making the impression upon the spool-heads and receiving the ink at the right moment.

Referring to the drawings, Figure 1 represents an end elevation of a machine embodying our invention, and Fig. 2 is a side elevation of the same with a portion of the frame broken away.

A A represent an upright frame, in the upper portion of which is a circular frame, B, which supports two ink-reservoirs, C C, in the lower part of each of which is journaled a supply-roller, F F. At one side of the frame B is pivoted an arm, D, a similar arm being at the opposite end of said frame. On the inner or free ends of these arms is hung a roller, E, which rises and falls between the rollers F and G. The axis I of the roller E extends outward, as shown in Fig. 2, and on its outer end is a short arm or dog, K, which is raised by means of an arm, L, pivoted to the spool-chute S. G G are the rolls that supply ink to the distributing-rolls H H. These rolls, of which there are two sets, are hung on axes attached to arms *h h*, which are pivoted to the rear of the chute S at *i*, as shown in Fig. 2.

An arm, *h'*, extending to the rear of arms *h h*, and moving on the same center *i* with said arms, has attached to its outer end an arm or bar, O, which extends downward, and terminates in the forked ends *o o*, the crotch of the fork resting upon the shaft *p*. Upon the shaft *p* is secured a cam, P, which bears against a roller, R, on the forked arm O, so that when the shaft *p* rotates the arm O is raised against the tension of a spring, W, attached to the arm O and to the frame of the machine, as shown. As the rear extension of the arm *h* rises it elevates the arm L, which in turn raises the arm or dog K, and through it the roller E.

As shown in Fig. 2, the distributing-rolls H H, of which there are four, or two sets, are in contact with the supply-rolls G G. As the forked arm O elevates the rear ends of bars *h h'* the rolls H H are brought down and borne against the dies *m m* on the die-carriers M M, which make the impressions upon the spool-heads.

The rolls H H are so arranged that the two on each side will come in contact with corresponding dies at the proper moment by means of an intermittent motion, effected as follows: On the same shaft that supports the die-carriers outside of the frame is a disk, U, having four curved or concave sides and four intervening slots, V. The concave edges of disk U fit within a groove or recess in the periphery of a wheel, T, mounted on the main shaft of the machine. Within the recess or groove in wheel T is secured a pin or stop, *t*, which, as the wheel T rotates, enters one of the slots in disk U, and moves the same the distance of one-quarter of a circle, thus imparting the same degree of motion to the die-carriers M M. The die-carriers remain in position a sufficient length of time to allow the distributing-rollers H H to pass and return over the dies *m m*, the said rollers receiving their motion from the cam P, as before described. While the rollers H H are in their elevated

position the disk U is turned one-half around, so as to allow the said rollers to come in contact each with the proper die.

The reservoirs C C may contain inks of different colors for printing the spools in different colors, if desirable. In this case the two rollers H H nearest the pivot *i* will distribute one color and the two at the extremity of bar *h* will distribute the other, the die-carrier being so timed that two dies on each face are always inked by one roller and the remaining two by the remaining roller on the same arm *h*.

The concave edges of the disk U have a slight bearing against the inner periphery of the grooved portion of the wheel T, which insures the entrance of the bar or pin *t* into the slots V at the proper moment.

What we claim as our invention is—

1. In a machine for printing the heads of spools, the combination, with the intermittently-rotating die-carriers, of the reservoirs C C, the movable roller E, the supply-rollers G G, the distributing-rollers H H, hinged substantially as shown, and mechanism, substantially as described, whereby the distributing-rollers are caused to vibrate in vertical planes and receive and distribute the ink, in the manner and for the purposes set forth.

2. In a machine for printing spools, the combination, with the intermittently-rotating die-carriers, of the rolls H H, actuated by the cam P on shaft *p* through the medium of pivoted arms *h h* and forked arm O, the movements of the parts being timed, substantially as described, so that each roll H will always ink the same set of dies, for the purposes set forth.

3. In a machine for printing spools, the combination, with the die-carriers, of the disk U, having concave edges and intermediate slots V, the grooved wheel T, provided with pin *t*, and the vibrating arm *h*, carrying the inking-rollers, the several parts operating substantially as shown, and their respective movements being timed, as explained, so that the ink may be applied to the dies at the intervals and in the manner specified.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

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JAMES J. HARTNETT.

Witnesses:
J. H. ADAMS,
A. C. GOULD.