

T. E. KING.
SPOOL-PRINTING MACHINE.

No. 179,569.

Patented July 4, 1876.

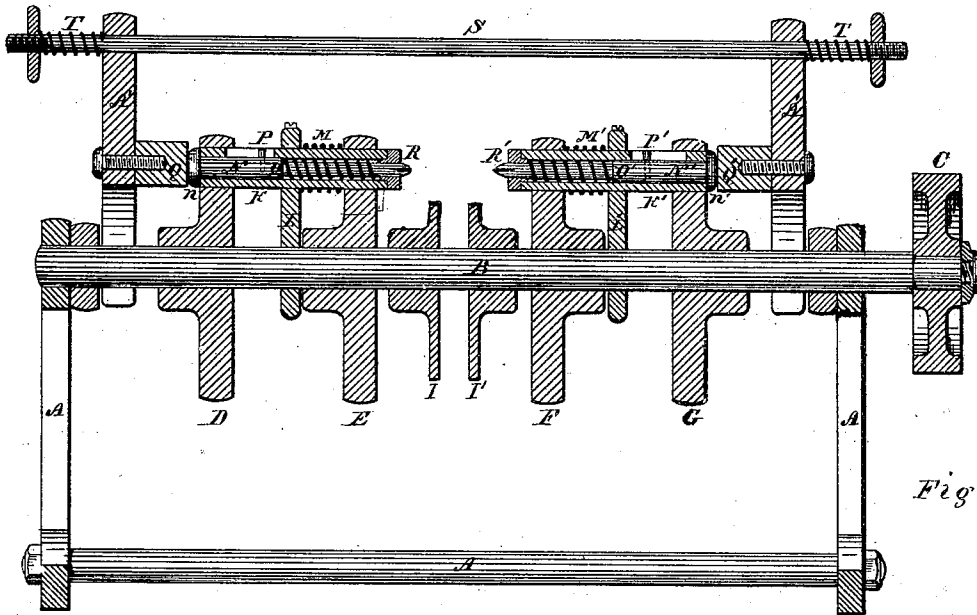


Fig. 2

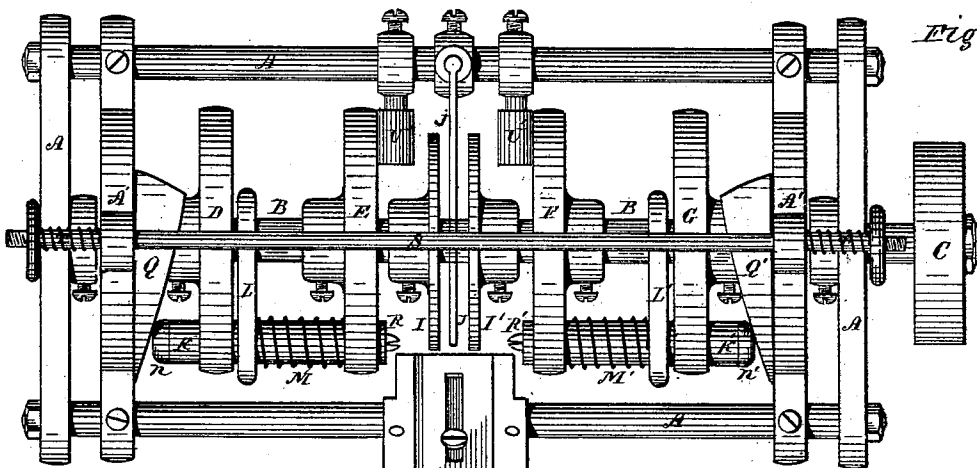


Fig. 1

WITNESSES.

INVENTOR.

John L. Peters
Chas. B. Claffey

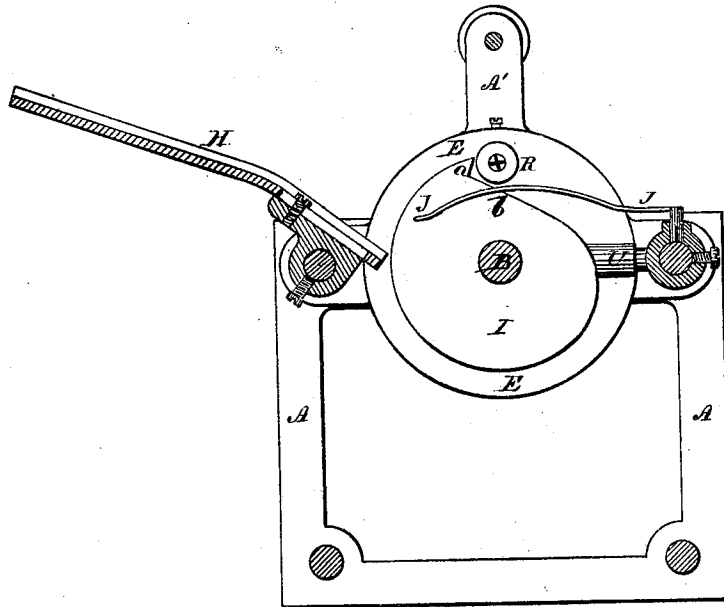
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Fig. 3.



WITNESSES.

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UNITED STATES PATENT OFFICE.

THEODORE E. KING, OF ROCKVILLE, CONNECTICUT.

IMPROVEMENT IN SPOOL-PRINTING MACHINES.

Specification forming part of Letters Patent No. **179,569**, dated July 4, 1876; application filed May 6, 1876.

To all whom it may concern:

Be it known that I, THEODORE E. KING, of Rockville, in the county of Tolland and State of Connecticut, have invented certain new and useful Improvements in Machines for Stamping the ends of Spools; and I do hereby declare that the following is a full, clear, and exact description thereof, whereby a person skilled in the art can make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Like letters in the figures indicate the same parts.

My invention relates to a machine for impressing or printing any characters upon the ends of a spool by an automatic motion of the several parts after the spools have been placed in the machine. It has for its object the rapid and effective stamping of the characters or design into the wood of the spool, and the printing or coloring of the bottoms of the recesses formed, so as to show plainly and clearly the form of the characters stamped.

My invention consists in the mechanical devices hereinafter described.

In the accompanying drawings, on two sheets, Figure 1 is a top view of my improved machine. Fig. 2 is a longitudinal section through the middle of the same. Fig. 3 shows a cross-section through the middle, looking outward.

A is the frame of the machine. B is the main shaft, giving motion to all the parts, which is driven by the pulley C. D E F G are disks secured to the shaft B, and turning with it. D and G might be arms only; but I prefer to make them of the form shown in the drawings. H is a guide or channel, to conduct the spools into the machine. I I' is a double rotating spool-carrier, secured to the shaft B, for the purpose of picking up one spool at each revolution, and holding those remaining in the channel H from passing out, except at the proper time. J is a spring, which rests upon the top of the spools as they pass through the machine, and holds them down upon the carrier I I'. K is a hollow spindle, sliding in sockets in the disks D and E, and firmly secured, by a set-screw, to the arm L, which slides back and forth upon the

shaft B. This is to prevent its rotating in its socket. The spindle K and the arm L are pressed back toward D by the spring M. N is a spindle, sliding within the hollow spindle K. It has a spring, O, which presses it back to the rear, and a sliding pin, P, to prevent its being withdrawn from the spindle K, but which allows of some longitudinal play. At its rear end is the head *n*, which runs upon the cam Q as the machine turns. When not in contact with the cam Q the head *n* is pressed away from the rear end of K, and the forward point of N enters within the spindle K. This point is for the purpose of entering the hollow axis of the spool, and is split, as shown in the drawing. The hollow spindle K is to carry the stamping and printing die R, as shown in the drawing. The cam Q is for the purpose of pressing forward, first, the interior spindle N, and then, when the head *n* reaches the rear of the hollow spindle K, both together, as the machine revolves, until the head *n* passes over the cam. The cam Q is set with adjustable screws upon the frame A', which is made firm enough to give a sufficient pressure to the dies, but yields slightly under an excessive pressure. For this purpose the frame is tied together by the rod S, which has at its ends the springs T. Upon the opposite end of the machine are the parts K' L' M' N' O' P' Q' R' *n'*, exactly similar to those of the same letters above described, and intended to act conjointly with them upon the spool, for the purpose of stamping the two ends at the same time. The faces of the dies R R' fall back flush with the faces of the disks E F after the spool is stamped, and the spindles K K' are released, and pass under inking-rollers U U', by which the coloring matter is spread upon their faces for stamping the next spool. The rollers U U' roll against the faces of the disks E F, so as to evenly distribute any coloring matter placed upon them.

For the purpose of adapting the machine for stamping different kinds and sizes of spools, the several parts above described are attached to the main shaft B and the frame A by means of set-screws, which admit of a movement of the disks, dies, and cams, to adjust them for a longer or shorter spool. The spool-carrier I I' also admits of an ad-

justment to pick up and convey between the dies spools of different diameters, as follows: The faces *a* and *b* of the carrier are so proportioned and constructed, that when the face *a* is turned back from the center of the spindles *N N'*, the points upon the two faces *a* and *b*, which would be touched by the circumference of the barrel of a spool lying in the angle, are equally distant from the line of the axis of the spindles, so that the carrier, turning with the dies, has only to be set a little forward or back upon the shaft to accommodate itself to different sizes of spools.

The operation of my invention is as follows: The spools are placed, by hand or any suitable mechanism, upon the feeding-trough *H*, and are taken off, one by one, by the carrier *I I'*, the outside curve of which holds back the others until the next revolution, when the next one falls in upon the face *b*, and is taken off as before. As soon as the spool is taken up by the carrier the spindles *N N'* advance, as before described, and enter the holes in the ends of the spool. While this is being done the spool is held in the carrier by the spring *J*, under which it passes. As the disks rotate the spindles *K K'*, with the dies *R R'*, advance and stamp the ends of the spool while passing over the highest parts of the cams *Q Q'*. The spindles are then released by these cams, and the spool falls out of the machine, while the dies pass under the rollers *U U'*, to be inked for the next operation.

What I claim as my invention is—

1. The rotating carrier *I I'*, constructed, as described, in combination with the feeding-trough *H* and a fixed spring, *J*, attached to the frame, substantially as herein set forth.

2. The combination of the spindles *K K'*, the spindles *N N'*, and carriers *I I'*, arranged to move conjointly in the manner described, and to stamp the ends of the spool while moving through the machine, substantially as herein set forth.

3. The combination of the spindles *K K'*, with their dies *R R'*, the disks *E F*, and the inking-rollers *U U'*, substantially as herein described.

4. The yielding frame *A' S T*, in combination with the stamping mechanism, substantially as herein described.

5. The combination of the spindles *K* and *N* and the springs *M* and *O*, arranged upon a rotating shaft with the fixed cam *Q*, substantially as herein described.

6. The combination of the stamping-spindles *K K'* with the carriers *I I'*, arranged to move conjointly around the same central shaft in the manner described, to stamp the ends of the spool while in motion through the machine, substantially in the manner herein set forth.

THEODORE E. KING.

Witnesses:

JOHN T. PETERS,
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