2 Sheets—Sheet 1.

H. M. UNDERWOOD & W. P. HOLLIDAY.

Match-Splint Machine.

No. 196,131. Patented Oct. 16, 1877.

Fig. 1.

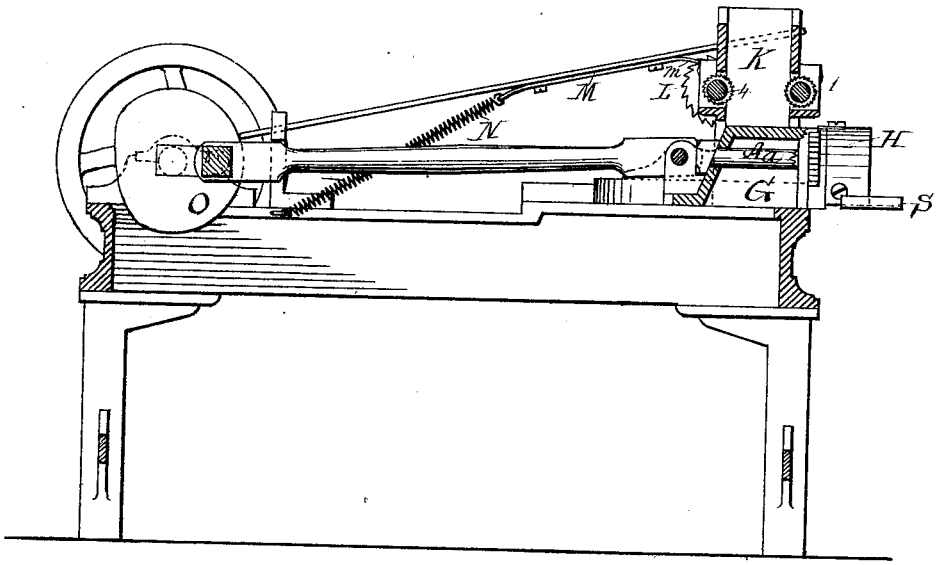
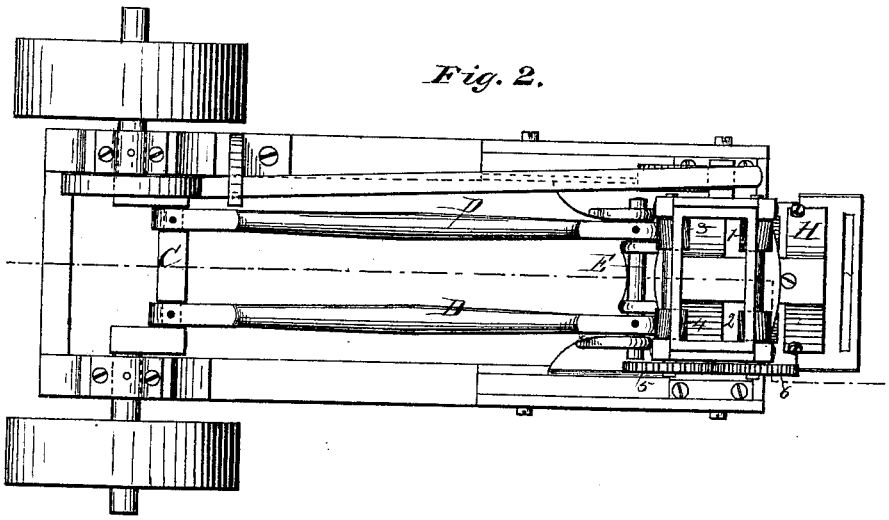


Fig. 2.



Witnesses:
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A. Scott.

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their Attorney.

2 Sheets—Sheet 2.

H. M. UNDERWOOD & W. P. HOLLIDAY.

Match-Splint Machines.

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Fig. 3.

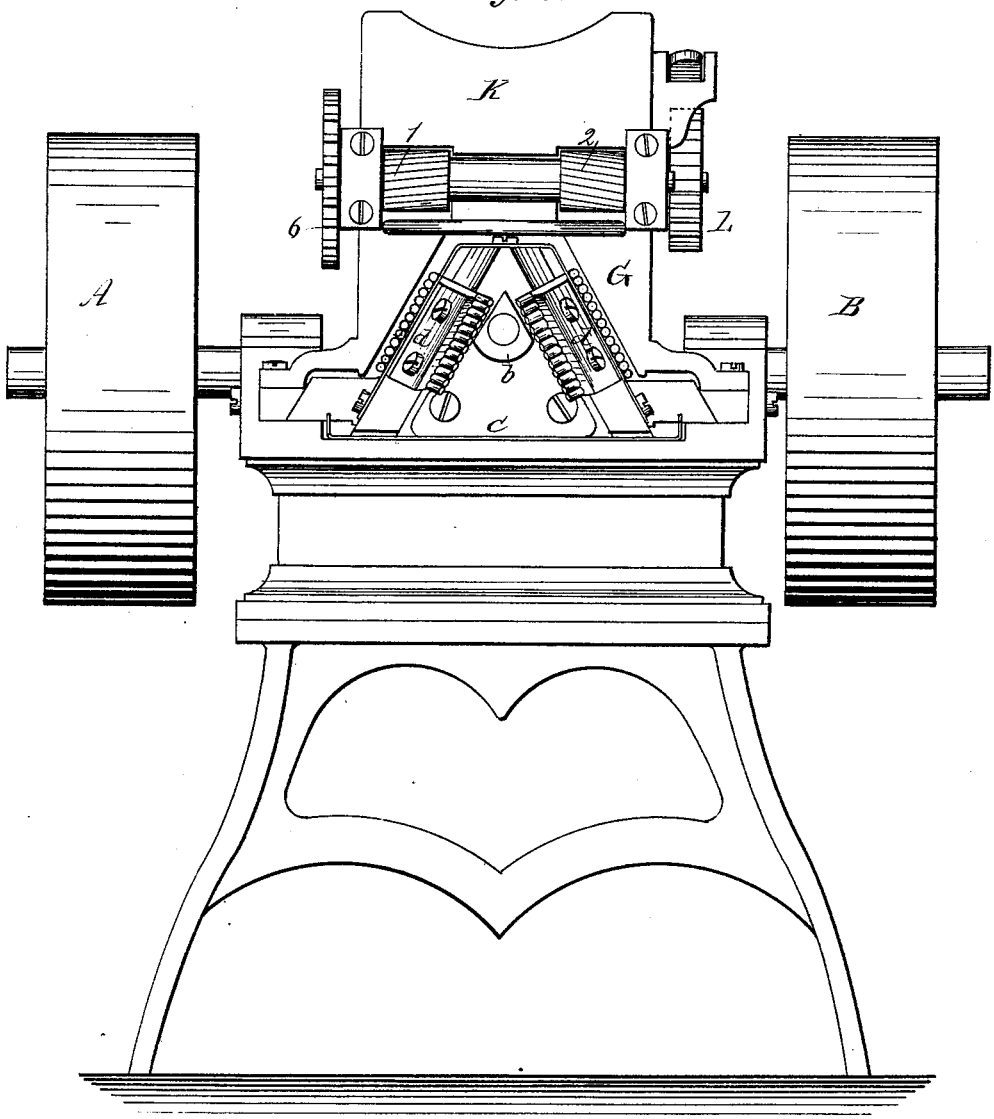
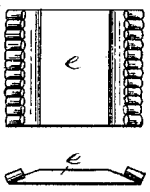


Fig. 4.



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UNITED STATES PATENT OFFICE.

HENRY M. UNDERWOOD, OF KENOSHA, WIS., AND WILLIAM P. HOLLIDAY, OF DETROIT, MICH.; SAID UNDERWOOD ASSIGNOR TO SAID HOLLIDAY.

IMPROVEMENT IN MATCH-SPLINT MACHINES.

Specification forming part of Letters Patent No. **196,131**, dated October 16, 1877; application filed April 23, 1877.

To all whom it may concern:

Be it known that we, HENRY M. UNDERWOOD, of Kenosha, in the State of Wisconsin, and WILLIAM P. HOLLIDAY, of Detroit, in the State of Michigan, have invented new and useful Improvements in Match-Splint Machines, which are fully set forth in the following specification and its drawings.

Some of the general principles of our machine are presented in the expired patent to Chauncy E. Warner, dated July 2, 1842.

Our invention relates to the sliding cutter-frame, its connection with the main shaft, the cutters, and the feeding mechanism.

In the drawings, Figure 1 is a side elevation, Fig. 2 a plan view, and Fig. 3 a front elevation, of the machine. Fig. 4 presents two views of the double cutter-plate and its tubular cutters.

The machine has a band-wheel, A, and balance-wheel, B. Two connecting-rods, D D, extend from the main shaft C to the cross-head E on the sliding bridge-frame G, which reciprocates in dovetailed guides upon the main frame of the machine. The two connecting-rods reciprocate the frame in a true line, so that it does not bind within the guides. Beneath the bridge-frame G is a bolt, *a*, upon which, by means of the nut *b*, is secured, in front of the frame, the triangular block *c*, as a support for the reversible cutter-plates *d d*. The triangular block presents two inclined faces as supports for the cutter-plates, so that the pressure from the two blocks of wood upon the inclines will be counterbalanced. The cutter-plates terminate at each end in tubular cutters, drilled at an angle and brought to a sharp cutting-edge on the outer end. The length of the cutting-tubes is about twice the thickness of the plate. The elevation *e* of the plate at the rear of the tubes serves to straighten the match-splints as they leave the cutters, preventing the tendency of the splints to curve down from the blocks of wood. In front of the cutters are oblique wings H H, to serve as guides and supports for the splints, and also to prevent the splints from curving down.

When the cutter-plates are set the rear tubular cutters project above and in line with the upper oblique surfaces of the wings. When one set of cutters has become dull the plate is reversed and the other set brought into use.

Over the bridge-frame is a feed-box, K, and under this box, on each side, running parallel with its length, are feed-rollers 1 2 3 4, preferably made larger at the inner end, and having spiral grooves to press the blocks of wood against the ends of the box and downward to the cutters. These rollers are turned by the cog-wheels 5 6, to which motion is imparted by a ratchet-wheel, L, opposite to, but on the same shaft with, the wheel 5.

The ratchet is driven by a sliding bar, M, and its pawl *m*. The bar, by a retracting-spring, N, is held against the cam O upon the shaft, and operates the ratchet by its revolutions. The movement of the ratchet-wheel one tooth will turn the feed-rollers far enough to draw down the wooden blocks the thickness of a match-splint.

There is a receptacle, S, for the splints to fall upon from the cutters. This receptacle has an opening of sufficient size to permit short splints to fall through, but not large enough for the escape of a full-length splint.

We claim—

1. A reversible cutter-plate formed from a single piece of steel, having a series of tubular cutters constructed on each end, upon an angular face of the plate, so as to form an elevation in rear of and on a line with the base of the tubes, substantially as shown, for the purposes specified.

2. The combination of a plate having cutters at an angle to it, and longer than its

thickness, with a triangular bridge-frame, and with oblique wings or supports in rear of and in line with the cutters, so as to prevent the curling of the splints.

3. The triangular bridge-frame for carrying two cutter-plates, and for counterbalancing the pressure from the two blocks of wood in the feed-box, constructed substantially as described.

4. The combination of the triangular frame, the reversible tubular cutters, and the feeding mechanism, constructed substantially as described.

In testimony whereof we hereunto subscribe our names in presence of two attesting witnesses.

HENRY M. UNDERWOOD. [L. S.]
WILLIAM P. HOLLIDAY. [L. S.]

Witnesses to the signature of Henry M. Underwood:

WM. S. FLUSKEY,
EDWARD CURRY.

Witnesses to the signature of William P. Holliday:

JOHN W. MCGRATH,
THOMAS DAVIES.