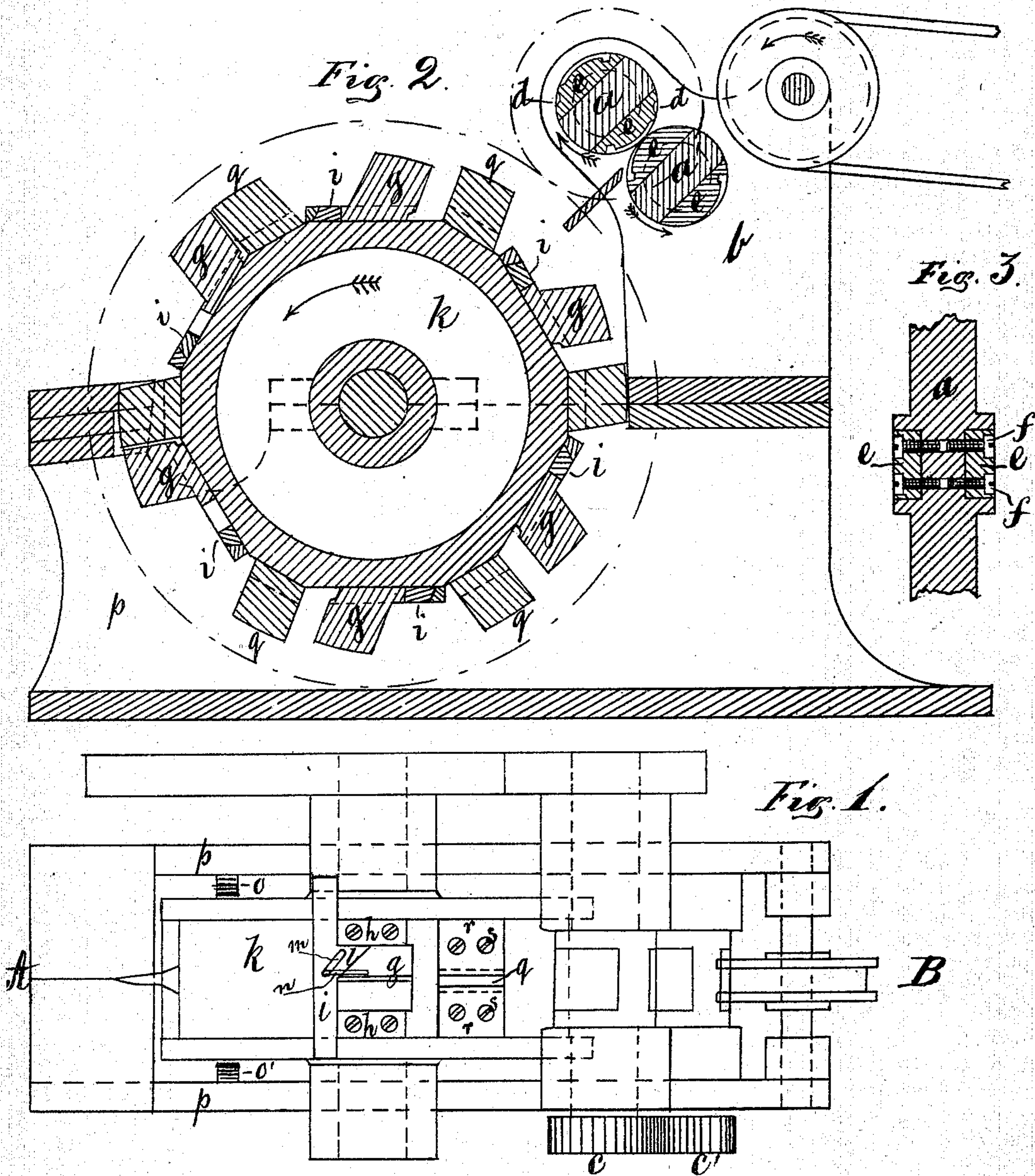


E. W. KELLEY.

Machines for Making Horseshoe Nails.

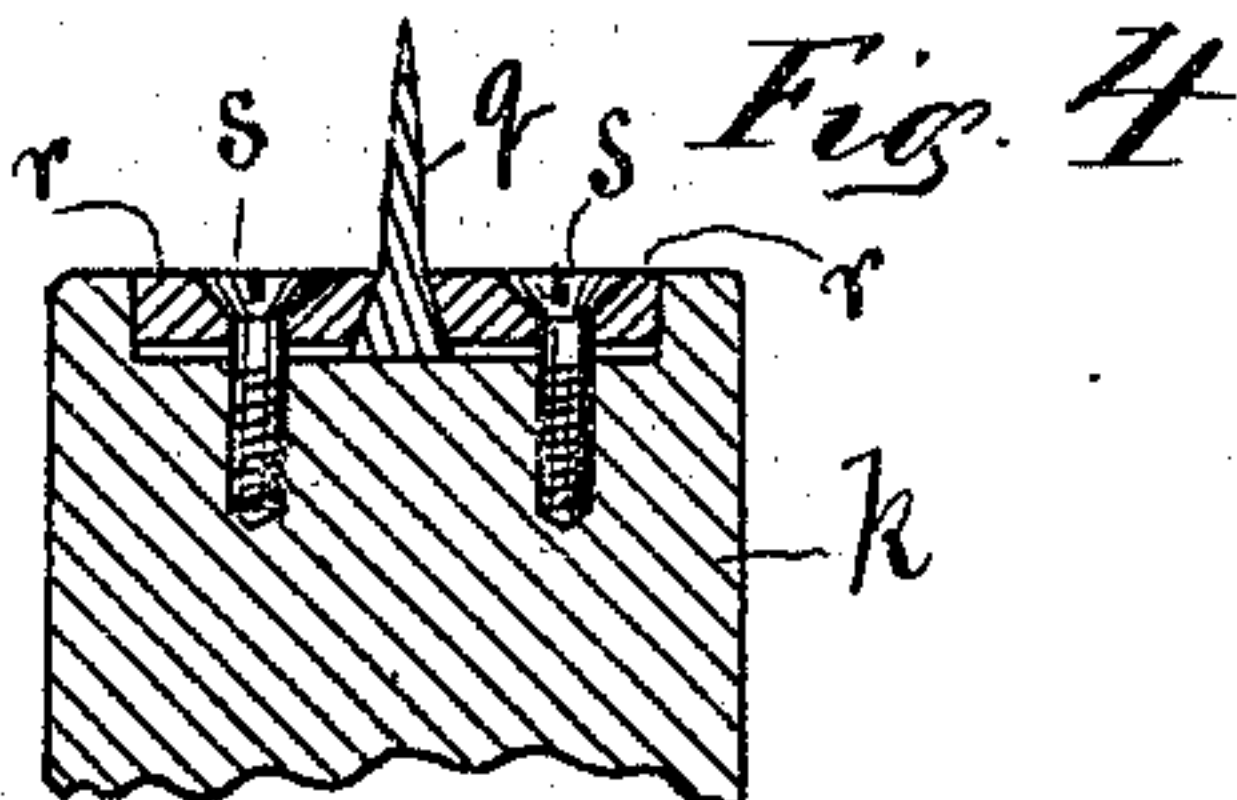
No. 139,250.

Patented May 27, 1873.



Witnesses.

George C. Phelps.
Helen S. Andren.



Inventor.

Edward W. Kelley
by Allen Andren his atty

UNITED STATES PATENT OFFICE.

EDWARD W. KELLEY, OF LOWELL, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR MAKING HORSESHOE-NAILS.

Specification forming part of Letters Patent No. 139,250, dated May 27, 1873; application filed November 11, 1872.

To all whom it may concern:

Be it known that I, EDWARD WATSON KELLEY, of Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements on Horse-Nail Machines, of which the following is a specification:

My invention relates, first, to the combination, with the clipping-wheel and jaws, of mechanism to effect the required movement of one jaw toward or from the other; secondly, to an improvement in the construction and attachment of the stationary male jaw on the clipping-wheel, whereby the said stationary male jaw may be resharpened and set up closer to the movable male jaw in case the said stationary male jaw should get broken or injured. By this arrangement I am able to use and resharpen the stationary male jaw on the clipping-wheel several times after it has been slightly broken or injured.

This my invention is an improvement on the patents granted to me for horse-nail machines, dated, respectively, May 23, 1871; and October 10, 1871.

First. Formerly I employed two pair of rollers for the purpose of rolling and pointing the nails after coming from the punching-machine; but as this way of making the nails is connected with difficulties, owing to the importance of keeping the different pairs of rollers at an exact distance from each other, I have discarded one pair of rollers, and employ now only one single pair of rollers for the rolling and pointing of the nails after leaving the punching-machine.

On the drawing, Figure 1 is a ground-plan. Fig. 2 is a longitudinal section over the line A B, taken on Fig. 1. Fig. 3 is a longitudinal section over one of the rollers; and Fig. 4 is a cross-section over one of the stationary male jaws on the clipping-wheel.

On the drawing, *a a'* are the two rollers, movable in suitable bearings in the frame *b*, and geared positively together by the gears *c c'* in the usual manner. *a* is the upper roller, and *a'* is the lower one, as shown. Both rollers have dies sunk in their surfaces; but for the purpose of allowing the thin chisel-like point of the nail to expand freely, and also for the purpose of feeding the nail from the roll-

ers to the clipping-wheel, I make small depressions or hollows *d d* behind the point of the dies, as fully shown in Fig. 2. The dies on the lower roller *a'* are tapered from the head to about two-thirds of the length of the nail where the dies cease. By this arrangement I am able to roll and flatten or point the nails with one single pair of rollers instead of two pair, as formerly used.

Second. My improved rollers are constructed in the following manner: I face off two or more opposite sides on the rollers, as fully shown in Figs. 2 and 3, and fit thereon engraved segmental blocks *e e*, and secure them to the roller by means of screws *f f* that project through the segments *e e*, and are screwed into the body of the roller, as shown in Fig. 3. By this construction of the rollers I can easily replace part of a roller when broken, or use the same rollers for different sizes of nails, by simply removing one or more of the segments *e e* and securing one or more new ones to the body of the roller. By facing off the body of the rollers in opposite plane surfaces, I obtain a better fit than could be obtained in any other way; and I lessen the cost of the rollers compared with the former method of having a shell surrounding the body of the roller.

Third. The mechanism for operating the movable jaws on the clipping-wheel is arranged as follows: The movable male jaws *g g* are made to slide between the guides *h h*, as shown. Formerly I employed a cam-lever for the operation of the said movable male jaws, but I found that I could not obtain, conveniently, as long a throw as I needed for this purpose. Now I use a bar, *i*, made to move laterally in bearings or guides on the face of the clipping-wheel *k*. The bar *i* is provided with an inclined projection, *l*, that rests against a corresponding incline on the rear of the movable jaw *g*, as shown in Fig. 1. On the bar *i* may be made a slanting groove, *m*, in which the rod *n* projects, the other end of which is securely attached to the jaw *g*. The object of the groove *m* and rod *n* is to draw the jaw *g* backward after the nail is clipped. The cross-bar *i* projects outside the wheel *k*, and is operated by striking against projections, inclines, or rollers *o o'* attached to the frame *p*, as shown in Fig. 1.

Fourth. The stationary male jaws *q q* were formerly secured in a line and on the same plane as the movable jaws *g g*; but the objection thereto is that, when a part of the cutting-edge got broken, the jaw had to be thrown away as useless. This objection I overcome by placing the jaws *g* and *q* on different planes, as shown in Fig. 2; so that, when the cutting-edge of the said jaws *q q* gets broken or injured, I can grind it anew, and move the jaw *q* up a little nearer to the movable jaw *g*, and secure it firmly in place by means of the plates *r r* and screws *s s*, as fully shown in Fig. 4.

Having thus fully described the nature, construction, and operation of my invention, I wish to secure by Letters Patent, and claim—

1. The combination of the clipping-wheel *k*, jaws *g g*, grooved bar *i*, and inclines or rollers *o*, as and for the purpose specified.

2. The arrangement of the jaws *g* and *q*, of each pair, on anticlinal surfaces of the wheel *k*, as and for the purpose set forth.

EDWARD WATSON KELLEY.

Witnesses:

JAMES LOUGHRAN,

CHARLES B. BLAISDELL.