

H. A. WILLIAMS.
MACHINE FOR POINTING WIRE.

No. 172,231.

Patented Jan. 11, 1876.

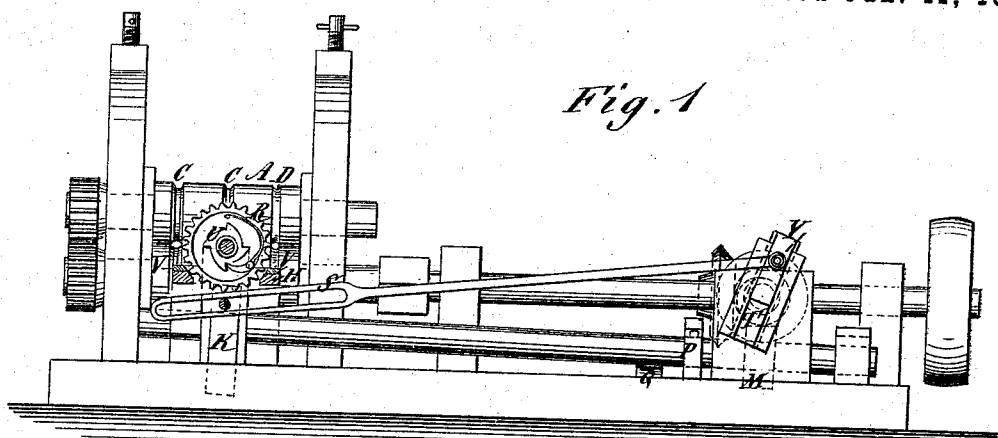


Fig. 1

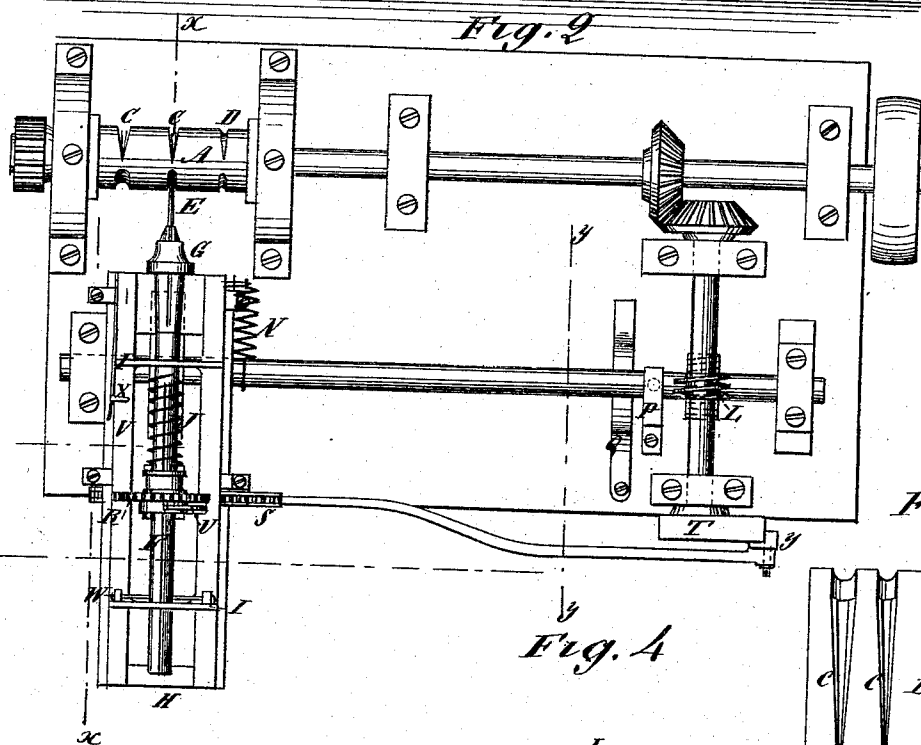


Fig. 2

Fig. 3

Fig. 4

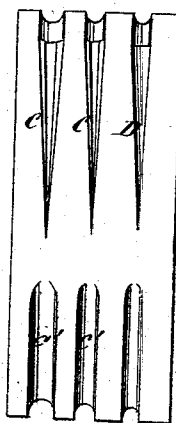


Fig. 5

WITNESSES:

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HENRY A. WILLIAMS, OF WEST MEDWAY, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR POINTING WIRE.

Specification forming part of Letters Patent No. **172,231**, dated January 11, 1876; application filed October 23, 1875.

To all whom it may concern:

Be it known that I, HENRY A. WILLIAMS, of West Medway, in the county of Norfolk and State of Massachusetts, have invented a new and Improved Machine for Making Picker-Teeth, &c., of which the following is a specification:

My invention consists of progressive feeding and turning mechanism, in combination with rolls having tapered grooves, for tapering and pointing wires to make picker-teeth, hackle-pins, printers' bodkins, taper dowel-pins, and the like, the said feed mechanism being so that only a small portion of the wire is at first presented to the rolls, and it is advanced a little more at each operation, so that as the size is reduced the wire feeds into the smaller portion of the grooves, and thus can be reduced to any required size in one groove. This plan saves the necessity of a series of grooves for doing the same work; also, the shifting of the work from one groove to another, and it accomplishes the work easier and more rapidly, and does not injuriously affect the metal.

Figure 1 is a side elevation of my improved machine. Fig. 2 is a plan view. Fig. 3 is a sectional elevation taken on line *xx* of Fig. 2. Fig. 4 is a section on line *yy*, Fig. 2; and Fig. 5 is a plan of the surface of one of the rolls, showing the contrivance of the grooves.

Similar letters of reference indicate corresponding parts.

A and B represent the rolls, having the tapered printing-grooves C and D, in which the steel wires E are to be pointed by sliding forward between the rolls while the large portions C' of the grooves are passing and being gripped by the smaller tapered portions, and forced back. The wires are held in a split stock, F, by a collar, G, which fastens them, and the stock is arranged on a feeding-carriage, H, so that it can slide forward and backward in bearings I, and has a spring, J, for pushing it forward to introduce the wires between the rolls. The carriage is arranged to slide toward the rolls, and it is advanced a little to each operation of the rolls by the cam K, the cam being turned slowly by the worm L and the worm-wheel M. The speed of rotation of the cam, and consequently the

forward movement of the carriage and stock, is determined by the number of teeth on the worm-wheel. Different wheels will be used for articles requiring different numbers of operations of the rolls. The carriage is moved back by a spring, N, when the cam has done its work, and at the same time the cam is stopped, to let the carriage rest for taking out the finished tooth and putting in another, by the stud O, which, by striking the bar P, presses the spring-bearing Q down, so that the wheel disengages from the worm. When the cam is to be set in gear again the wheel is turned far enough by hand or otherwise to let the stud escape from the bar P, when the spring-bearing throws the worm-wheel up into gear again. To turn the wires part way round after each operation of the rolls the stock is fixed in its bearings, so as to revolve freely, and it is geared by a wheel, R, with the toothed rack S, which is worked by a crank, T, on the shaft of worm L. The wheel R is connected to the stock by a ratchet, U, by which the toothed bar turns it only when going one way, and the ratchet may be set to turn it a quarter or any other fraction of a revolution at each operation; or the throw of the toothed bar may be shifted by the adjusting-block Y in the crank T. The stock slides freely through the ratchet-wheel and wheel R. The stock is fitted on the carriage by a frame, V, which is free to swing up on a pivot at W, to enable the head of the stock to be raised up for putting in and taking out the work, and a spring-catch, X, is employed to hold it down. The grooves C are made in hexagonal form for reducing the wires in that shape, which does not split or spread the metal, as the round form does, and it makes the metal stronger in the same manner and on the same principle that the hammering of metal in squares does; and I propose to make these articles in such form whenever the nature of the service they have to perform will admit, on account of the greater strength of this form.

There is also an advantage of great importance growing out of this form in respect of the greater durability, which, in my experience, is as much as fifty times that of the round dies, the difficulty with the round dies being that the upper edges are cracked out on ac-

count of their nearly vertical shape at that point, which makes the metal stick, whereas the hexagonal dies taper to the top, so that the metal does not take hold or stick, but escapes freely.

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

1. The combination, with a pair of die-rolls, A B, of a work-holding stock, F, having a forward and backward movement at each operation of the rolls, and also having a progressive feed motion, substantially as specified.

2. The work-holding stock, arranged on the carriage H by a frame, V, pivoted to the car-

riage, for elevating the stock to receive and deliver the work, substantially as specified.

3. The combination, with the reciprocating work-holding stock and the die-rolls, of the reciprocating toothed bar S, wheel R, and ratchet U, substantially as specified.

4. The combination, with the reciprocating work-holding stock and the die-rolls, of the feeding-carriage H and the cam K, substantially as specified.

HENRY A. WILLIAMS.

Witnesses:

T. B. MOSHER,
ALEX. F. ROBERTS.