J. E. WHEELER.

Horseshoe-Nail Machine.

No. 214,798. Patented April 29, 1879.

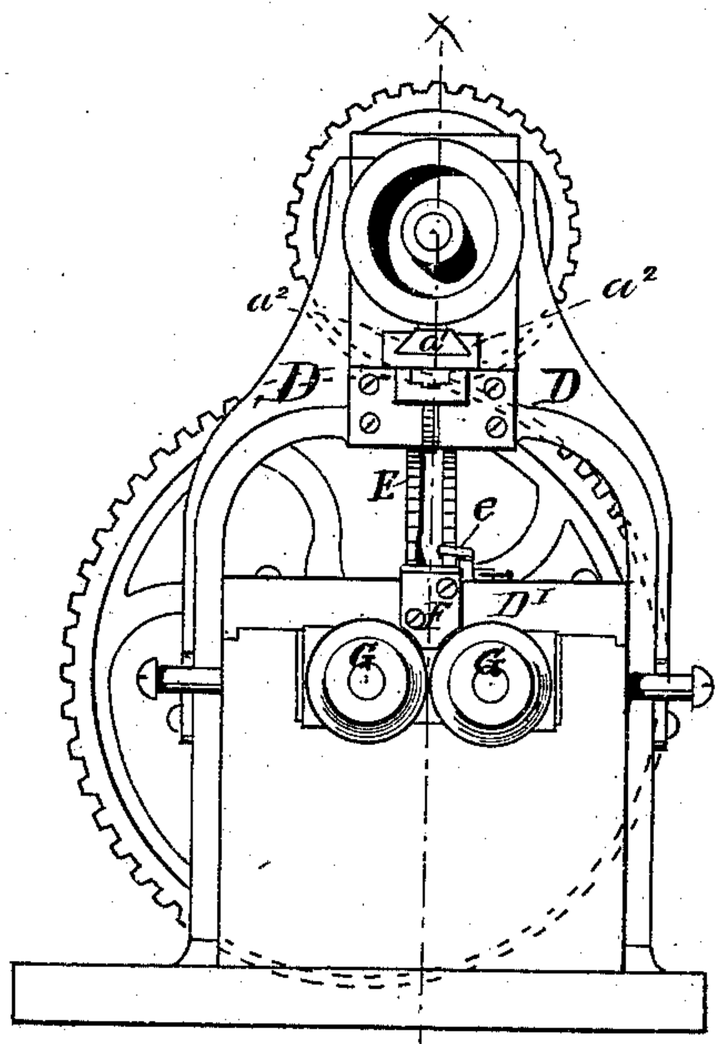

Fig. 1.

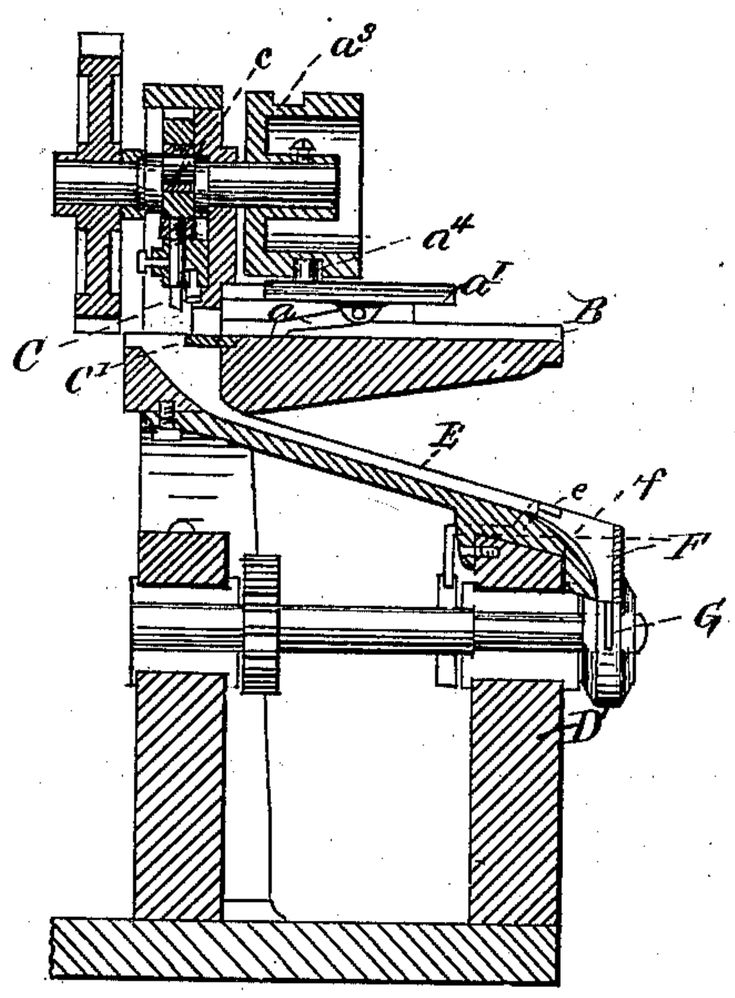

Fig. 2.

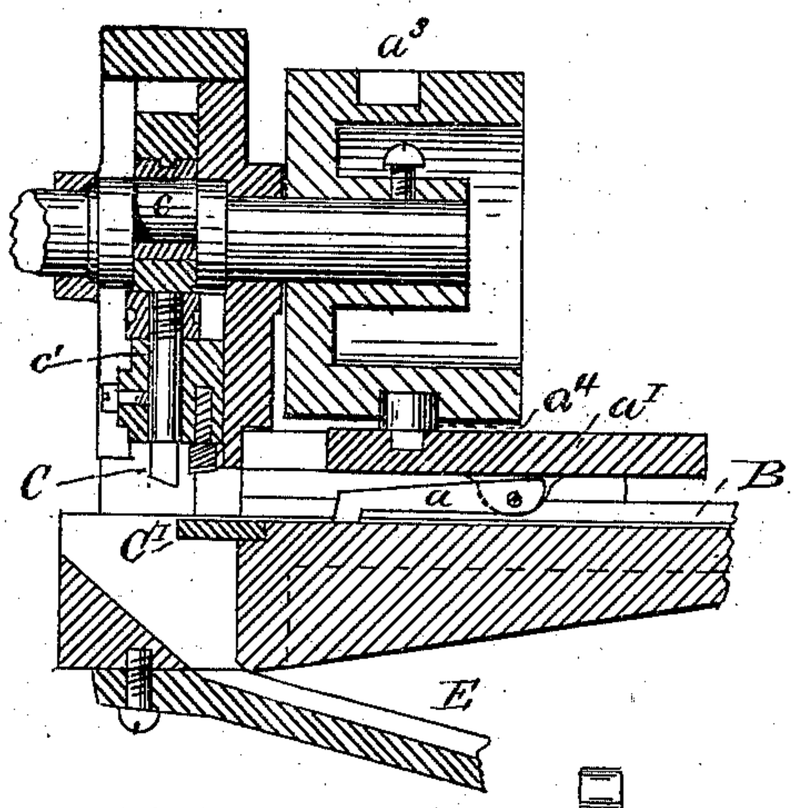

Fig. 3.

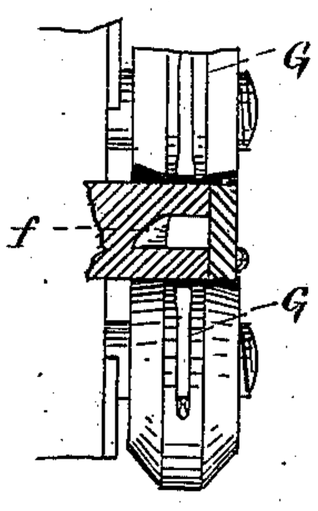

Fig. 5.

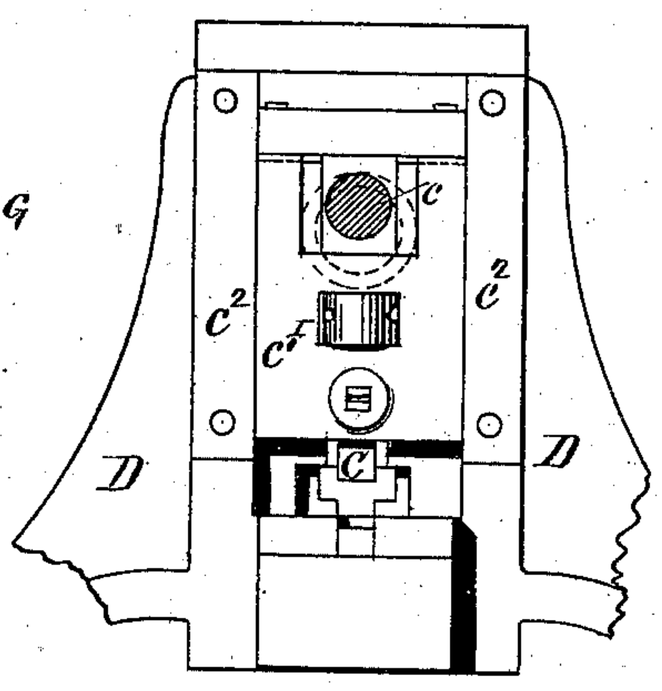

Fig. 4.

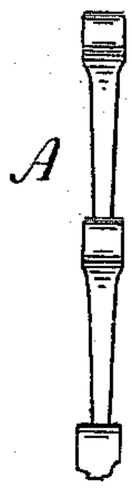

Fig. 6.

Fig. 7.

WITNESSES

A. J. Oettinger.

George F. Walker.

INVENTOR

John E. Wheeler.

by his attys

Clarke & Raymond.

UNITED STATES PATENT OFFICE.

JOHN E. WHEELER, OF LYNN, MASSACHUSETTS.

IMPROVEMENT IN HORSESHOE-NAIL MACHINES.

Specification forming part of Letters Patent No. **214,798**, dated April 29, 1879; application filed June 8, 1878.

To all whom it may concern:

Be it known that I, JOHN E. WHEELER, of Lynn, in the county of Essex and Commonwealth of Massachusetts, have invented an Improvement in Horseshoe-Nail Machines, of which the following is a specification.

The nature of this invention will be understood by reference to the following description:

In the drawings, Figure 1 is a front elevation of my machine. Fig. 2 is a longitudinal central section on the line X X of Fig. 1. Fig. 3 is an enlarged detail view of the punch, and mechanism for feeding the blank to the punch. Fig. 4 is an enlarged front view of the punching apparatus. Fig. 5 is a plan of the upper portion of the feed-tunnel and the dies. Fig. 6 is a plan and cross-section of a blank strip. Fig. 7 is a plan of a rolled blank.

The blank strip A, as shown in Fig. 6, consisting of incomplete blanks, the point-forming end of one blank joining the head of the next following, having a head-forming portion substantially of the shape of the complete head of a nail, and a shank somewhat shorter than the shank of the finished nail, but thicker and narrower, is fed point first into the feedway B to the action of the punch C. This feeding is accomplished by means of the dog a, which is supported in the carriage a^1, sliding in the ways a^2, and operated by the cam-groove a^3 and pin a^4. This dog is pivoted at the end farthest from the punch, and the opposite end is allowed to swing downwardly a limited distance, and in lifting may act in opposition to a spring. The object of this dog is to shut upon, as it is moved backward, the point-forming end of a blank immediately behind the head-forming portion of the preceding blank, which serves as an abutment against which the dog bears in feeding. Having thus fed one blank to a position under the punch, the dog is then returned the length of one blank, takes hold of the blank strip in the manner indicated, and feeds forward another blank to be severed by the punch.

The punch C is reciprocated to and from the die C′ by means of the crank c and the block c^1, which slides in the ways c^2 in the upper portion of the frame D.

The die C′ opens into the inclined chute E, which guides the descending blank to the short vertical tunnel F, immediately over the converging point of the revolving dies G.

The detent e is pivoted upon the frame D′ to open and close the inclined chute at the point where it opens into the tunnel, so that blanks are fed successively to the revolving dies.

It will be observed that the end of the chute and upper portion of the tunnel at f are so inclined that a blank, in running from the chute into the tunnel, is turned a quarter. This inclination, however, may be dispensed with by turning the punching and feeding mechanism one-quarter in relation to the revolving dies, so that the blank, in falling from the die C′, shall descend without turning to the revolving shaping-dies.

The revolving dies G are preferably so shaped that the head-forming portion of the blanks is not disturbed by them, the head-forming recesses being of the exact size of that portion of the blank. The shank of the blank, however, is lengthened, preferably broadened, and reduced in thickness, so that by one operation of the revolving dies the blank is so far completed that the operation of clipping the point alone will make a complete nail.

Other blank strips may be automatically fed to the punch, and from the punch to the revolving die, in much the same way, requiring only such simple modification in the size of the feedway, and in the shaping of the punch and die, as the skill of a mechanic would readily suggest, and the punch can be placed immediately over the revolving dies, so that the blank, upon being severed, will drop vertically or almost vertically to the revolving dies, if desirable.

Operation: In operation the blank strip is fed through the feedway by the action of the feed-dog to the punch, which severs a blank from the strip. The blank drops through the die, descends the chute and tunnel to the revolving shaping-dies, and leaves the same ready to be finished into a nail by clipping the point. Of course, the punch is timed to work with the revolving dies, and severs a blank for each revolution of said dies.

I am aware that the patent granted to G. J. Copewell October 23, 1877, No. 196,334, for ma-

chines for reducing metal, shows and describes a reciprocating carriage and a cutting device in four parts, requiring two operations to sever a blank, and a complex system of segmental dies and spiral tubes, whereby a severed blank may be shaped by a pressure exerted upon all sides by four pairs of segmental dies; but I do not consider the same to embody the features herein shown and described, which constitute the spirit of my invention, as the said device is improved with a vertically-reciprocating punch for severing blanks from said blank strip by one descent of the punch only, a feeding device which advances the blank strip to a punch and stationary die, and revolving shaping-dies for completely forming the blank.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

In a machine for making horseshoe-nails, the combination of the reciprocating feeding device for advancing a blank strip horizontally to the punch and die, the vertically-reciprocating punch for severing blanks from said blank strip, the stationary die beneath said punch opening into the conveyer, the conveyer leading from said die to revolving shaping-dies, and the revolving shaping-dies for completely forming the blank, substantially as described.

JOHN E. WHEELER.

Witnesses:

F. F. RAYMOND, 2d,

GEORGE T. WALKER.