J. W. CHEWNING, Jr.
Cut-Nail Machine.

No. 199,791. Patented Jan. 29, 1878.

Fig. 1

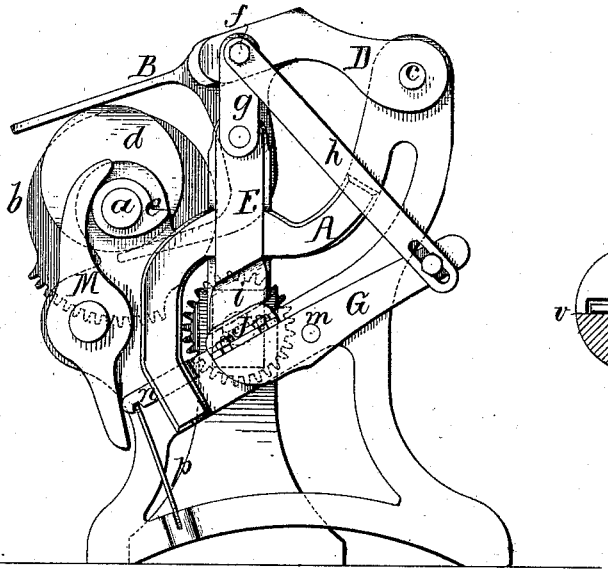

Fig. 6

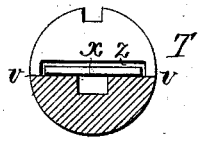

Fig. 3

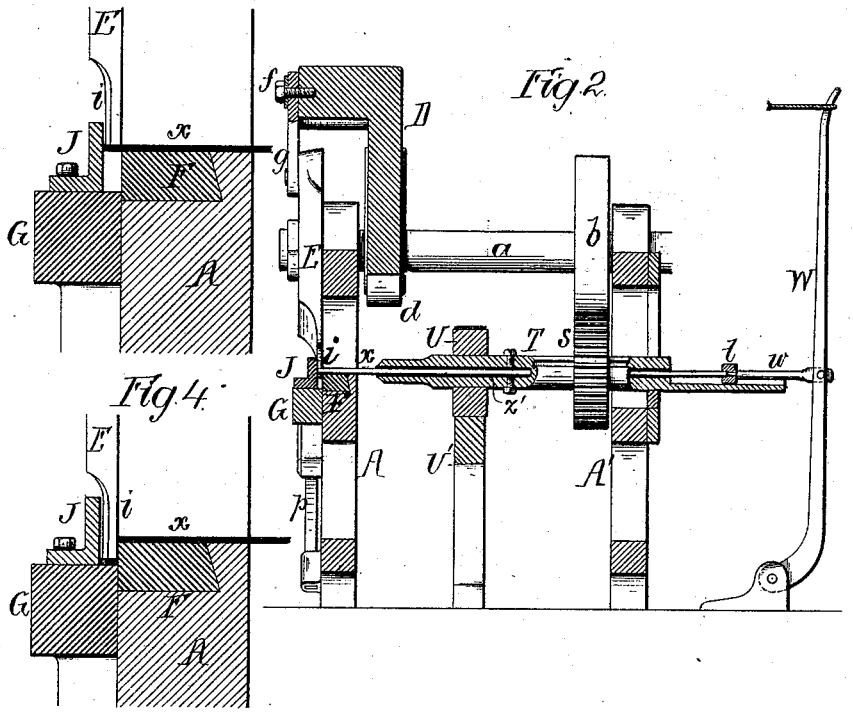

Fig. 2

Fig. 5

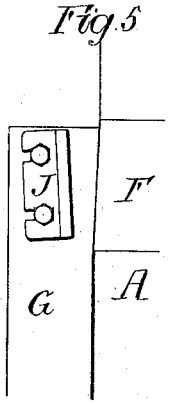

Fig. 4

Witnesses
Harry A. Crawford.
Harry Smith

Inventor
John W. Chewning Jr
by his Attorneys
Howson Sons

UNITED STATES PATENT OFFICE.

JOHN W. CHEWNING, JR., OF SHADWELL DEPOT, VIRGINIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO JAMES ROWLAND AND NATHAN ROWLAND, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN CUT-NAIL MACHINES.

Specification forming part of Letters Patent No. **199,791**, dated January 29, 1878; application filed October 16, 1877.

To all whom it may concern:

Be it known that I, JOHN W. CHEWNING, Jr., of Shadwell Depot, Albemarle county, Virginia, have invented a new and useful Improvement in Nail-Machines, of which the following is a specification:

My invention relates to certain improvements in machines for the manufacture of cut-nails, the main object of my improvements being simplicity in the construction and operation of the devices for cutting and heading the blank and for turning the nail-plate.

In the accompanying drawings, Figure 1 is a side view of my improved nail-machine; Fig. 2, a transverse vertical section of the same; and Figs. 3, 4, 5, and 6, detached views of parts of the machine drawn to an enlarged scale.

A A′ represent the opposite side frames of the machine, in which are formed bearings for the driving-shaft *a*, which carries a toothed segment, *b*, and two cams, *d* and *e*. The cam *d* is embraced by a yoke, B, which forms the end of an arm, D, pivoted to one of the side frames at *c*, and having a pin, *f*, to which are connected the upper end of a link, *g*, and that of a rod, *h*. The link *g* is connected at its lower end to the upper end of a plate, E, adapted to vertical guides on the side frame A, and reduced in thickness at the lower end, so as to form a cutting-knife, *i*, which, in conjunction with the fixed die F, Fig. 3, serves to sever a nail-blank from a flat plate of metal, as described hereinafter. The die F consists of a plain block of steel, formed preferably with beveled edges, and adapted to a recess of corresponding shape in the side frame A, the block being merely slipped into place laterally from the side of the machine, so that it can be readily removed for repairs. The lower end of the rod *h* is connected to the long arm of a lever, G, hung to the side frame A at *m*, the short arm carrying on its upper edge an adjustable gage, J, arranged adjacent to the die F and cutting-knife *i*, Figs. 3 and 4. The heading-die *n* is adapted to a guide on the side frame A, a spring, *p*, tending to maintain this die in the retracted position shown in Fig. 1, its forward movement at the proper intervals being effected by the cam *e* on the driving-shaft through the medium of the lever M.

As in other machines of the class to which my invention relates, the edges of the fixed die F and gage J are inclined in respect to each other, as shown in Fig. 5, so that the nail-blank, when severed from the plate, shall have the desired taper. This necessitates the turning of the nail-plate completely over after each operation of the cutting-die, in order that its cut edge, when it is again fed forward, shall conform to the angle of the gage J. In order to effect this operation, the nail-plates *x* are arranged to slide in a central longitudinal opening, *z*, of a tube, T, to which is secured a cog-wheel, *s*, operated intermittingly by the toothed segment *b* on the driving-shaft *a*, the extent of the movement imparted to the cog-wheel being sufficient to cause a half-revolution of the tube, and consequent complete overturn of the nail-plate *x*. The tube T is carried by a box, U, adapted to a standard, U′, so that it can move vertically therein, in order to allow the tube to rise as the plate *x* is turned over on the flat surface of the die F. The central opening *z* of the tube is provided with lining-plates, adjustable by means of set-screws *z′*, so as to adapt the tube for the reception of nail-plates of different sizes. The tube T is of such a length that it will contain several nail-plates, which are fed through the same by the pressure upon the end of the rear plate of a block, *t*, on the end of the rod *w* connected to a lever, W, against which pressure is exerted by a spring or weight. The block *t* is so hung to the end of the rod *w* that it is free to turn on the said rod with the plates *x* and tube T. The rear portion of the tube T is cut away, as best observed in Fig. 6, so as to form a flat shelf, *v*, on which, after drawing back the lever W, a nail-plate may be laid, either by hand or by automatic devices, prior to being fed through the tube.

The operation of the machine is as follows: Supposing the nail-plate *x* to be in the position shown in Fig. 3, the cutting-knife *i* first descends and severs the blank from the end of the plate, the lever G meanwhile rising, so

that the blank shall be clamped vertically between the said lever G and the knife, while it is confined laterally between the gage-plate J and the edge of the die F. (See Fig. 4.) While the blank is thus securely held the die *n* advances, forms the head, and is retracted, so that when the cutting-knife is elevated, and the lever G descends, the nail is at liberty to escape. Meanwhile the nail-plate has been turned, and as soon as the knife *i* rises above the top of the die E the plate is fed forward until its cut edge comes in contact with the gage-plate J, when the parts are again in the position shown in Fig. 3, and the above operations are repeated.

It will be observed that the above machine has but few parts, and that these are of a simple character, while the parts most liable to accident or derangement—namely, the cutting-knife *i*, gage J, and heading-die *n*—are all upon the outside of the machine, so that ready access may be had to the same, and the removal of any of them, when necessary, accomplished without difficulty.

I claim as my invention—

1. The combination of the fixed die F, the header *n*, the lever G and its gage J, and the cutting-knife *i*, all arranged and operating substantially as specified.

2. The nail-plate-carrying tube T, reduced at its rear end so as to form a shelf, *v*, in combination with the block *t* and presser-rod *w*, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JNO. W. CHEWNING, JR.

Witnesses:

HERMANN MOESSNER,

HARRY SMITH.