W. Hunt,

Making Cut Nails,

No. 1,853. Patented Nov. 13, 1840.

Fig. 1.

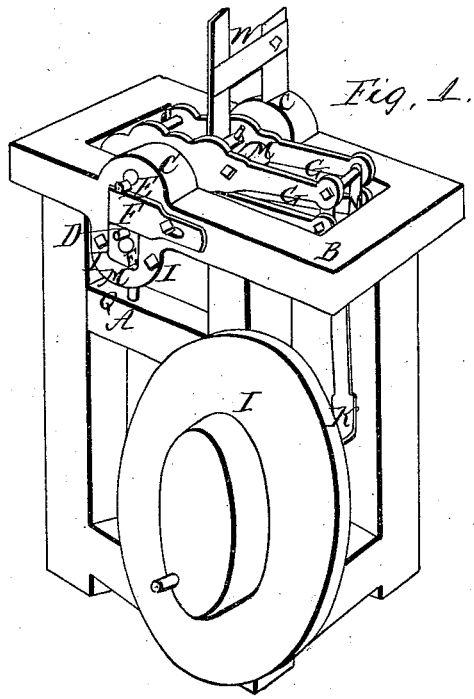

Fig. 10. Fig. 9 Fig. 8.

Fig. 6. Fig. 7.

Fig. 5.

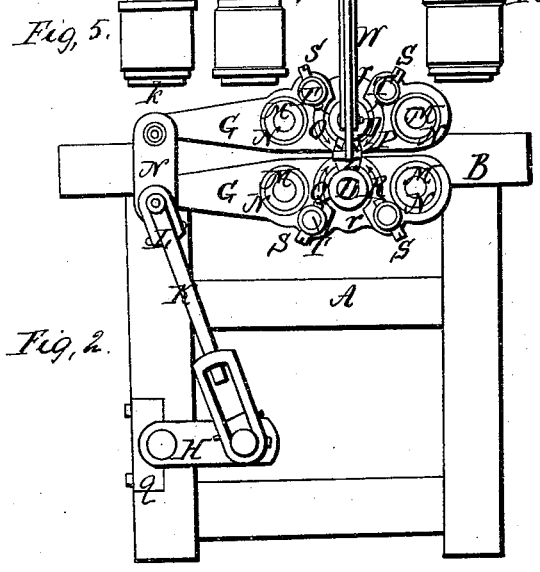

Fig. 2.

Fig. 3.

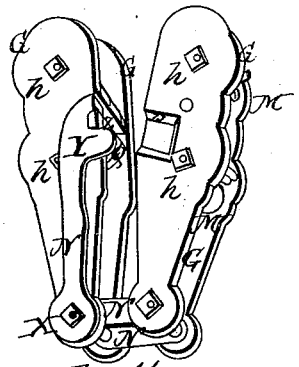

Fig. 11.

UNITED STATES PATENT OFFICE.

WALTER HUNT, OF NEW YORK, N. Y., ASSIGNOR TO GEO. D. STRONG AND JONATHAN DODGE, OF NEW YORK, N. Y.

MACHINE FOR CUTTING NAILS, BRADS, &c.

Specification of Letters Patent No. 1,853, dated November 13, 1840.

To all whom it may concern:

Be it known that I, WALTER HUNT, of the city and county and State of New York, have invented a new and useful Improvement in Machines for Cutting Nails, Brads, &c., and that the following is a a full and accurate description of said machine.

Figure 1 in the annexed drawings, gives a perspective, general view of said machine. The frame A which is an oblong square may be made of wood, or of cast iron; upon said frame is firmly secured by bolts or otherwise, a cast iron form B, made in one piece with enlargements upon the side rails which form two standards, one upon each of the same at C C, which standards are placed opposite to each other. Through these standards, are four perforations, two in each, one over the other, ranging in parallel lines, at right angles across said form. In these perforations are inserted four mandrels or centers, two of which are shown in Fig. 1 at D D, and which are forced out, and in, by the regulating screws E the heads of which run in cross slots in said centers, which centers are secured, by two, or four wedges entered between the same, upon the outsides and insides of said standards; one of which is shown at F in Fig. 1. Upon said centers D are suspended the head levers G G which are partially shown in Fig. 1 and more fully exhibited in the sectional drawings Fig. 2. These levers are made of wrought or cast metal and correspond in length with the opening in the standard form in which, they reciprocate upon said centers, similar to the walking beam of a steam engine, the motion being given by the crank H upon the horizontal shaft of the fly-wheel I which shaft runs in a box, or boxes, 9 in the frame A. From said crank, the motion is communicated to said levers by the pitman K the upper end of which has a strap joint upon the pin or bolt which connects the ends of the bottom lever, or levers, at L. These said levers may be made in two pieces, cast entire or in four slabs united in pairs as in Fig. 2 by bolts *h h h h* Fig. 3 which pass into, or through studs or spreaders at M, M, M, M, two in each pair of levers, placed equi-distant from the centers, upon which said centers, the levers reciprocate. These spreaders are turned square upon their ends, which fit into circular mortises, countersunk in the inner faces of said levers, as shown in the sectional drawing Fig. 2 letters N, N, N, N.

In the inside faces of said levers are circular grooves in which are inserted the tennons of the cutters, which are four in number, an end view of which is given in drawing 2 at O, P, Q, R where two of said levers are removed in order to show the position, and manner of securing said cutters, which is effected by check-screws S, S, S, S which pass through studs T T T T the ends of which studs, are inserted in said levers nearly opposite to the back of said cutters and parallel with the same, at T T T T. These cutters are formed in the first place into cast steel zones or thimbles see Figs. 5, 6, 7, which are nicely turned in a lathe with tennons upon the ends *k*, *k*. The surface or peripheries of these thimbles, are made tapering in three grades or elevations with two declivities or angles near each end which angles, form the heads and points of the brads, &c., in the process of cutting the same, and when the butts, or largest ends of two of these thimbles are placed together (the centers being parallel) the space left in consequence of the taper and angles between said cutters will precisely describe the form of the nail or brad, which they are designed to cut. For example, if a wedge head and pointed nail is required, as shown at O Fig. 8 the thimble is made with obtuse angles as in Fig. 7, and for a curved T head and round or bead point as in Fig. 9, letter P, the angles are reverse curved, as in Fig. 6; and for a square T head and square point, as in Fig. 10 letter Q the angles on said thimbles are made right angles as in Fig. 5.

The Figs. 8, 9, 10, exhibit pieces of nail plates with three different forms of nails or brads adjoining as above described, and also the lines in which the same are separated from said plates.

In order to form the above described thimbles into cutters, they are sawed lengthwise into four sections, or staves, each pair of which, being reversed, forms one set of cutters, see Fig. 11, letters Q, P, and the

other two quarters form the other set; these cutters are inserted, two in each pair of levers, through openings cut for the purpose, opposite to the circular grooves at *r*, *r*, and are situated as follows, (see sectional drawing Fig. 2, letters O, P, Q, R,). P in the upper lever at the right hand is mate to Q, the left hand cutter on the bottom lever; and R, the right hand cutter, in the bottom lever, is mate to O, in the upper lever, at the left hand. Thus it will be seen that the up and down motion of the pitman end of these levers, will alternately bring the cutting edges of Q, and P, and of O, and R; in close contact past each other, operating as cylindrical shears between which, the nail plate V, (which is shown in the drawing Fig. 2,) would be separated in lines corresponding with those of the cutting edges of said cutters, and consequently if the nail, plate V, is inserted precisely the depth of the taper of the cutter, or depth of the nail to be cut, at each vibration of the levers, upon the centers D, D, D, D, aforesaid; a perfect nail, or brad, will be produced.

The nail plate may be introduced by hand, with tongs, or by a regulating screw (or otherwise) through the plate-guide W, which is secured to a standard placed vertically upon the form B, at C, directly opposite to the cutters, before described. Said plate-guide is a gutter of sheet, or plate iron, standing directly over and the bottom end of which enters between the two upper cutters, as seen at V, V, Fig. 2.

The introduction of the nail plate, or the width of the nail, is regulated by a nail-gage, the end of which is seen in Fig. 2 at Z, but more fully exhibited in Fig. 3, letter Z. It is formed of a long flat spring secured at one end by the nut X, upon the end of the pitman bolt, and at the other end is bent at right angles, and passes between the two bottom cutters, a sufficient distance to catch the corner of the nail plate as it is pressed down in the process of cutting; this constitutes the nail gage and which is thrown back in time to let the nail drop between the reciprocation of the levers, by means of a spur Y which projects upward, from near the gage end of said spring which spur fits into a notch or depression cut in the lower edge of the upper opposite lever, at J, J, the limits or banks of which depression, operate as combs upon said spur in throwing back said spring at every reciprocation of the levers as aforesaid.

The two bottom centers, upon which are suspended the lower levers, are inserted in movable head-blocks, fitted in openings in said standards at M, Fig. 1, and are raised, or depressed by check-screws, underneath each one of which is seen at Q Q. These head blocks are cast with flanches upon the insides, by which they are secured to said standards by bolts and nuts, I I which pass horizontally through each, and by which means the cutters may be adjusted with required accuracy. The pitman ends of said levers are connected by means of two stirrups or links, N, N, and their motions when in operation are similar to that of a parallel rule, supposing one of the straps to be held firm in a vertical position and a reciprocating motion given to the other end of the rule.

As before mentioned, I have anticipated casting these levers in two pieces, instead of four as herein above described in which case openings will be cast for inserting the cutters, and directly back of which, they will be contracted each to one arm, tapering to the pitman ends which may be connected similar to those above described. I have also anticipated the casting of the frame and standards in one piece similar to the standing head of a large lathe, in the standard of which, my centers may be inserted and between which my levers may be suspended similar to the plan above specified and in which case an opening may be cast in the base which may project from the feet of said standards which opening makes room for the play of the crank, upon the shaft of the fly-wheel, which shaft may run in boxes or plummer blocks, cast on or bolted to said base.

Either of the two arrangements of this plan of a machine may be made to operate in a horizontal, vertical or in an inclined position, and the nail plate introduced by hand with tongs, or by means of a gage screw, feeding rollers, or otherwise.

In the above specified machine, my claims as inventor, are as follows, and not otherwise:

1. I claim the plan of forming the cutters for cutting nails, brads, &c., from staves, or longitudinal sections of metal zones or thimbles, in the form, or forms above specified, whether the same are first made or turned in entire pieces and afterward cut, or sawed into sections, or whether said sections are fitted up separate, or made of cast steel, or other metal.

2. I also claim in connection with said above described cutters or those of any other form, having similar shaped cutting surfaces, or edges, the mode of arranging the same, in such manner as to operate upon the same principle of motion, (that is to say,) arranged in two opposite pairs, fitted in levers, or other fastenings, by the vibrating motion of which levers, two opposite cutters, one from each pair, is made to approximate, and pass each other, operating as cylindrical shears, in cutting off one nail, and as these cutters recede, the other pair operate in a similar manner in cutting the next nail alternately.

3. And I further claim the combination, and general arrangement of the head-levers, cutters, and spring-gage constructed and arranged as above set forth and described, without reference to the particular form of the cutting edges of the cutters; for the purpose of cutting nails, brads, tacks, &c., without regard to the particular form or shape of the same.

WALTER HUNT.

Witnesses:
B. H. MORSELL,
EDMUND MAHER.