

(No Model.)

W. WICKERSHAM.
CUTTER FOR NAIL MACHINES.

No. 287,600.

Patented Oct. 30, 1883.

Fig. 1.

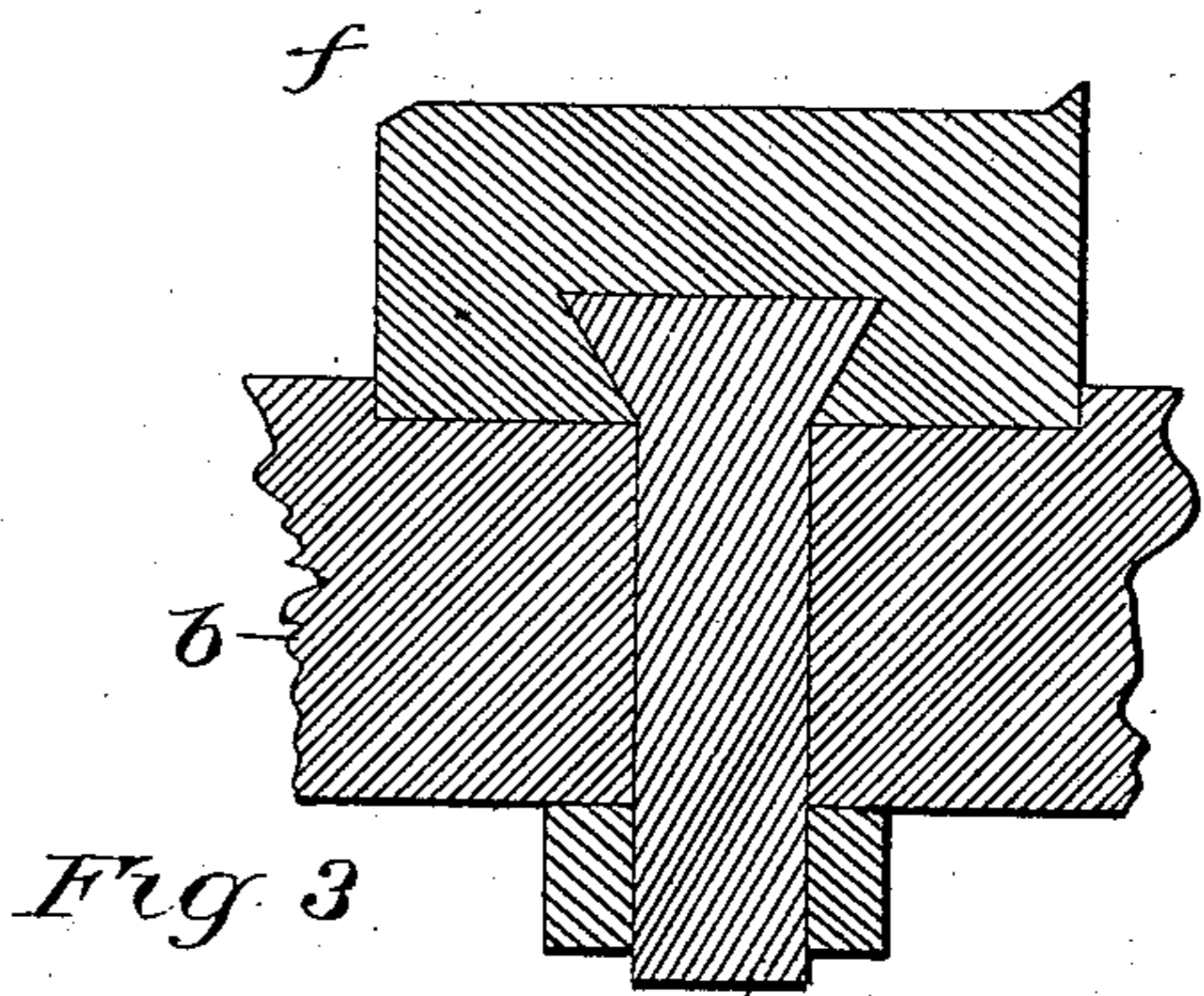
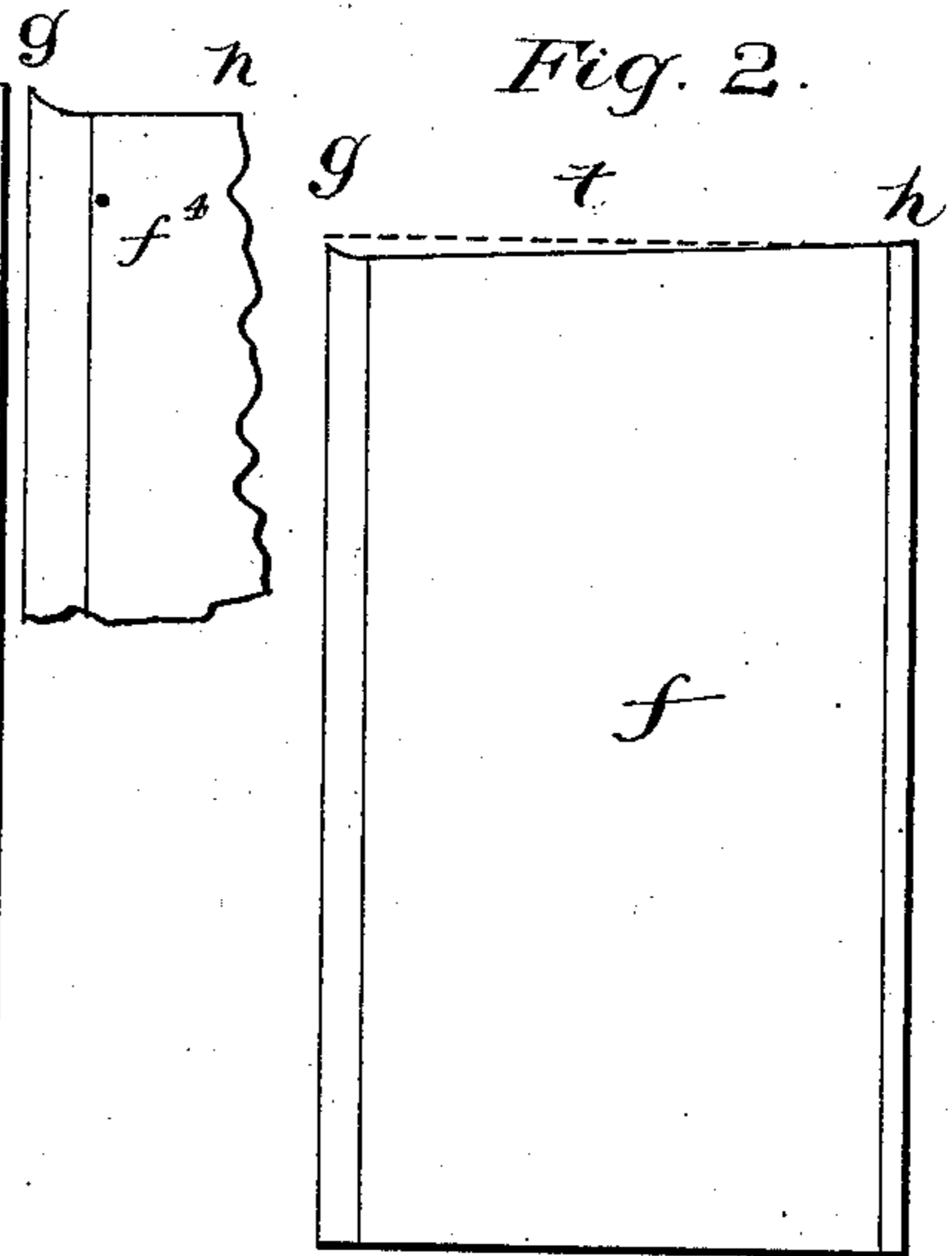
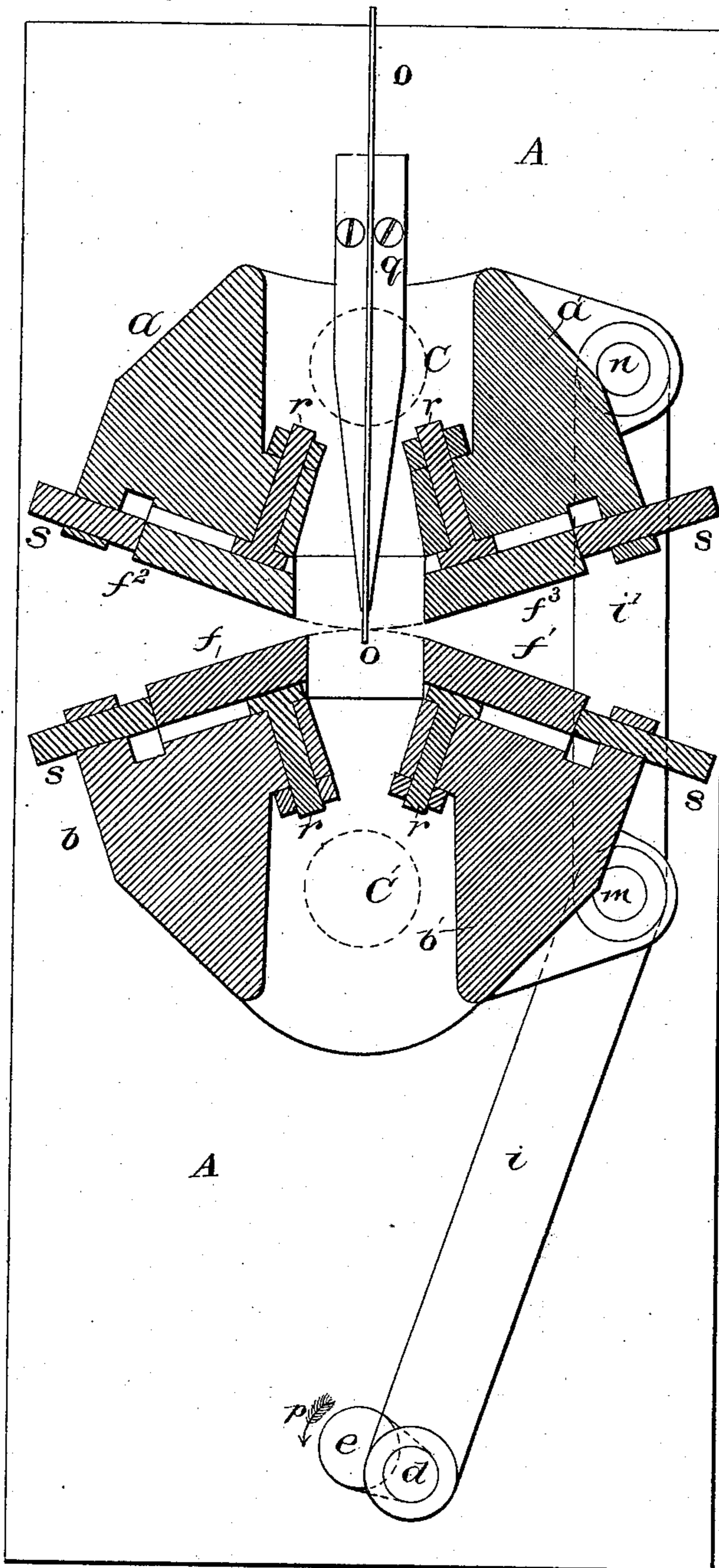
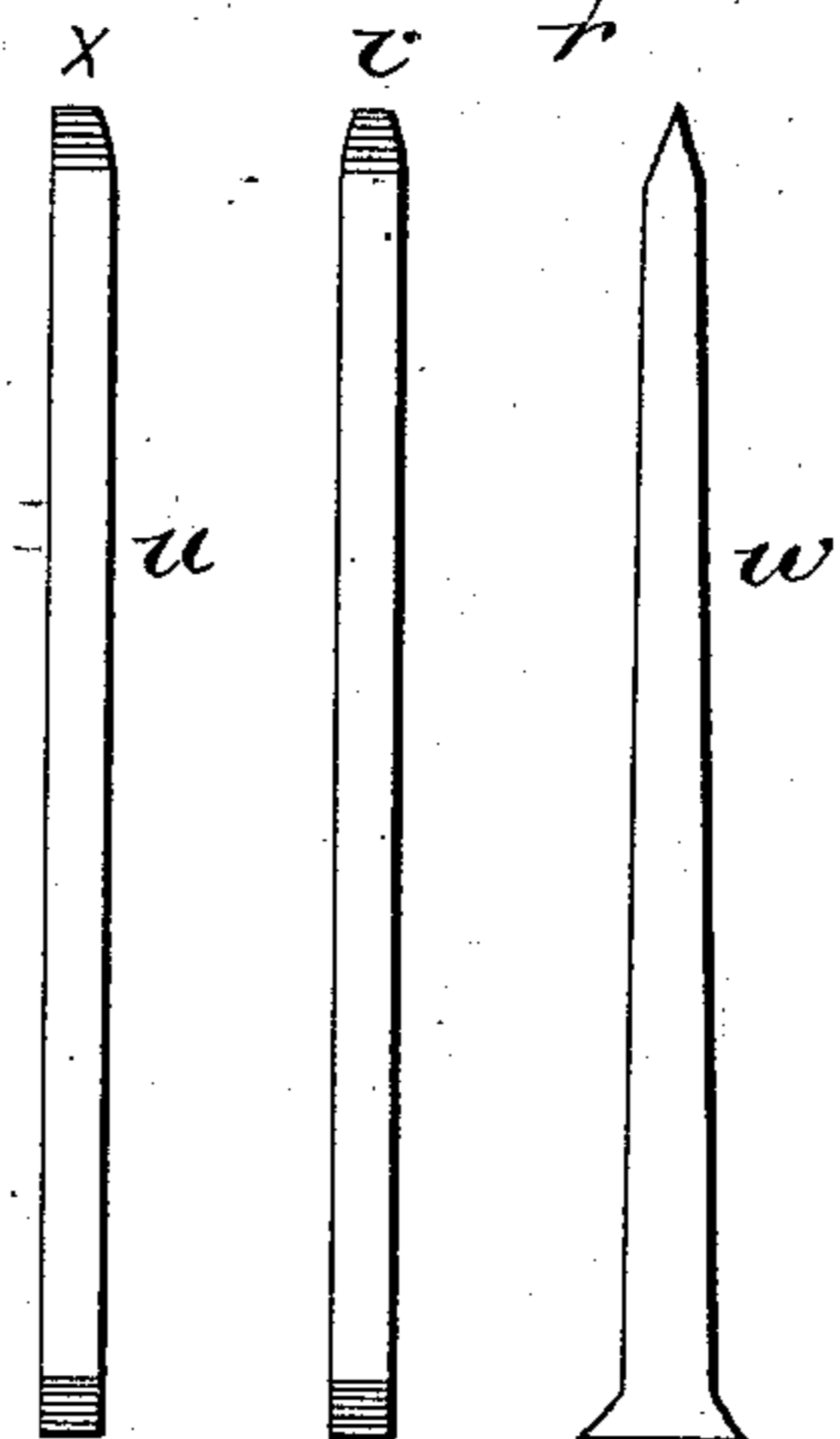


Fig. 3.



Witnesses:

Addison C White
Walter H. Blodget

Inventor:

William Wickersham

UNITED STATES PATENT OFFICE.

WILLIAM WICKERSHAM, OF WORCESTER, MASSACHUSETTS.

CUTTER FOR NAIL-MACHINES.

SPECIFICATION forming part of Letters Patent No. 287,600, dated October 30, 1883.

Application filed January 30, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM WICKERSHAM, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Cutters for Nail-Cutting Machines, of which the following is a specification, including the annexed drawings.

In order to explain the nature of my invention, it is necessary first to describe the defect in cut nails and the kind of cutters by which the defective nails are made, and then I can the more clearly show how my invention remedies this defect in cut nails.

The metallic sheet from which nails are cut is compressible, so that in cutting off a narrow strip from a sheet with a pair of shears or cutters in a nail-machine that part of the strip which the shear-blade approaches is compressed a little close to its edge before it is severed from the sheet, and in cutting a nail from a sheet (as all nails are cut) so that two cut edges thus compressed meet to form a point to the nail, one side of the nail at said point will be compressed or a little rounded, while the other side will be straight, as it is pressed against a straight edge while the nail is being severed from the sheet, and thus one side of the nail at the point being straight and the other side being rounded gives the nail a tendency to change its direction as it passes through the wood when driven in, and this defect in the nail is due to the act of cutting while both blades of the shears or cutters are straight.

Now, my invention consists in a cutter for shearing off the nail, formed with a projection on that part of its cutting-edge which shears off the point of the nail from the sheet, making a counter-indentation—that is, making a compression on the opposite side of the nail at the point to that above described, which was made by the act of cutting, which I will show more fully by a reference to my drawings, wherein—

Figure 1 is a vertical section through the cutters and cutter-stocks, and at right angles to their axes of motion. Fig. 2 gives a face view of the cutter and its cross-section, with the bolt securing it to the cutter-stock. Fig. 3 is a side and edge view of the nail as made

by my cutter, also showing a nail made in the old way.

a a are my upper and double cutter-stock, *b b'* my lower cutter-stock, which cutter-stocks have a rocking motion on their journals *c c'*, working in boxes in the frame *A*. This rocking motion is produced by the crank *d* on the main shaft *e* through the connection-rods *i i'*, the rod *i* being hinged to the cutter-stock *b b'* at *m*, and the rod *i'* being hinged to the same pin, *m*, at one end, and also hinged to the cutter-stock *a a'* at *n* at the other end, in such manner that when the main shaft is moved in the direction indicated by the arrow-point *p* the cutter *f'* will move forward toward the lower end of the nail-plate *o o*, while the cutter *f''* will also be moved forward on the other side toward the plate *o o*, and close to and above the cutter *f'*, as their cutting-edges pass a little by each other, at the same time shearing off a nail from the lower extremity of the nail-plate *o o*, and then as the main shaft continues to turn these cutters *f'* and *f''*, after shearing off a nail, will recede from the sheet *o o*, which meantime will be fed downward far enough for the width of a nail by a mechanism well known to the arts, and shown and described in a patent granted to W. Wickersham on the 2d day of January, 1883, and then by a continuous motion of the main shaft the cutters *f* and *f''* are caused to approach and pass a little by each other, *f''* above and *f* below, thereby cutting off another nail, and thus by a continuous motion of the main shaft the cutters *f'* and *f''* and *f* and *f''* are made alternately to cut nails from the plate *o o*, which is fed down through a groove in the guide *q*.

My cutters are attached to the cutter-stocks *a a'* and *b b'* by the bolts *r r r r*, (shown on a large scale at Fig. 2, where the cutter *f* is shown in cross-section, and the bolt *r* is shown in its position in the cutter and cutter stock.) *s s s s* are four set-screws to hold the cutters in position.

My cutters are made a little shearing—that is, the angle at *h* is a little acute, the dotted line at *t* being at right angles with the sides of the cutter, so that the cutting of the nail begins at *h* and progresses toward *g*.

At Fig. 3 there are three views of the nail. At *w* is a nail cut in the ordinary way with a

cutter having a straight edge, and by the compression of the metal by the operation of cutting, the point at a is a little indented on one side, while the other side is straight, giving the nail a tendency to turn to one side as it is driven into the wood, and to remedy this I make a counter-indentation on the other side at the point, as shown at v , Fig. 3. This counter-indentation is made by a small projection, g , on the cutting-edge gh of the cutter f .

At f^1 , Fig. 2, is shown a portion of the face and edge of the cutter on a large scale, showing more plainly the projection g on the edge gh . This projection g , while in the act of shearing off the nail, shapes the point, as shown at v , Fig. 3, making the indentations on the two sides of the point equal, or nearly so. At w is shown a side view of my nail.

I will only say, further, that it is the lower cutters which need the projection g —that is, when the nail-plate is fed downward; also, that the cutting-edges of the upper cutters,

$f^2 f^3$, are at right angles with their sides, and that they are so adjusted that in their farthest forward movement they will just come in contact with the nail-plate $o o$, while the other cutters, $f f'$, advance far enough to sever the nail from said nail-plate, passing a little by the edges of the upper cutters, all the shear being on the lower cutters.

Having thus described my invention, I will state my claim as follows:

In nail-cutting machines, wherein two cutters co-operate to cut nails from the edge of a sheet, on the principle of the co-operation of two blades of shears, the projection g on the cutting-edge gh of one of the cutters, in combination with the two co-operating blades or cutters f' and f^2 , substantially as described, and for the purpose set forth.

WILLIAM WICKERSHAM.

Witnesses:

DAVID MANNING, Jr.,

CHAS. W. WOOD.