

W. N. SPRAGUE.
Machine for Cutting Leather-Board for Heel-Stiffeners.

No. 219,601.

Patented Sept. 16, 1879.

Fig:1.

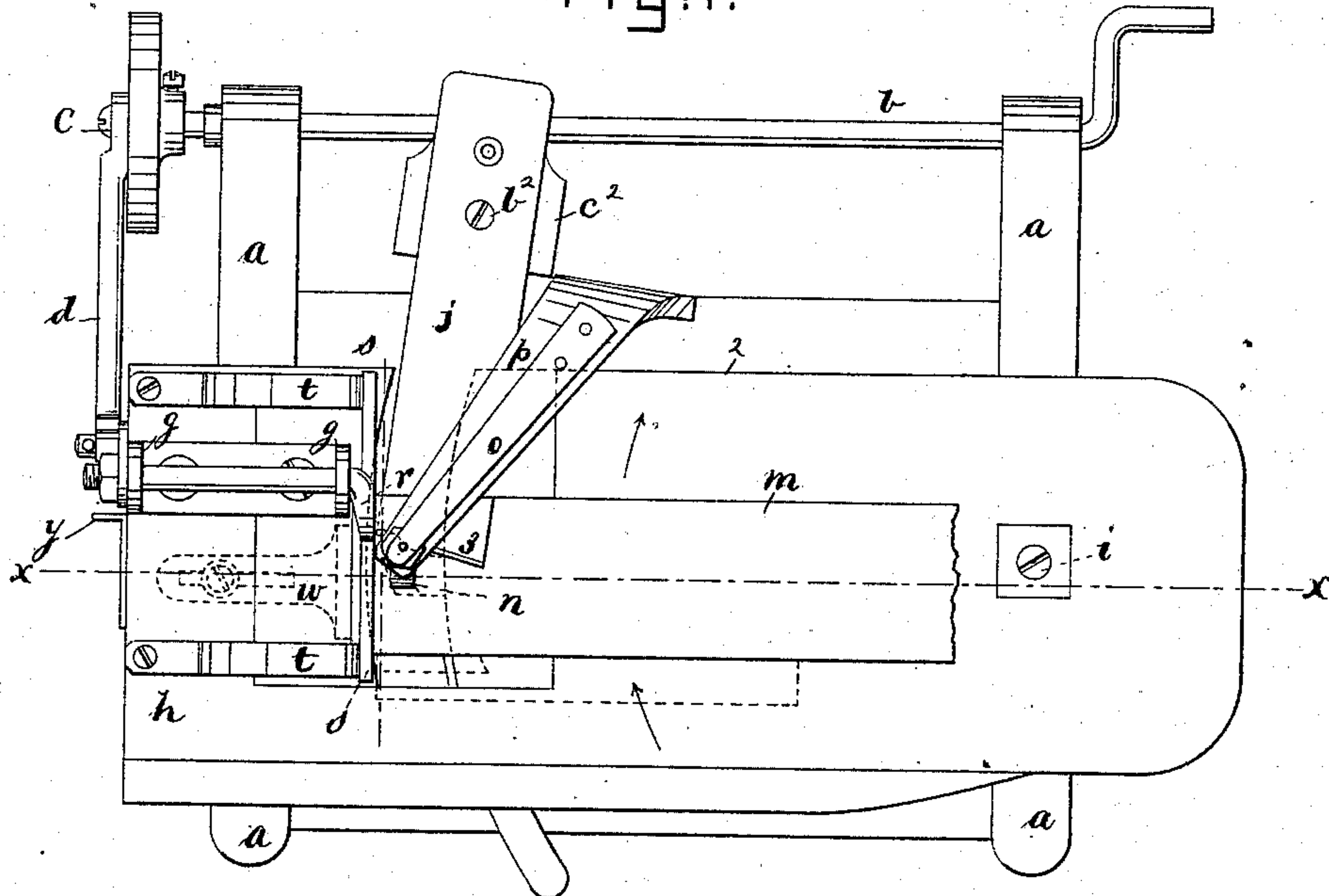


Fig:2.

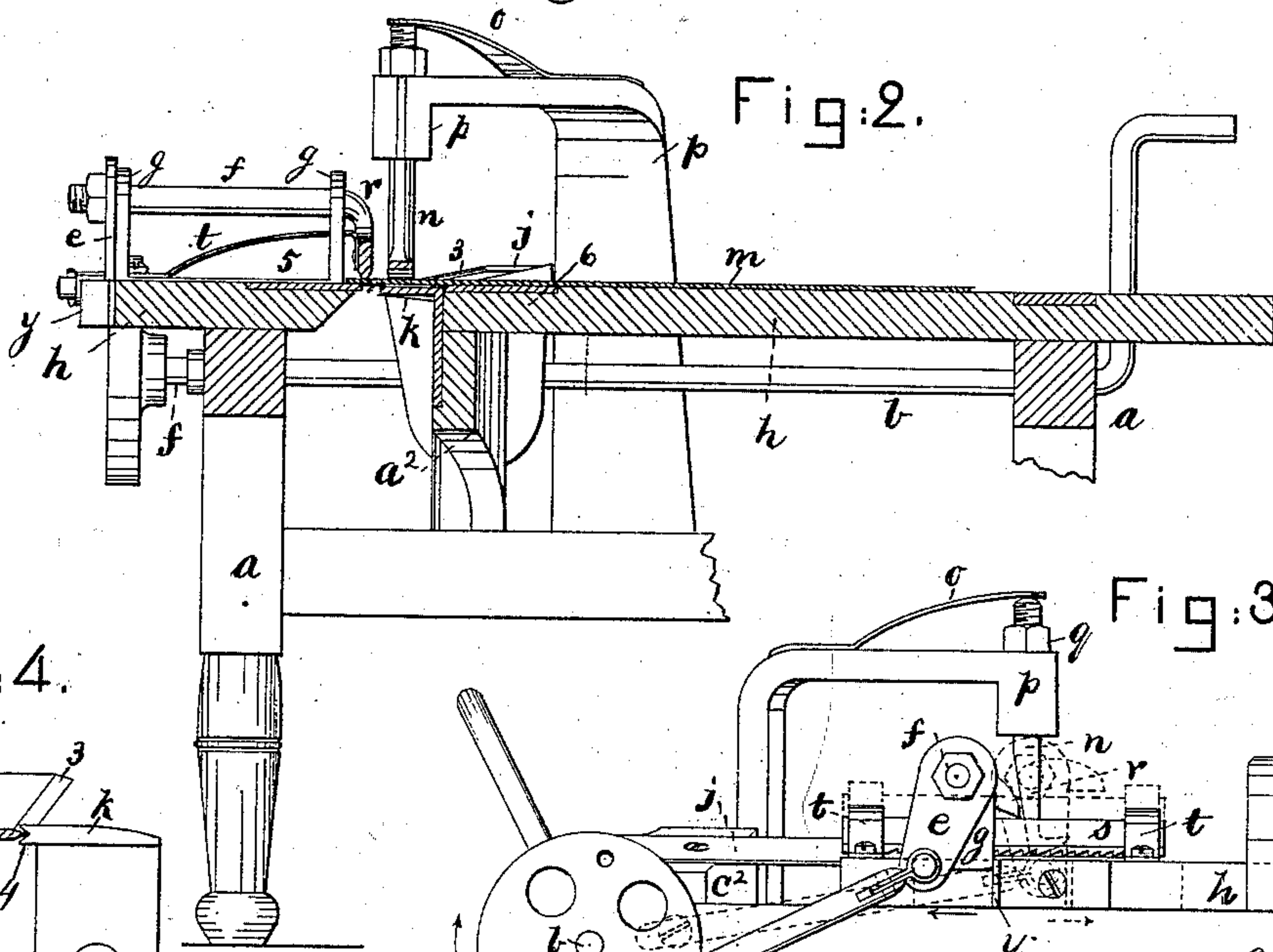


Fig:4.

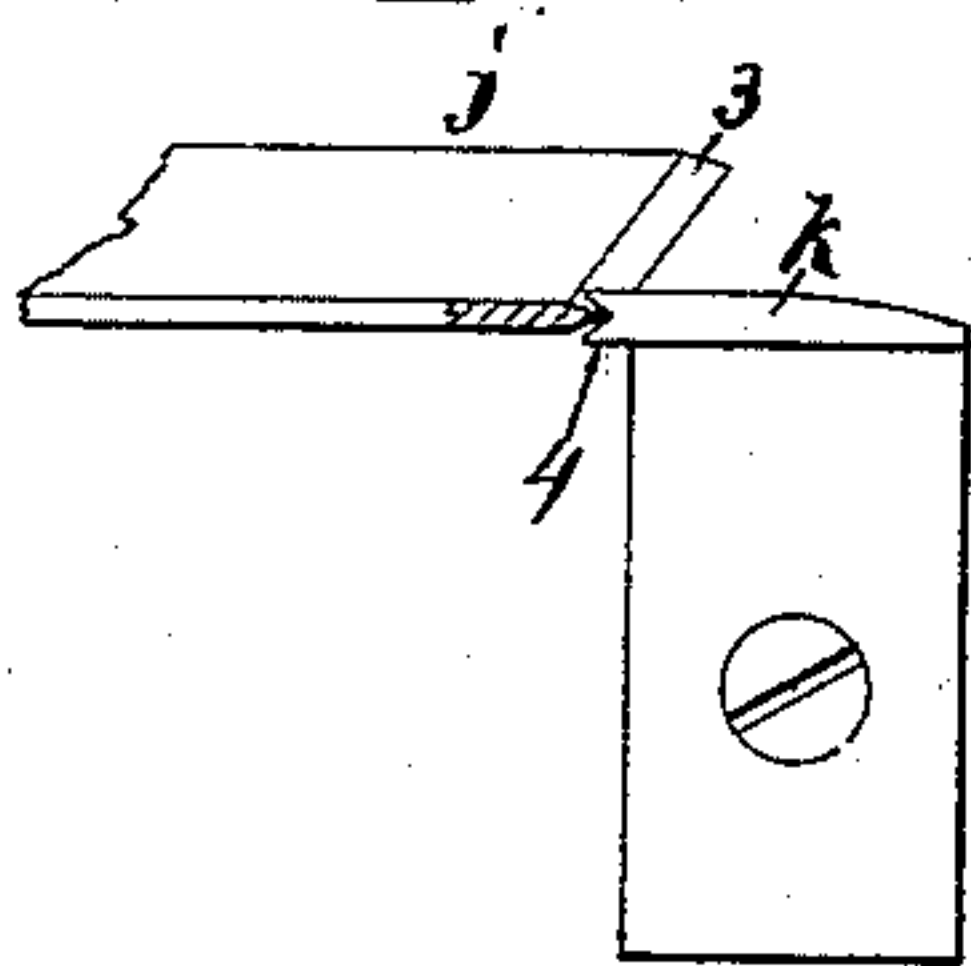
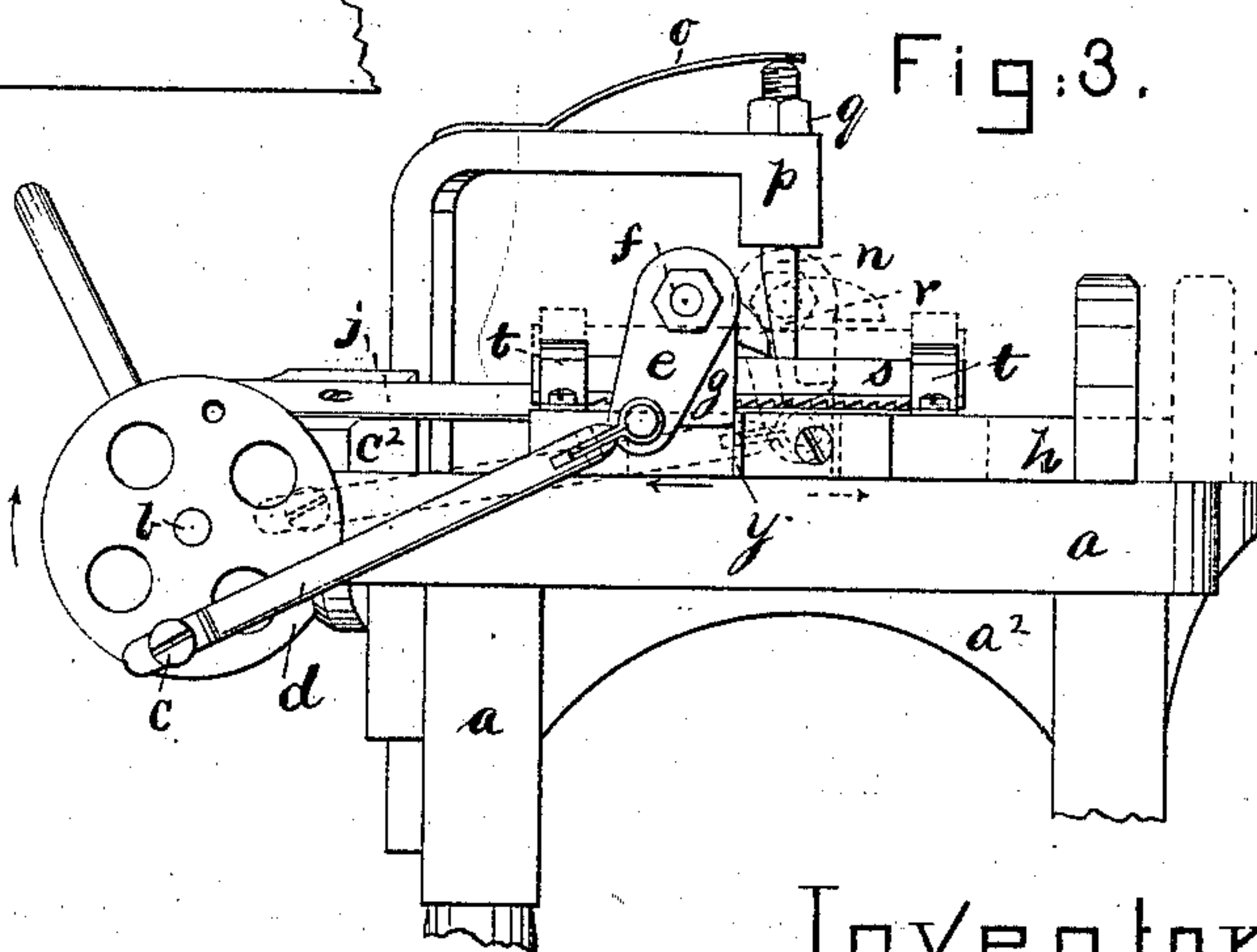


Fig:3.



Witnesses.
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UNITED STATES PATENT OFFICE.

WATSON N. SPRAGUE, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO
POTTER, SPRAGUE & WATSON, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR CUTTING LEATHER-BOARD FOR HEEL-STIFFENERS.

Specification forming part of Letters Patent No. **219,601**, dated September 16, 1879; application filed April 25, 1879.

To all whom it may concern:

Be it known that I, WATSON N. SPRAGUE, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Machines for Cutting Leather-Board for Heel-Stiffeners, of which the following description, in connection with the accompanying drawings, is a specification.

This invention relates to a machine for cutting leather-board or other material for the formation of heel-stiffeners.

In this my improved machine the strip or sheet of leather-board or other material to be formed into heel-stiffeners is placed in contact with suitable end and side gages on a vibrating or oscillating bed or support, upon which is also arranged a clamp to automatically grasp that end of the material which is by the next movement of the bed to be separated for a stiffener or counter. This clamp is made to engage the material at or before the commencement of the movement of the bed toward the cutter, and to automatically release the severed stiffener at or about as the bed is to be moved backward. This bed is slotted to receive the cutter as the bed vibrates. The forward edge of the blade or cutter, set at the proper inclination to sever and at the same time skive the edges of the material, is held and steadied at one edge by a rest, which is so placed that it is embraced or included between the slotted portion of the bed during its vibrations, a suitable presser-foot pressing the material at the point where it is being severed down upon the rest, thereby guiding, presenting, and steadying the material uniformly and accurately to the cutting-edge of the cutter.

Figure 1 represents, in top view, a machine embodying my invention; Fig. 2, a longitudinal section thereof on the line *x x*; Fig. 3, a front-end view, the clamp then being in position to hold the material, and the bed being partially moved toward the blade; and Fig. 4 is a detail, showing the edge of the blade as held and steadied against vibration by a notched portion of the rest.

The frame *a* of the machine supports a suitable driving-shaft, *b*, having upon it a proper crank and crank-pin, *c*, which, as herein shown,

is, by link *d*, connected with an arm, *e*, of a rock-shaft, *f*, mounted in proper bearings or ears *g* of a plate fixed to the bed *h*, pivoted at *i*. (See Fig. 1.) The said bed is vibrated or oscillated for the desired distance about its pivot by this or other proper crank and link or equivalent devices. This bed, from its edge 2, (see Fig. 1,) is slotted or cut away across it in the arc of a circle.

The cutting end 3 of the blade or cutter *j* is held by a notched or other equivalent portion, 4, of the fixed rest *k*, so as to maintain the said cutting-edge 3 at an acute angle with relation to the surface of the bed, as shown in Fig. 2.

The material held on the said bed and extended across the slot therein is, by the movement of the bed, forced against the said inclined edge 3 and severed diagonally. The slot in the said bed permits it to be moved with the material against and past the cutting-edge 3 far enough to cut the material into stiffeners.

The edge 3 is made to sever the material with an oblique cut, leaving two skived edges.

Referring to Fig. 2, the metal plates 5 6 each side the stationary rest are attached to the bed *h*, each side the slot cut in it, to permit the bed to be moved and carry with it the leather-board or material *m* past the end of the blade *j*, and over the rest, and under the presser *n*, held down by a spring, *o*, the shank of the presser rising in the head *p*, according to any variations of thickness of material *m*, but descending only to a certain position fixed by the nut *q*, this nut and spring regulating the pressure under which the material is held while being carried between the rest and foot by the moving bed.

The end 3 of the blade, held, as described, by the rest, cannot vibrate as the leather-board is forced against it, and the leather-board is kept from rising too far above the blade by the presser, which bears upon the material just in advance of the edge 3 of the blade, and holds it pressed down upon the rest.

As herein shown, the rock-shaft *f* has an arm or finger, *r*, which, just as or before the link *d* begins to draw the bed in the direction of the arrows, Fig. 1, strikes the clamp *s* (shown

as supported by springs *t* and provided with serrated teeth) and forces the said clamp down, so as to firmly grasp the material *m* between it and the bed *h* before the edge of the material next the edge 3 of the blade *j* is brought in contact with the blade. In this way the force required to draw the material against the blade and sever it is made available as clamping force to hold the material upon the bed.

When the bed has been moved far enough to sever the material, and is to be returned, the return or pushing stroke of the link *d* removes the arm *r* from the clamp, and the springs *t* raise it and release the stiffener just made, and leave a space below it and the bed, to again receive the end of the material, which is then made to meet the gage *w* on the bed, and shown in dotted lines, Fig. 3.

In Fig. 3 the dotted lines show the bed, clamp, &c., in the position they will occupy before the material *m* is clamped and the bed is started to carry the material against the blade *j*.

The stop *y* on the bed *h* stops the movement of the arm *e* and rock-shaft *f* as the link *d* moves the bed backward.

The rest *k* will be adjustably attached to the cross-girder *a*², rigidly connected with frame *a*.

The blade *j*, attached by screw *b*², will be made adjustable longitudinally upon its adjustable holder *c*², the holder permitting the inclination of the blade to be made more or less with relation to the surface of the bed *h*. The blade *j* severs the material on curved lines, and gives each separated piece the proper curved edges for a heel or counter stiffener.

I claim—

1. The slotted vibrating bed or support combined with an attached clamp, to hold the end of the material clamped upon the bed while the latter is moved to force the material against the cutting-blade, substantially as described.

2. The slotted bed and clamp and mechanism to vibrate the bed and automatically operate the clamp, substantially as described.

3. The blade and the stationary rest to hold it at its forward end, combined with the slotted movable bed and clamp, substantially as described.

4. The blade, stationary rest, and presser-foot, to press the material upon the rest in advance of the blade, combined with the slotted bed and mechanism to move it, substantially as described.

5. The vibrating slotted bed and spring-supported clamp, combined with the rock-shaft, its arms, link *d*, and shaft *b*, substantially as described.

6. The rest to rigidly hold the forward end of the blade, the blade, the presser-foot located above and opposite the rest, the presser, and rest bearing on opposite sides of the material being passed between them to hold it steadily as it is being separated diagonally by the blade, combined with a vibrating slotted bed and a clamp thereon to hold the material, substantially as described.

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

WATSON N. SPRAGUE.

Witnesses:

G. W. GREGORY,
N. E. WHITNEY.