

A. S. Gear,

Wood Carving

No. 106685,

Patented Aug. 23. 1870.

fig. 1.

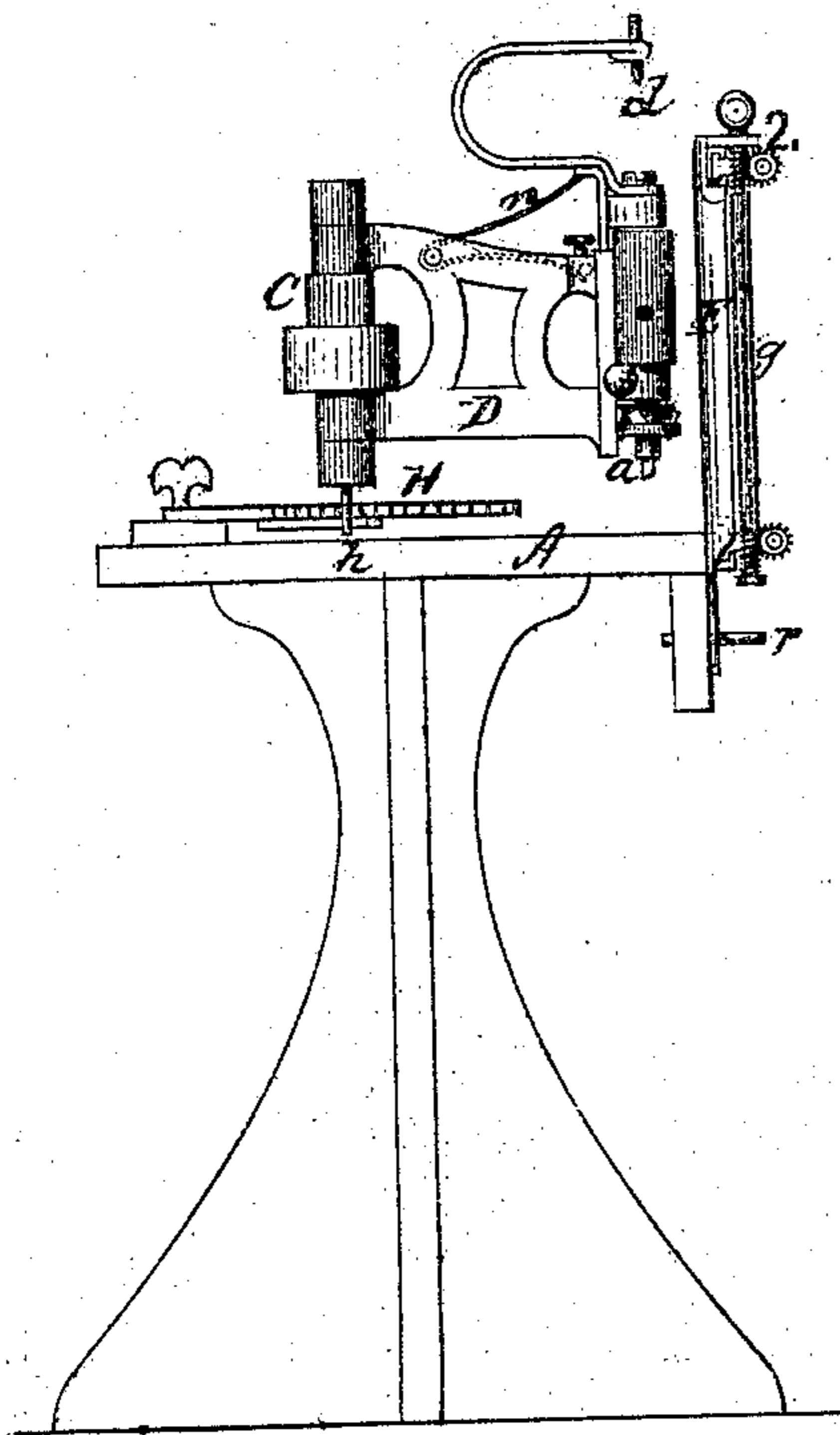


fig. 2.

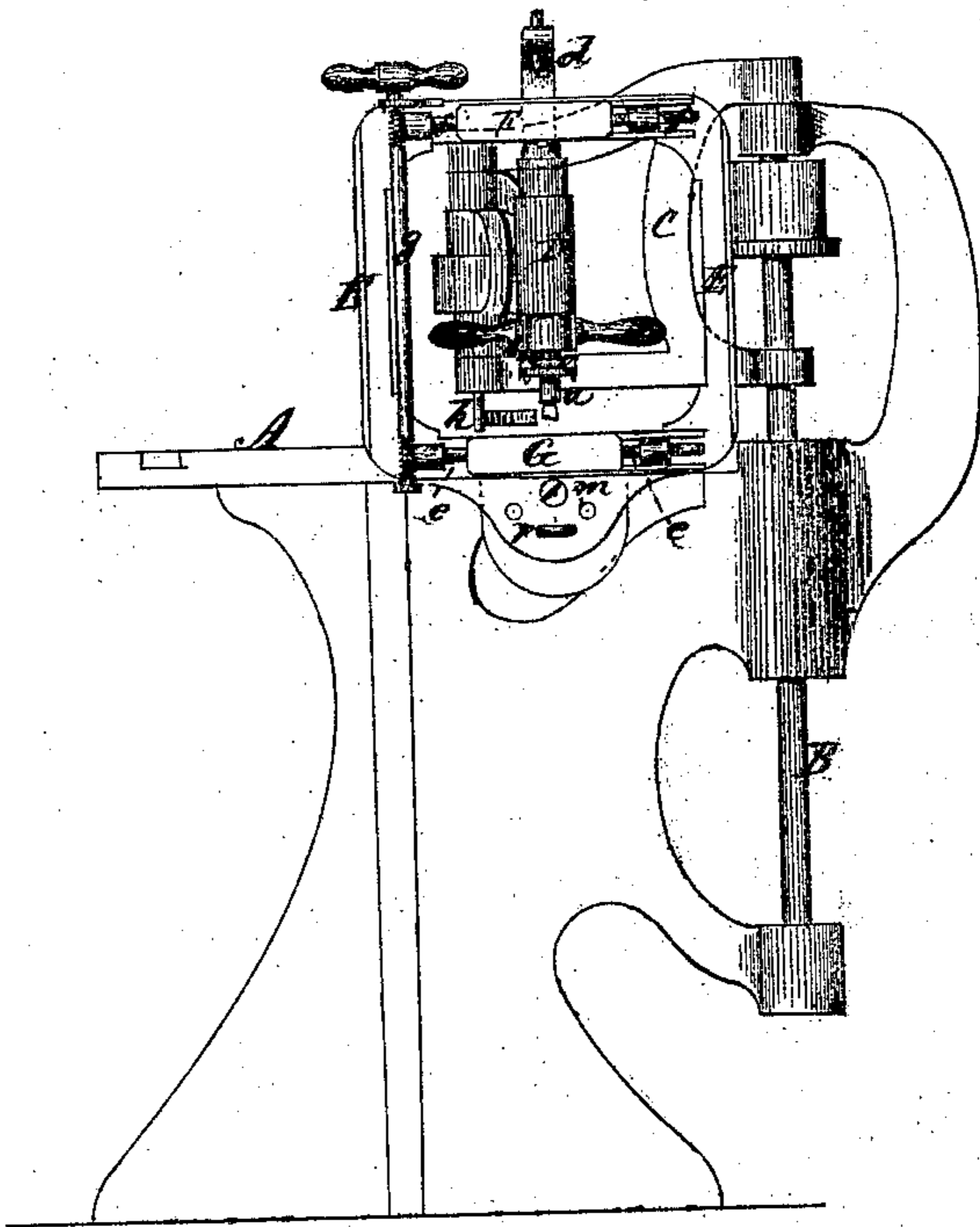


fig. 3.

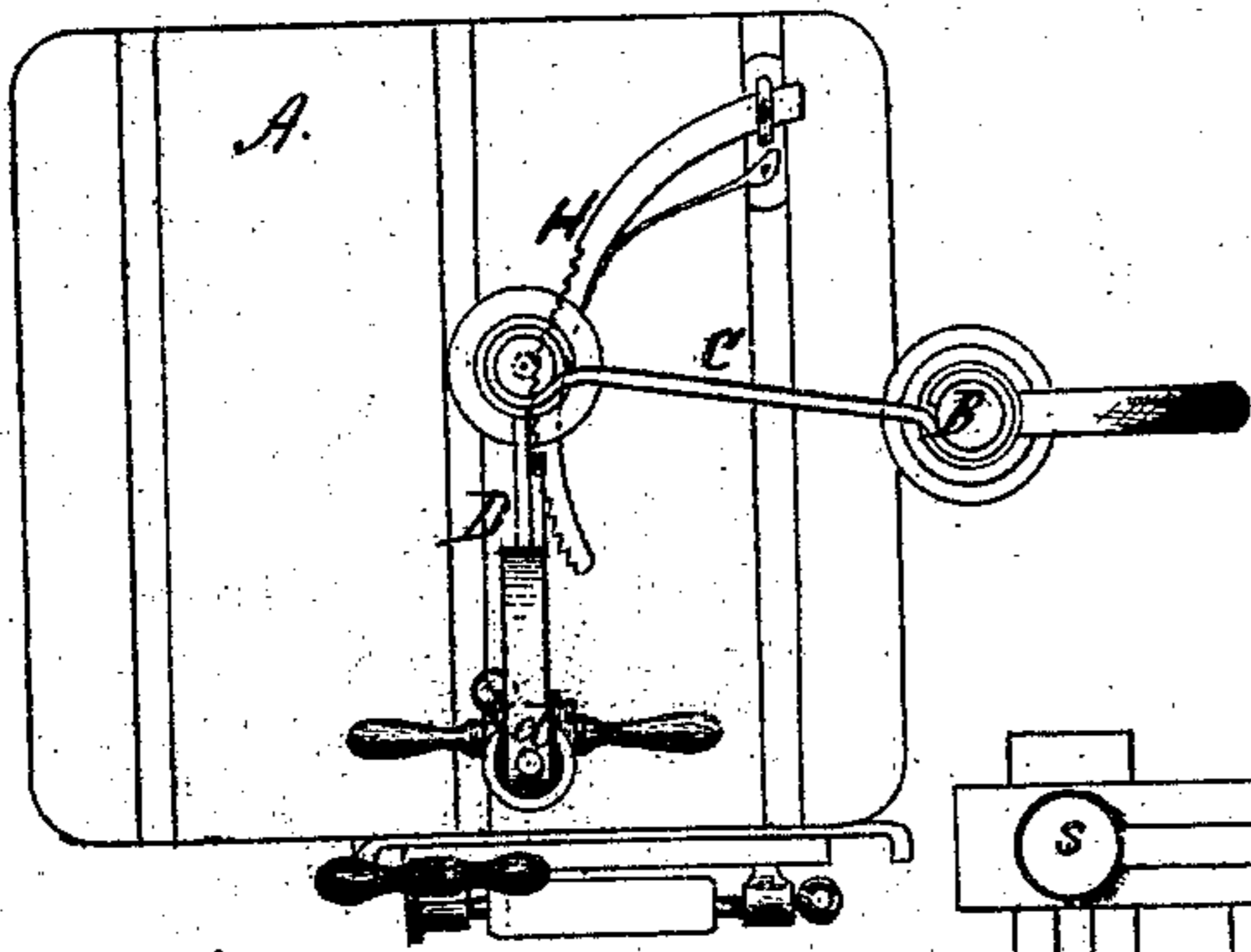


fig. 4.

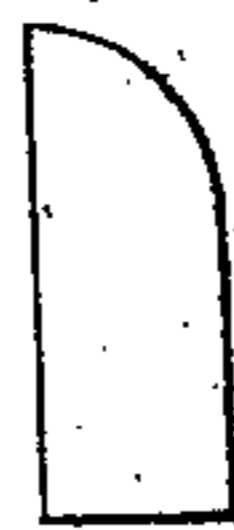


fig. 5.



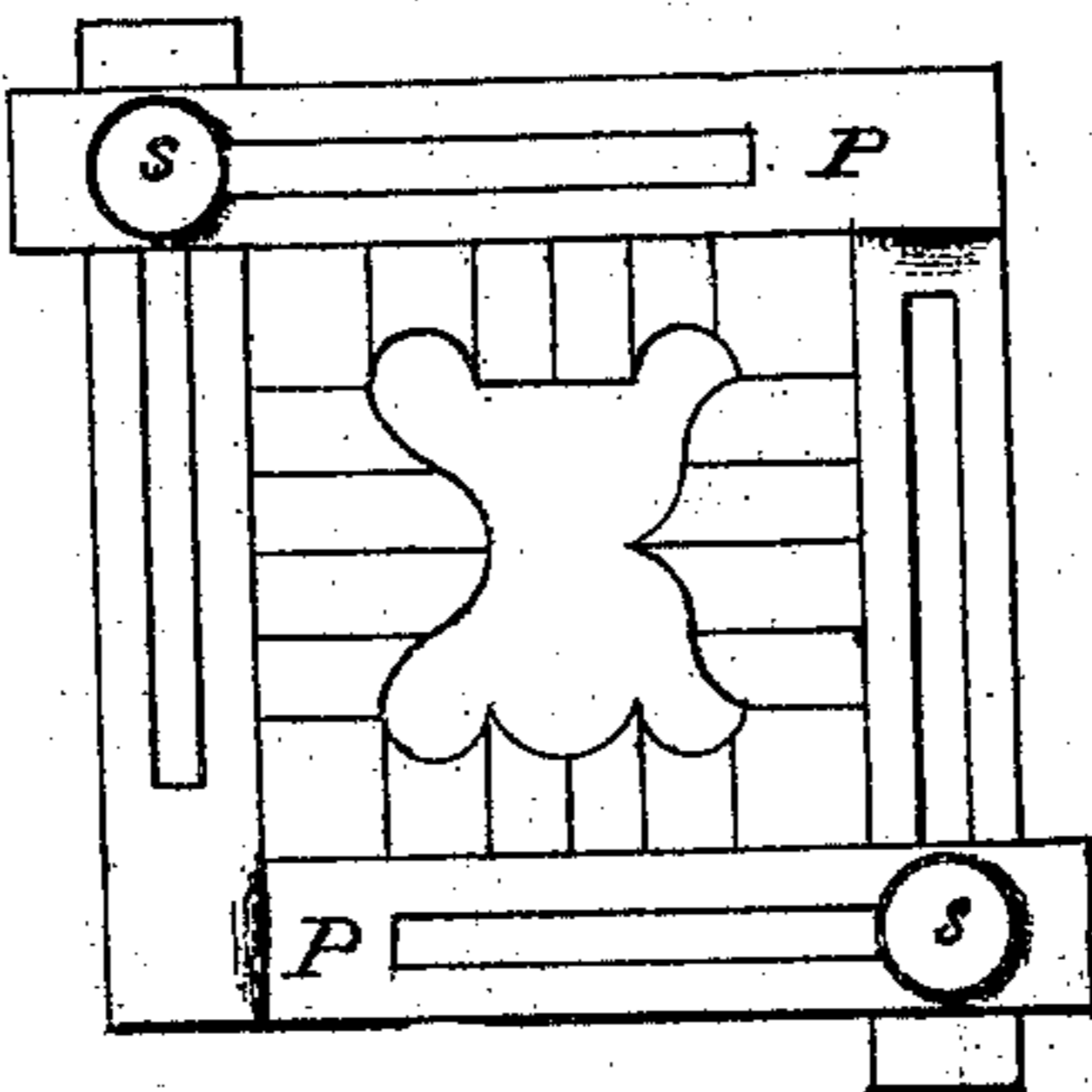
fig. 7.



fig. 8.



fig. 6.



Witness
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a. J. White

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UNITED STATES PATENT OFFICE.

ALONZO S. GEAR, OF NEW HAVEN, CONNECTICUT.

IMPROVEMENT IN WOOD-MOLDING MACHINES.

Specification forming part of Letters Patent No. **106,685**, dated August 23, 1870.

To all whom it may concern:

Be it known that I, ALONZO S. GEAR, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Wood-Molding Machine; and I do hereby declare the following, when taken in connection with the accompanying drawings, and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a front view; Fig. 2, a side view; Fig. 3, a top view; Figs. 4 and 5, the two shapes of interchangeable blocks for the form or pattern; Fig. 6, the manner of combining such blocks; and in Figs. 7 and 8, the arrangement of a fan on the cutter-spindle.

This invention relates to an improvement in the machine patented to me November 23, 1869, the object being chiefly to adapt the machine to various kinds of work, and particularly to that of carving.

The invention consists, first, in combining with the cutter-shaft, arranged upon a swinging or double-jointed arm, a guide or governing point, arranged so that the movement of the said point over an uneven surface governs the cutter so as to cause a similar surface to be dressed; second, in the construction of a form for paneling or molding purposes, of many parts, within a single clamp, and also combining a fan with and directly upon the cutter-shaft, constructed and revolving so as to direct a strong current of air onto the cutter, to throw the chips from its path.

A is the table, supported in like manner as in my original machine. B is a vertical driving-shaft, upon which is arranged a double or jointed arm, C D, so as to swing over the table, in the head of which is arranged a cutter-shaft, *a*.

Upon one side of the machine I arrange a frame, E, with a mandrel, *f*, above and *e* below, constructed so that the upper mandrel will support a pattern, F, and the lower the material G to be carved, corresponding to the pattern F. The two mandrels are governed, to be kept in a proper relative position, by means of a vertical shaft, *g*, with a worm working into a gear on each of the mandrels. The cutter-spindle swings within the frame between the pattern F and work G; and attached to

the carriage which supports the cutter-shaft is a guiding-point, *d*, in direct line with the axis of the cutter. The carriage which carries the cutter-spindle is made to move freely up and down, and supported up by a spring, *n*; hence, when the cutter is moved into the frame and over a block, G, to be wrought, it is pressed down until the point *d* strikes the pattern, then moved over the surface of the pattern, following its irregularities. The block is cut accordingly, so that, whatever the shape of the pattern F, the block G will be cut to correspond. A reverse of the form is produced by inverting the point *d* to work upon the under side of the form.

As the cutter is swung from right to left to dress the surface of the block G, in order to control the cut, I arrange a segmental rack, H, (see Figs. 1 and 3,) and fix a dog, *h*, on the lower end of the intermediate shaft, so that, as the part C is swung around, the dog will operate in the teeth of the said rack—as, for instance, starting in the position seen in Fig. 3, as the arm D is drawn out the dog will fall into each tooth of the rack; therefore, one cut being taken in one tooth, a second cut may be made in the next tooth, and so on, thus leaving the operator, while the cutter is at work, only to control the swinging of the cutter from right to left.

In some classes of work it may be desirable to incline the frame which supports the work. I therefore pivot the frame at *m*, (see Fig. 2,) so that it may be swung from right to left, and secured by a pin or set-screw, *r*.

When used for molding or paneling, a form is required, as shown in my original patent, and, in order to make an adjustable and variety form, I construct several blocks, say of two different forms, (denoted in Figs. 4 and 5,) and these blocks I combine within a frame, as seen in Fig. 6, making a variety of forms from the same shaped blocks, as denoted by the four different sides in Fig. 6. To secure these blocks together I make a universal clamp, formed from two L-shaped parts, P, slotted and secured together by screws or bolts S. By means of the slots the clamp may be extended or contracted, as required; and this form is placed over the work and applied in like manner as in my original machine.

To throw the chips from the cutter it has

been usual to direct a wind-pipe onto the cutter to blow the chips away, the wind being supplied independently of the cutter. To do this direct by the cutter-spindle, and without additional power, I arrange a fan, *b*, upon the cutter-shaft, directly above the cutter, as seen in Figs. 7 and 8, the blades of the fan curved, so as to direct the air upon the cutter, and with sufficient force to throw the chips therefrom.

I claim as my invention—

1. In connection with the swinging frame C

D, the arrangement of the toothed segment H and dog *h*, constructed so as to operate in the manner specified.

2. The arrangement upon the cutter-spindle of a fan, fixed upon the said spindle so as to revolve therewith, with the blades constructed to direct a current of air onto the cutter in the manner described.

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Witnesses:

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