

W. H. CLARK, A. O. KITTREDGE & W. J. CLARK.
Machines for Marking Lines of Bend of Sheet-Metal
for Moldings.

No. 153,888.

Patented Aug. 11, 1874.

Fig. 1.

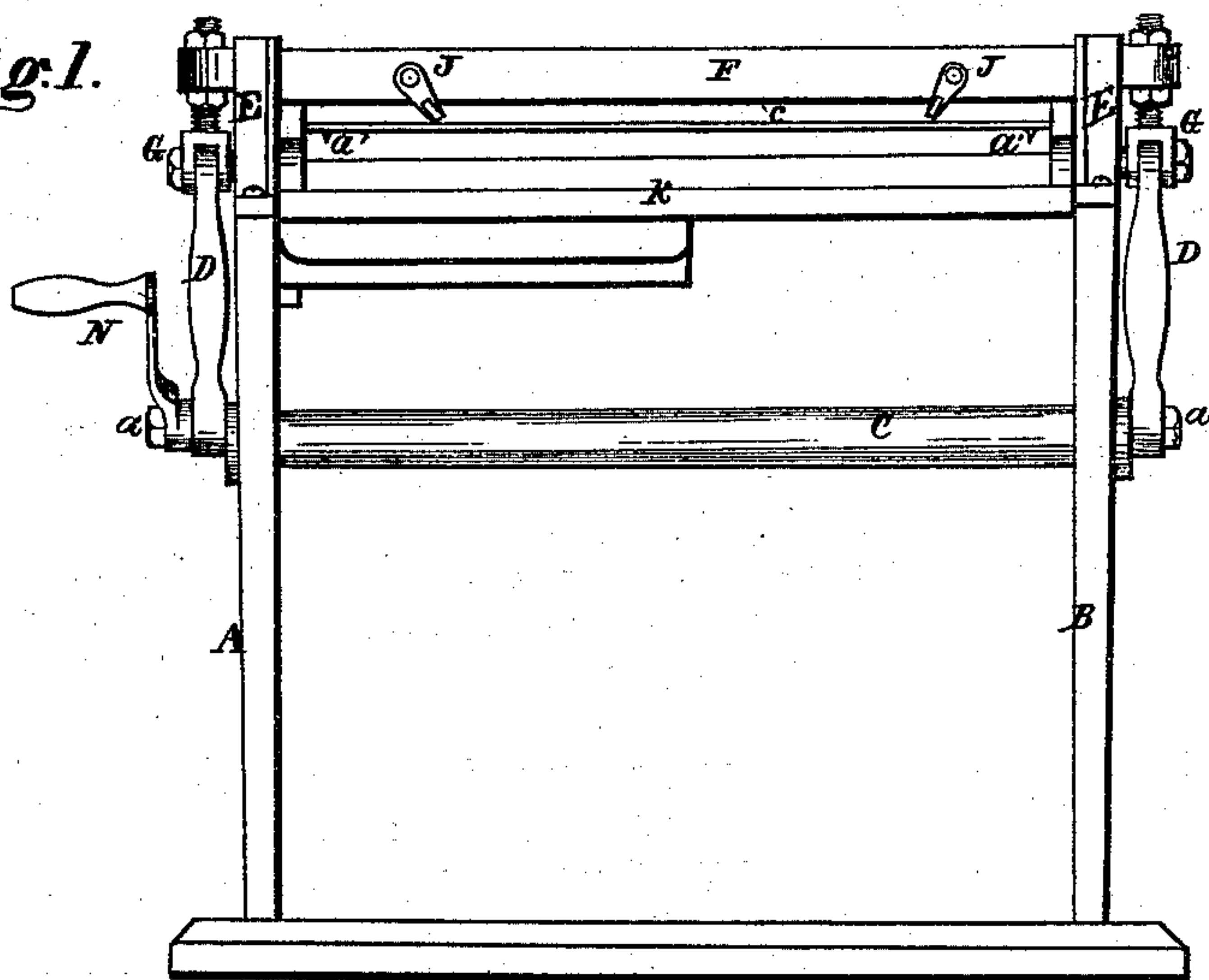


Fig. 4.

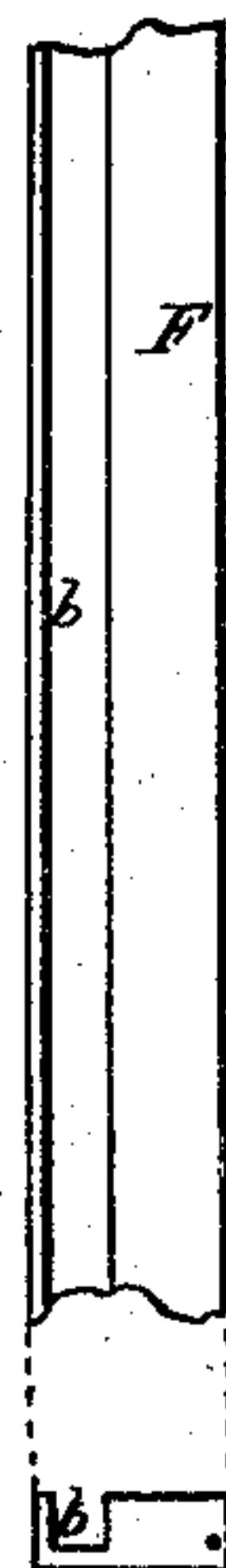


Fig. 2.

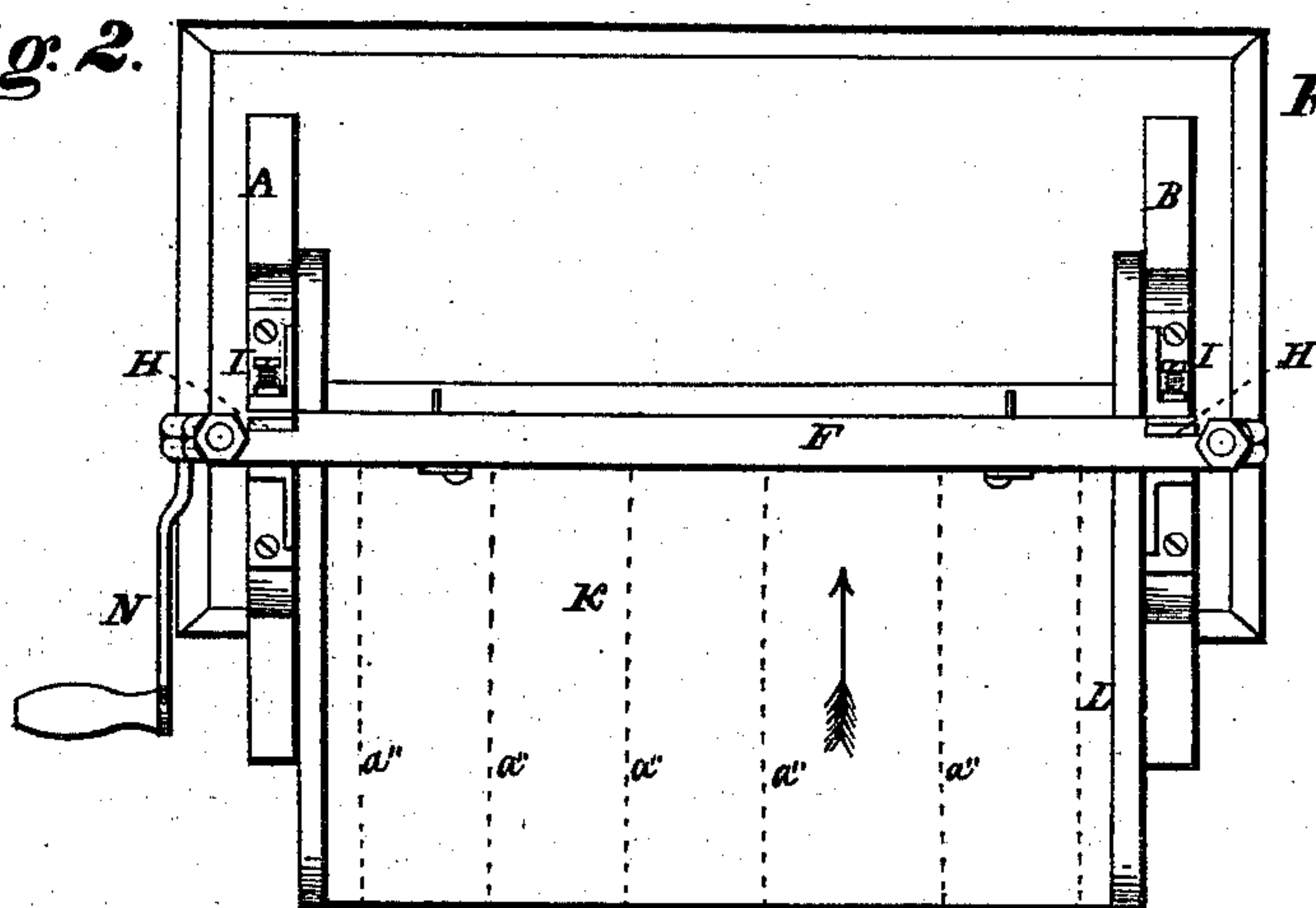
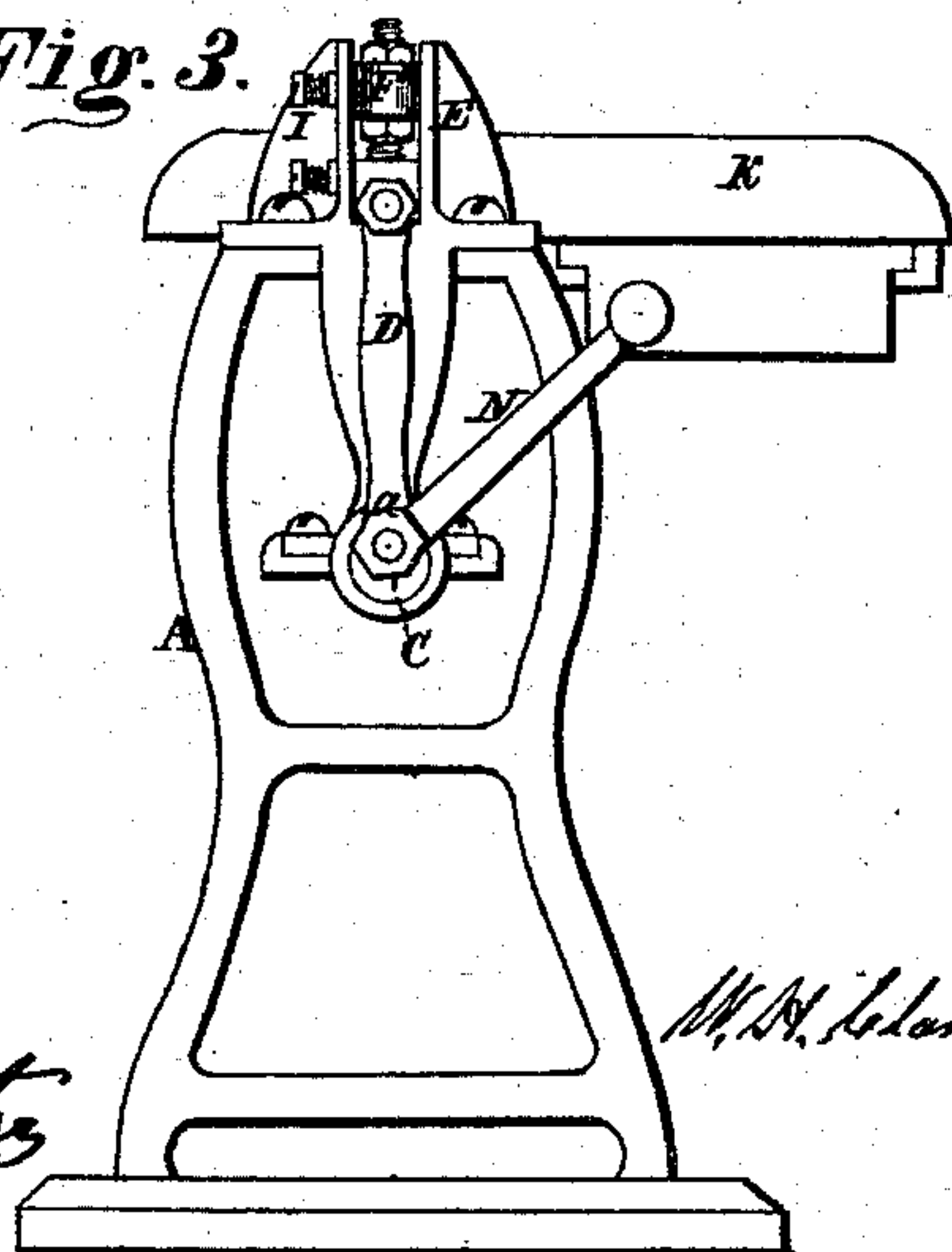


Fig. 5. Fig. 6.



Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN MACHINES FOR MARKING LINES OF BEND OF SHEET METAL FOR MOLDINGS.

Specification forming part of Letters Patent No. **153,888**, dated August 11, 1874; application filed
May 4, 1874.

To all whom it may concern:

Be it known that we, WILLIAM H. CLARK, ANSON O. KITTREDGE, and WILLIAM J. CLARK, of Salem, in the county of Columbiana and State of Ohio, have invented a certain new and Improved Machine for Marking and Laying out Sheet Metal for Moldings, &c.; and we do hereby declare that the following description is full, clear, and complete, reference being had to the accompanying drawings making part of the same, in which—

Figure 1 is a front elevation of the machine. Fig. 2 is a plan view. Fig. 3 is an end elevation. Figs. 4, 5, and 6 are detached views.

Like letters of reference refer to like parts in the several views.

This invention is for laying out the working lines on sheet metal, whereby to form the moldings for cornices, &c., so that the same style of moldings made on different sheets of metal shall be exactly of the same size, in order that the several lengths of moldings when joined together shall have a close fitting relation, and thus obtain a uniformity and exactness of the work when completed.

Of the construction and operation of the machine the following is a detailed description: In the frames A B is journaled a shaft, C. From each end of the shaft and eccentric to its axial line projects a wrist-pin, to which is attached a pitman, D, secured thereto by a nut, *a*. In the upper part of the frames A B is fitted, in the ways E, a beam, F, which is made to slide therein, reciprocally, in a vertical direction by the pitmen D, attached thereto by means of stays G, as shown in Fig. 1. H, Fig. 2, are compensating plates, against which one side of the ends of the beam slide, and which are adjusted thereto as often as the ends become worn away and loose by the adjusting-screws I. Along the lower edge of the beam F, above referred to, is formed a groove, *b*, Fig. 4, which represents a detached view of the same. In said groove is fitted a fillet, *c*, Fig. 1, a detached view of which is shown in Fig. 6. Said fillet is retained in the groove by the buttons J. The purpose of the fillet will hereafter be shown. Lengthwise on the lower side of the grooves, which, in part,

form the lower side of the beam, are made two or more series of holes, *e*, Fig. 5. A few only of the holes are shown, which will be sufficient to illustrate the fact. Said figure represents the under side of the beam, having two rows of holes therein, which, as will be observed, are so disposed in relation to each other that the holes in one row alternate with those in the corresponding one, the purpose whereof will presently be shown. In the holes referred to are inserted pins or pricks *a'*, Fig. 1, more or less in number, according to the number of marks or moldings to be worked in the sheet of metal. On forming moldings in broad sheets of metal it is a matter of importance that each member composing the piece should be exactly parallel one with the other. To this end great care is taken to draw the lines across the sheet in such proper parallel relation that when the sheet is subjected to the bending machine for forming the composition of moldings the whole shall be parallel from end to end, and of a uniform size.

This exactness is more particularly necessary when several sheets of metal are required of which to form a given length of molding, so that when they are joined together to make up the length required the several sections shall closely fit and correspond in size throughout. This lineal work is usually done by hand with a rule and straight edge, the rule to obtain the relative distances of the lines, and the straight edge to draw them. One sheet, when properly laid out and pricked, is used as a templet or pattern for marking out all subsequent ones of that style, which requires much time and care. Notwithstanding the care exercised in laying out work it is often at fault, more especially so when there is a large number of sheets to be laid out, thereby causing much trouble and delay in the progress of the work and in fitting the ends of the several sections together. To avoid this trouble and delay and to facilitate this part of the work is the purpose of this machine.

The operation of which is as follows: In the holes *e*, referred to in the bottom of the beam, are inserted the punches or pricks *a'*,

referred to, more or less in number, according to the number of the members of which the molding is to be composed, and at such distances from each other as the size of each member may demand—as, for instance, one inch, two, three, four, &c., or such fractions thereof as may be required.

In order to obtain slight degrees of variations or fractions in the distances is the purpose of having two or more rows of alternating holes, which will allow the pricks to be arranged closer to each other than they could be if only one series of holes was used. The pricks are inserted in the holes from above through the groove, but which cannot fall through them, as the pricks are headed. They are prevented from being pushed upward by the fillet *c*, now inserted in the groove over the heads of the pricks, and therein retained by the buttons *J* aforesaid. The pricks when inserted in the beam in the manner as above described, and in the order that the nature of the work may require—viz, size and number of the members of the molding—a sheet of metal is then laid upon the table *K* with one edge against the side *L* of the table, which has a right-angled relation to the beam. Now, on pushing the edge of the sheet along under the beam, holes will be punched therein by the pricks projecting from its under side by causing the beam to descend by operating the crank *N*. The punctures are made only along each end of the sheet in direction of the beam for bending the sheet in direction of the dotted lines *a''*, Fig. 2. The distance that the punctures are apart will depend upon the numbers of the members which the molding is to bear, according to which the pricks have been previously adjusted. The number of the punctures in each end need be but one for each of the lines, as above said, which will be sufficient to indicate where the sheet is to be bent to form each member of the molding, and which bending is done in direction of the dotted lines from edge to edge.

It will be obvious that by the use of this machine the labor of laying out the lines on the face of the sheet, by the use of a rule and straight-edge, or by means of a templet, is dispensed with, and the work greatly facilitated, and done with more exactness by the use of this machine, for that part of the work is done by adjusting the pricks in the beam,

by shifting them from one hole to another, as the nature of the molding may require. The only care necessary to be observed is to keep one edge of the sheet close against the raised side of the table, so that the beam shall maintain a right-angled relation to such edge.

By the use of this machine it must follow that any number of sheets operated on by it must be exactly alike in the matter of laying out the working-lines upon them, so that the fitting together of the several pieces to make up the length of the molding will be easily done, thereby saving much time and labor in this part of the work, as well as time and labor in laying it out, which, when done in the ordinary way, requires the labor of two workmen, whereas one man can do the same work by using this machine, and do the work with greater accuracy.

The iron surface of the table immediately under the beam is inlaid with some soft metal. The inlay may be of some hard wood, the purpose whereof is to prevent the points of the pricks which pass through the sheet from becoming blunted by striking on the iron bed below, the inlay being of sufficient strength to resist the pressure of the sheet when pressed down upon it in the act of pricking out the work. In place of an inlay of soft metal or wood, grooves or holes can be made in the bed under the beam to receive the points of the pricks.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In combination with the horizontal grooved beam *F*, provided at the bottom of the groove with two or more longitudinal rows of small holes, the fillet *c*, buttons *J*, and mechanism for reciprocating said beam vertically, substantially as and for the purpose set forth.

2. The frames *A B*, shaft *C*, pitman *D*, and nut *a*, in combination with stays *G*, compensating-plates *H*, adjusting-screws *I*, beam *F*, fillet *c*, buttons *J*, pricks *a'*, and the table *K*, all constructed and arranged as and for the purpose set forth.

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Witnesses:

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