

(No Model.)

2 Sheets—Sheet 1.

M. T. DURKIN.
METAL FORMING MACHINE.

No. 407,516.

Patented July 23, 1889.

Fig. 1

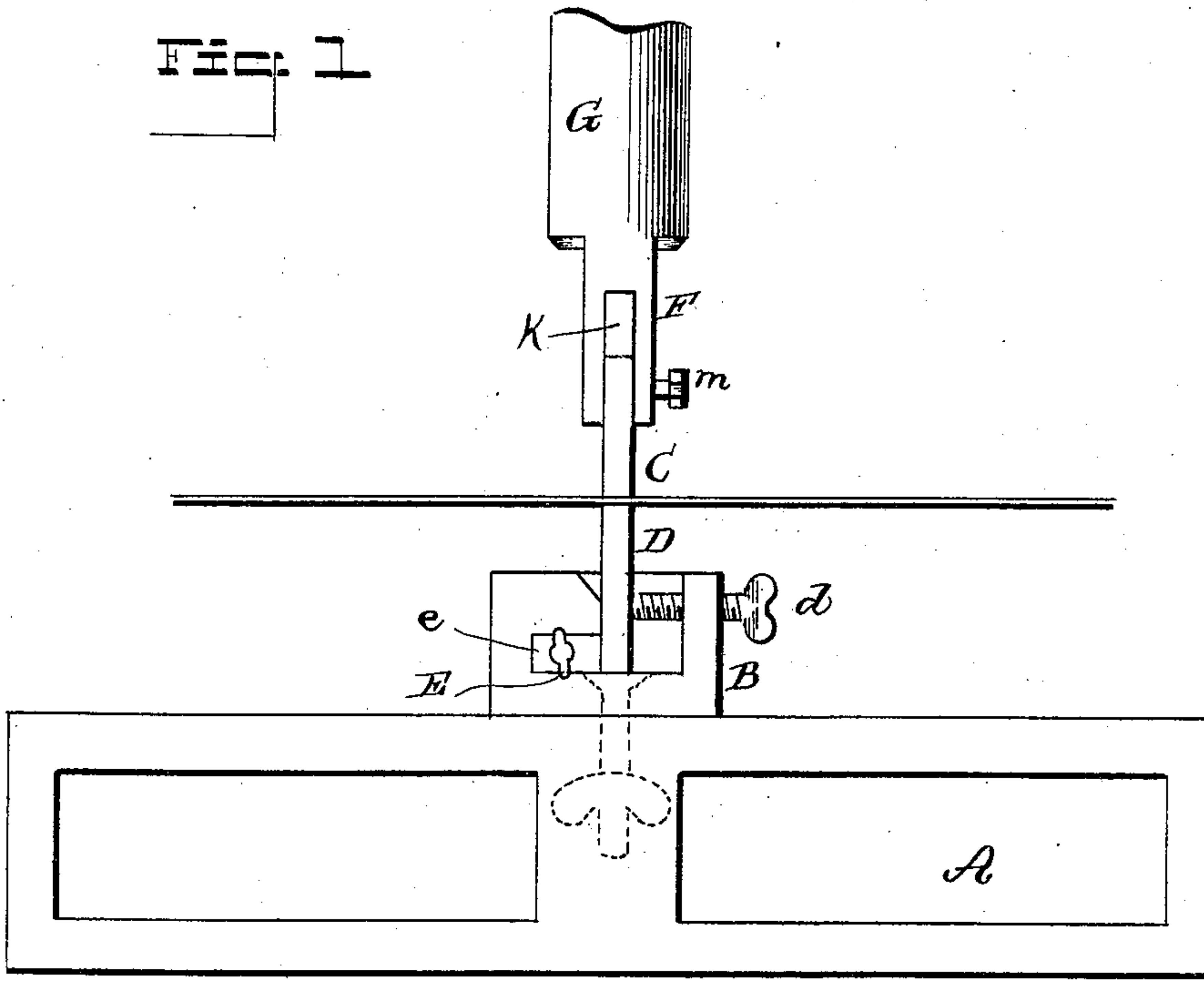
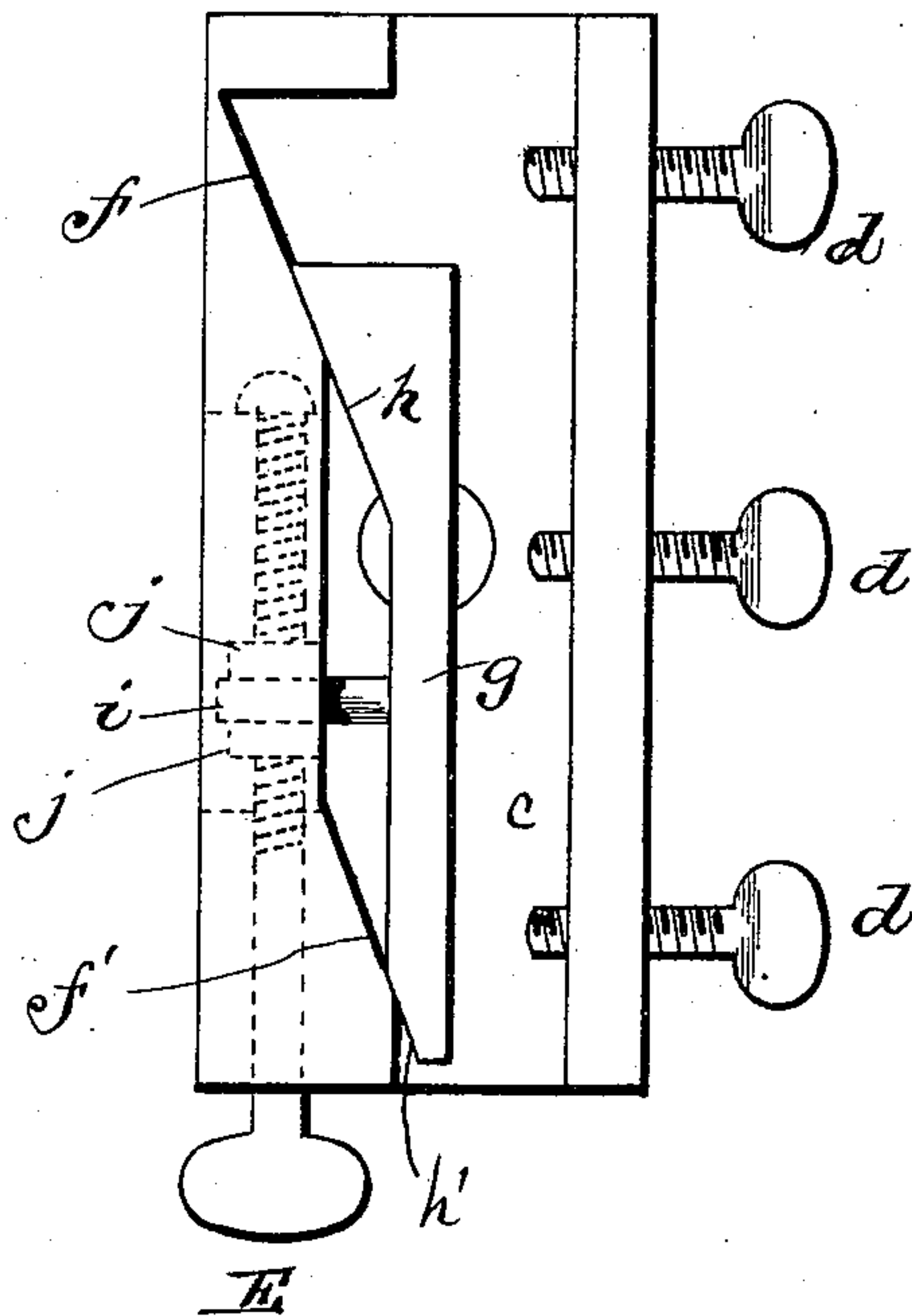


Fig. 2.



WITNESSES:

D. D. Mott
E. Sedgwick

INVENTOR:

M. T. Durkin

BY

Munn & Co.

ATTORNEYS.

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Fig. 3.

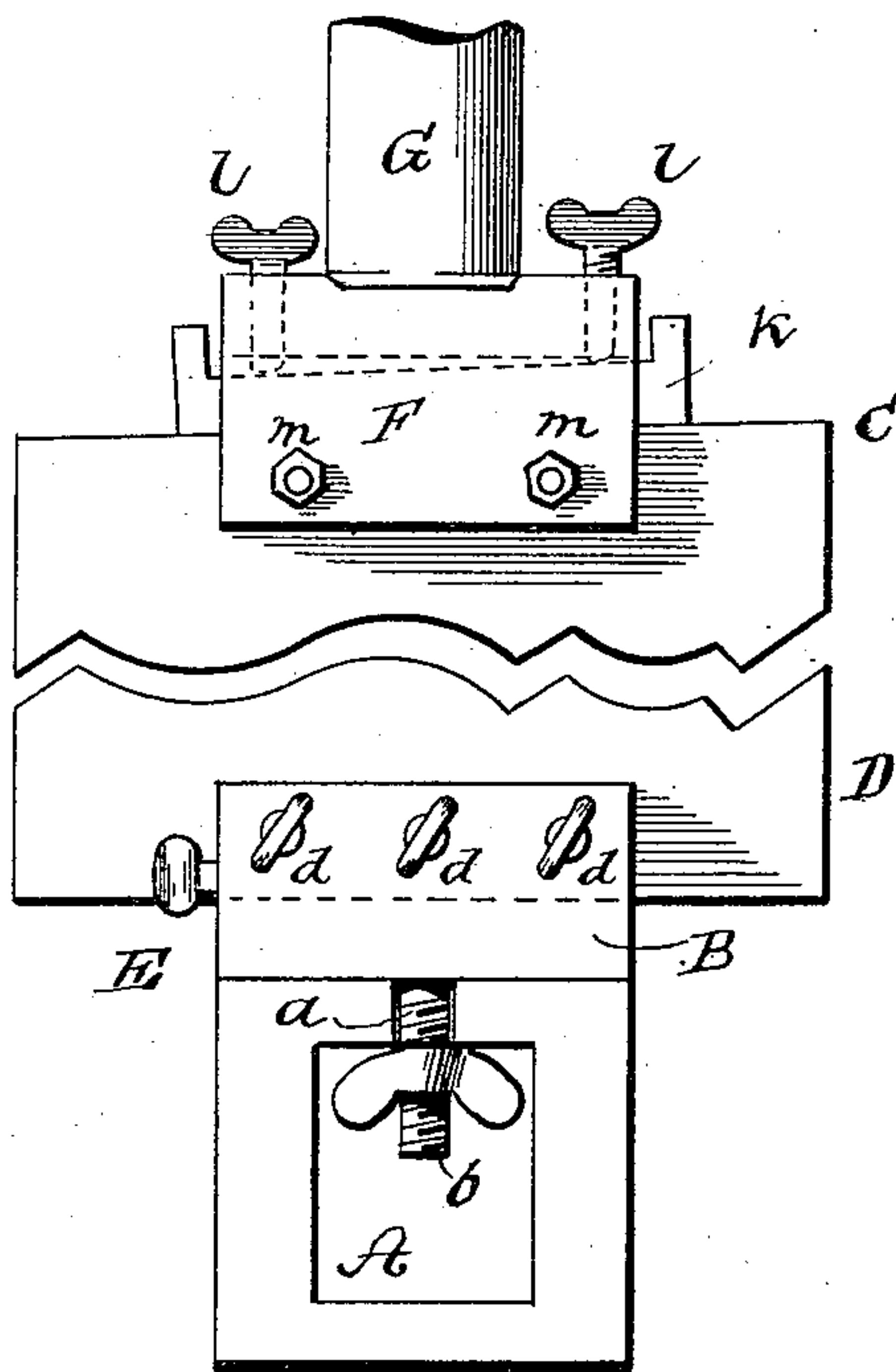
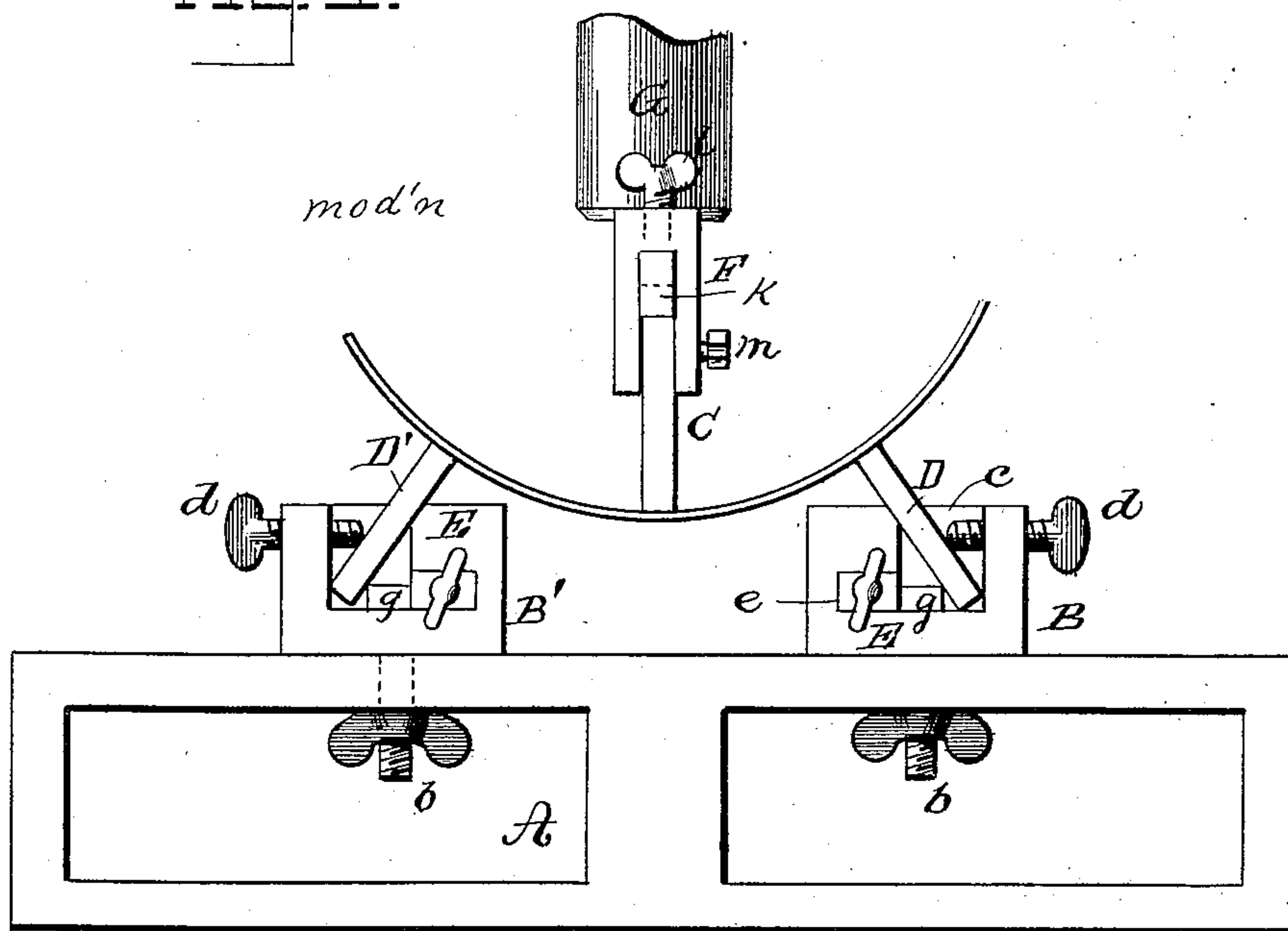


Fig. 4.



WITNESSES:

D. W. Mott
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INVENTOR:

M. T. Durkin

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UNITED STATES PATENT OFFICE.

MICHAEL T. DURKIN, OF BROOKLYN, NEW YORK.

METAL-FORMING MACHINE.

SPECIFICATION forming part of Letters Patent No. 407,516, dated July 23, 1889.

Application filed April 19, 1889. Serial No. 307,729. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL T. DURKIN, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Metal-Forming Machine, of which the following is a specification, reference being had to the annexed drawings, forming a part thereof, in which—

Figure 1 is a front elevation of my improved metal-forming machine, showing it in operation with a single pair of dies. Fig. 2 is a plan view of the lower-die holder. Fig. 3 is a side elevation showing the upper and lower die holders; and Fig. 4 is a front elevation showing a single upper die and two lower dies in use.

Similar letters of reference indicate corresponding parts in all the views.

The object of my invention is to provide a simple and effective machine for forming sheet metal in the manufacture of cornices, moldings, balusters, &c.

My invention consists, mainly, in an arrangement of the die-holders by which the dies may be inclined at any desired angle and clamped firmly in the position of use.

In my specification I shall omit a description of the frame of the machine and of the mechanism for operating the movable die, as these parts are of the usual well-known construction. The bed-plate A, which forms a part of the press in which the dies are held and operated, is provided with a longitudinal slot *a*, through which extend the bolts *b* of the lower-die holders B B'. The upper die C and the lower dies D D' used in the machine consist of plates having formed in their edges the obverse and reverse outlines of the mold to be formed. The lower-die holders B B' are alike, but oppositely arranged with respect to each other. Each die-holder is provided with a longitudinal slot *c*, into which are inserted adjusting-screws *d* through one side of the holder.

At the bottom of the slot *c* is formed a lateral recess *e*, provided with inclined surfaces *ff'*, and in the slot is placed an adjusting-bar *g*, provided with inclined surfaces *h h'*, adapted to slide upon the inclined surfaces *ff'*. The bar *g* is provided with a slotted ear *i*, which extends outwardly through the

side of the holder between the inclined surfaces *ff'*.

In the die-holder is inserted a screw E, provided with nuts *j*, arranged upon opposite sides of the slotted ear *i*, so that when the screw is turned the ear *i*, and consequently the bar *g*, will be moved in one direction or the other, according to the direction of the rotation of the screw E. The die D is allowed to rest upon the inner corner of the die-holder, which is beveled, and also against the straight edge of the bar *g*, the die being held in place by the clamping-screws *d*, which press it forward against the corner of the die-holder and against the bar *g*.

The upper-die holder F is attached to the follower G of the press. It contains a gib *k*, which is adjusted by thumb-screws *l*, passing downward through the top of the die-holder F. In the side of the die-holder F are inserted clamping-screws *m*, which hold the upper die C securely in place.

In forming the molding the die C is arranged directly above one of the lower dies D D', the said lower die in that case being arranged perpendicularly to the bed-plate A, as shown in Fig. 1. After the molding is formed, if it is to be curved, the dies D D' are arranged in the manner shown in Fig. 4, being inclined toward the upper die F. The inclination of the lower dies is varied to accommodate them to the proper curvature by means of the adjusting-screw *d* and the screw E, in the manner above described. The molding is then passed between the upper and lower dies, while the upper die is reciprocated. In this manner the molding is readily brought to the required curvature.

Should some of the members of the molding be much heavier than others, it is necessary to tilt the upper die C, as shown in Fig. 3, so as to cause it to strike with more force upon the heavier side of the molding.

By varying the inclination of the dies D D' and by varying their distance apart the curvature of the molding may be varied as required.

The advantage claimed for my improved die-holders is, that they will hold the lower dies at any desired angle without any special fitting of the dies to the holders, and that the

dies may be adjusted at any desired angle in the die-holders without changing the position of the die-holders.

By means of two lateral lower dies arranged
5 on opposite sides of the path of the upper die, as shown in Fig. 4, the said lower dies may be brought near together, thus permitting of doing work of very small diameter.

Having thus described my invention, I claim
10 as new and desire to secure by Letters Patent—

1. In a metal-forming machine, the slotted die-holder D, provided with the lateral recess *e* and having inclined surfaces *f f'*, the bar *g*, having inclined surfaces *h h'* and pro-
15 vided with the slotted ear *i*, and the adjusting-screw E and nuts *j j*, substantially as specified.

2. In a metal-forming machine, a slotted die-holder D, provided with a lateral recess *e* and having inclined surfaces *f f'*, the bar *g*,
20 having inclined surfaces *h h'* and provided with the slotted ear *i*, the adjusting-screws E, nuts *j j*, and the screws *d d*, substantially as specified.

3. In a metal-forming machine, the die-
25 holder F, provided with the gib *k* and the adjusting-screws *l*, substantially as specified.

MICHAEL T. DURKIN.

Witnesses:

C. E. HOLSKE,
C. SEDGWICK.