

No. 685,078.

Patented Oct. 22, 1901.

G. WILLRINGHAUS.  
TOOL MAKER'S CLAMP.

(Application filed Jan. 22, 1901.)

(No Model.)

2 Sheets—Sheet 1.

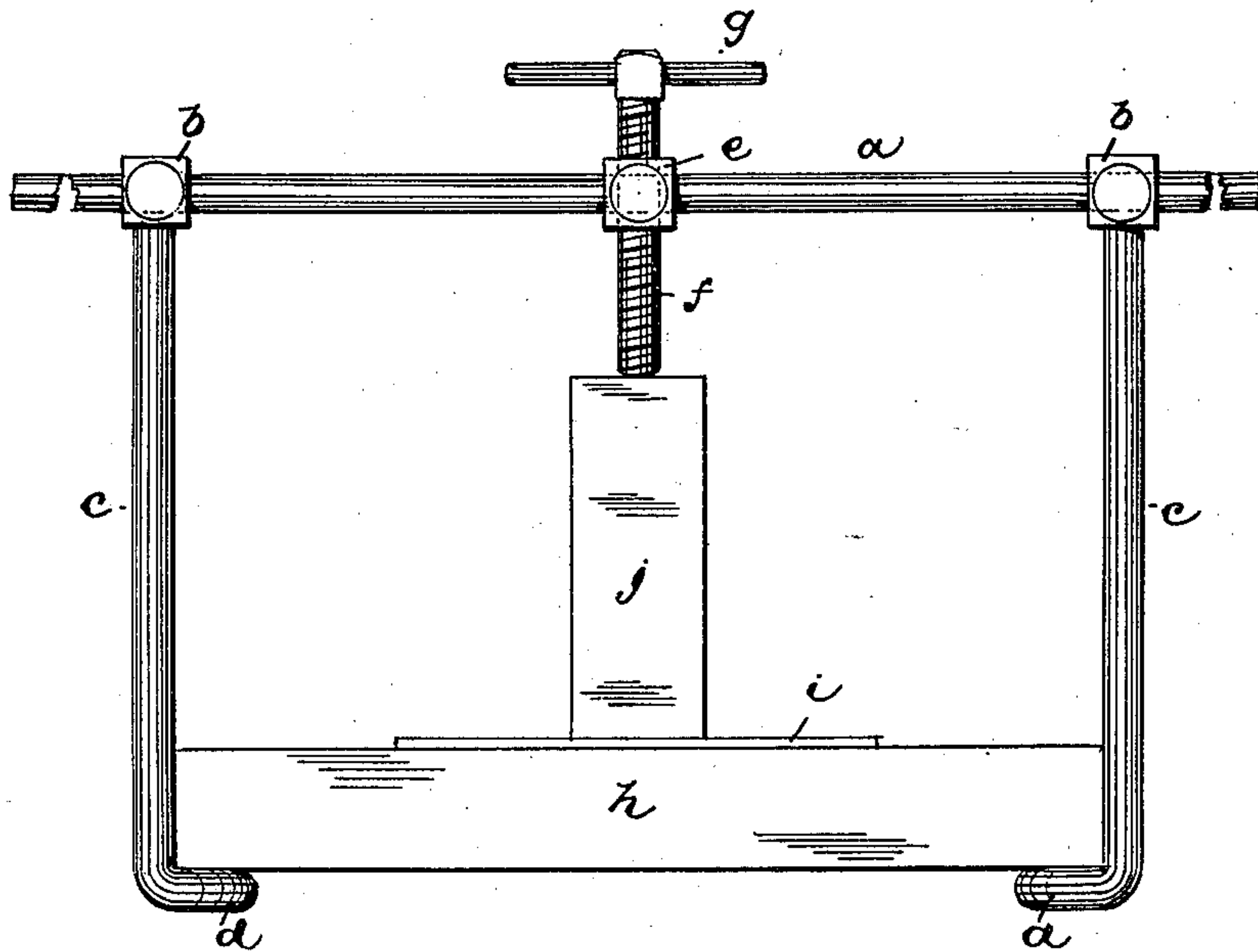


Fig. 1.

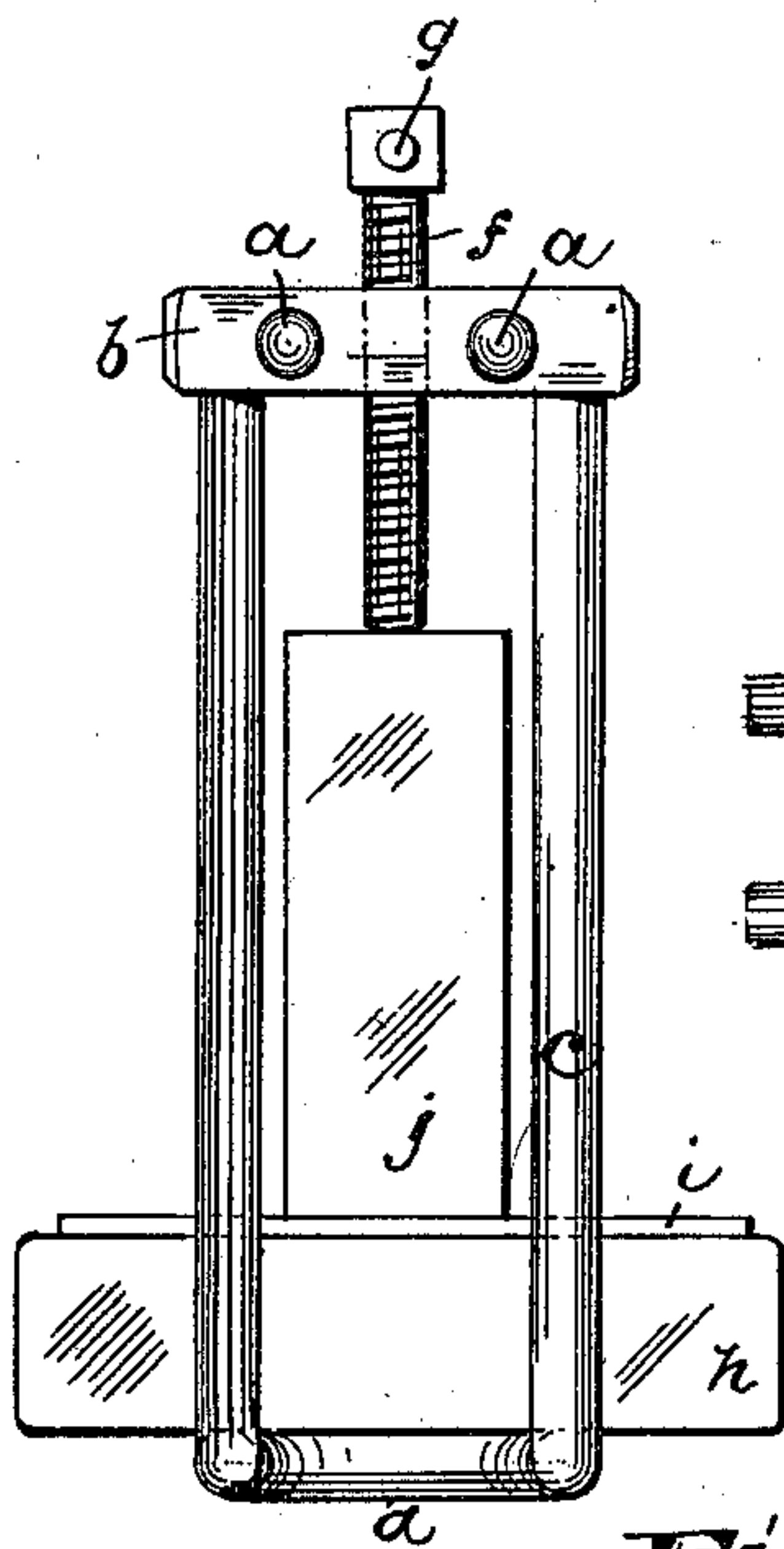


Fig. 3.

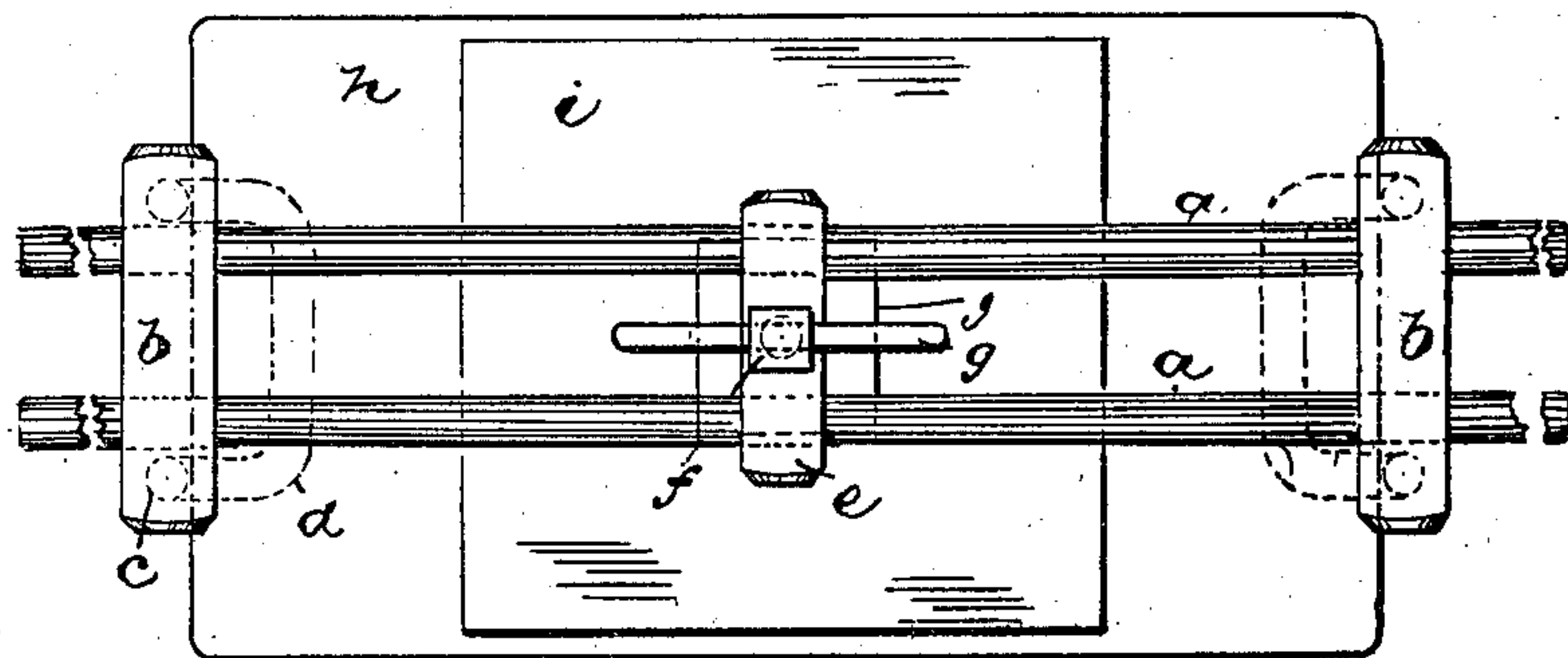


Fig. 2.

WITNESSES:

*Henry Krug*

*Russell M. Everett*

INVENTOR:

*Gustav Willringhaus*

BY

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ATTORNEYS.

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2 Sheets—Sheet 2.

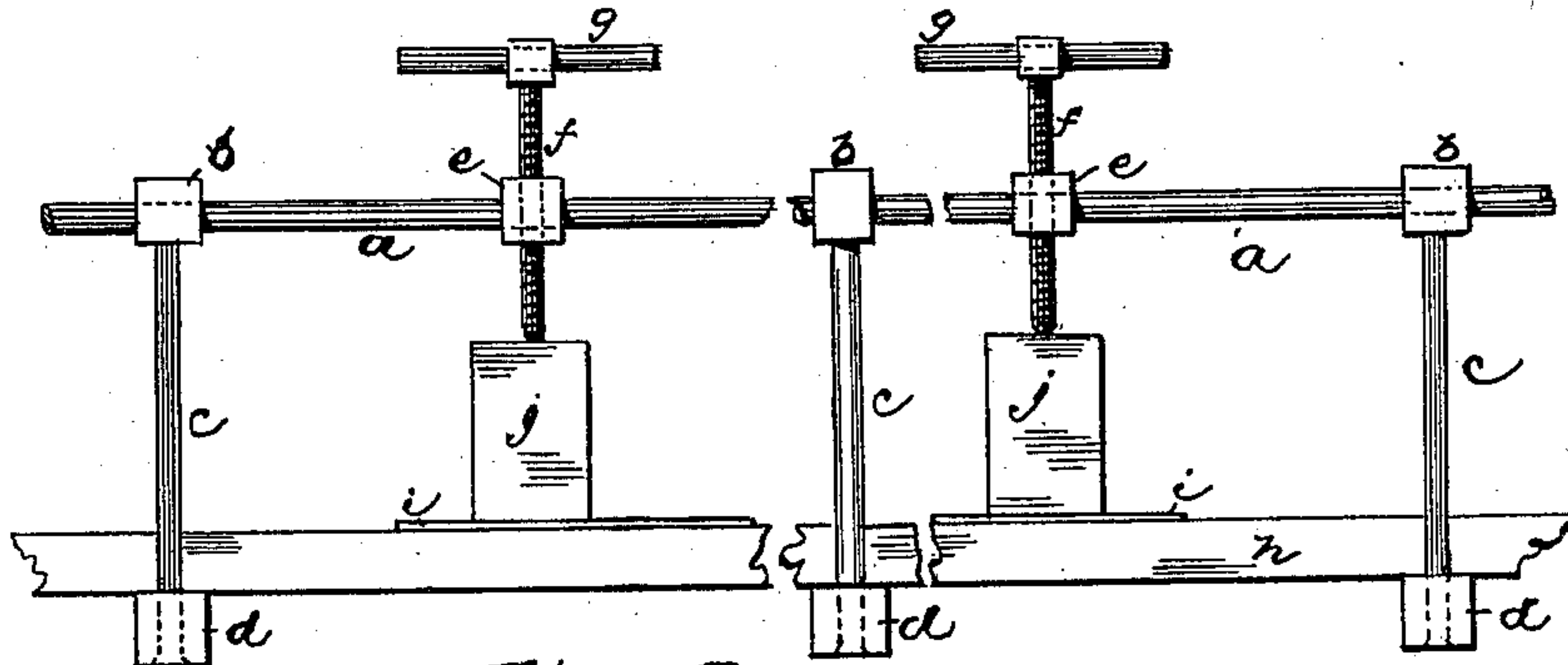


Fig. 4.

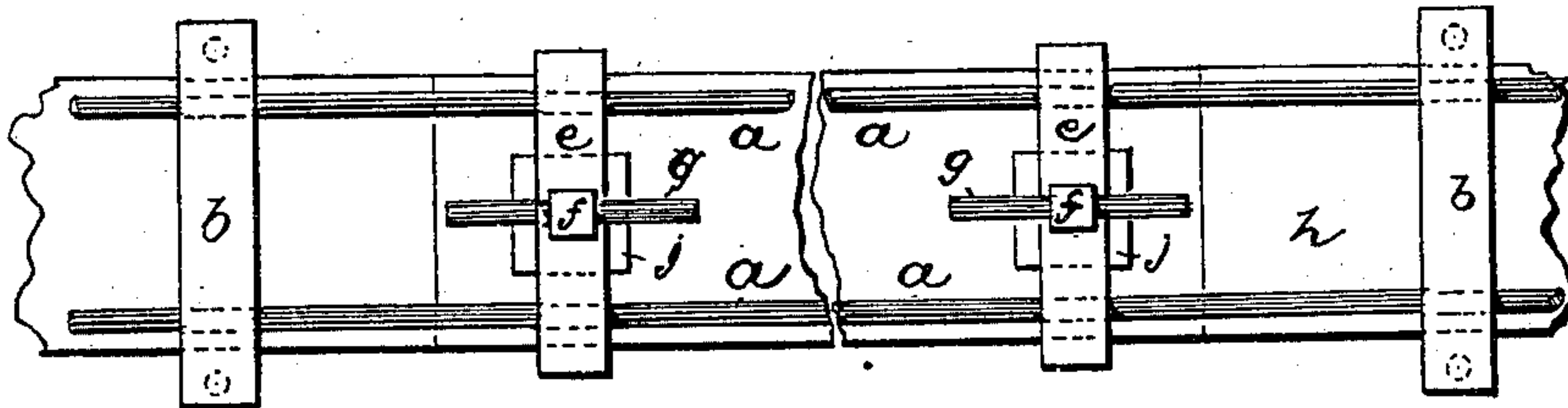


Fig. 5.

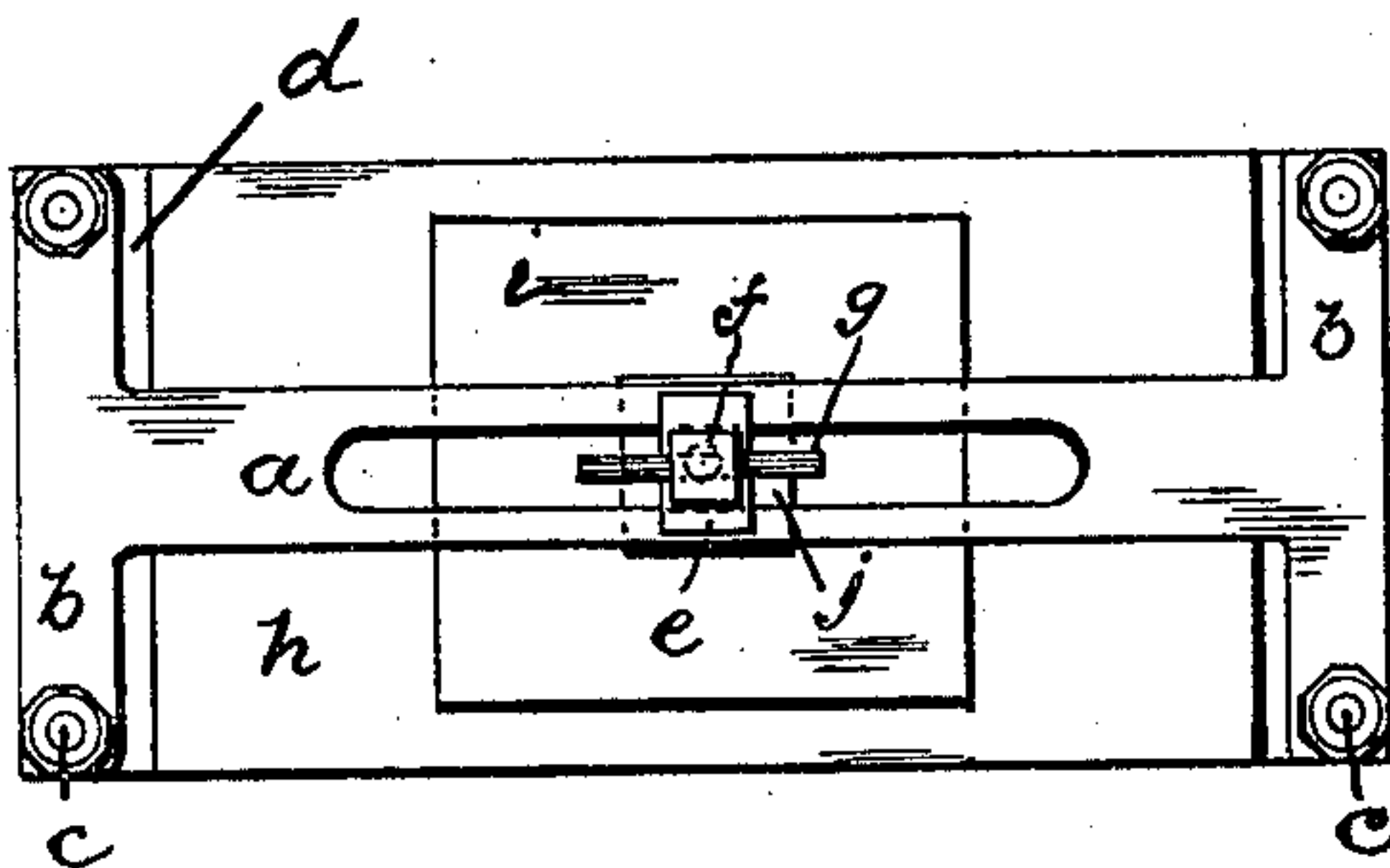
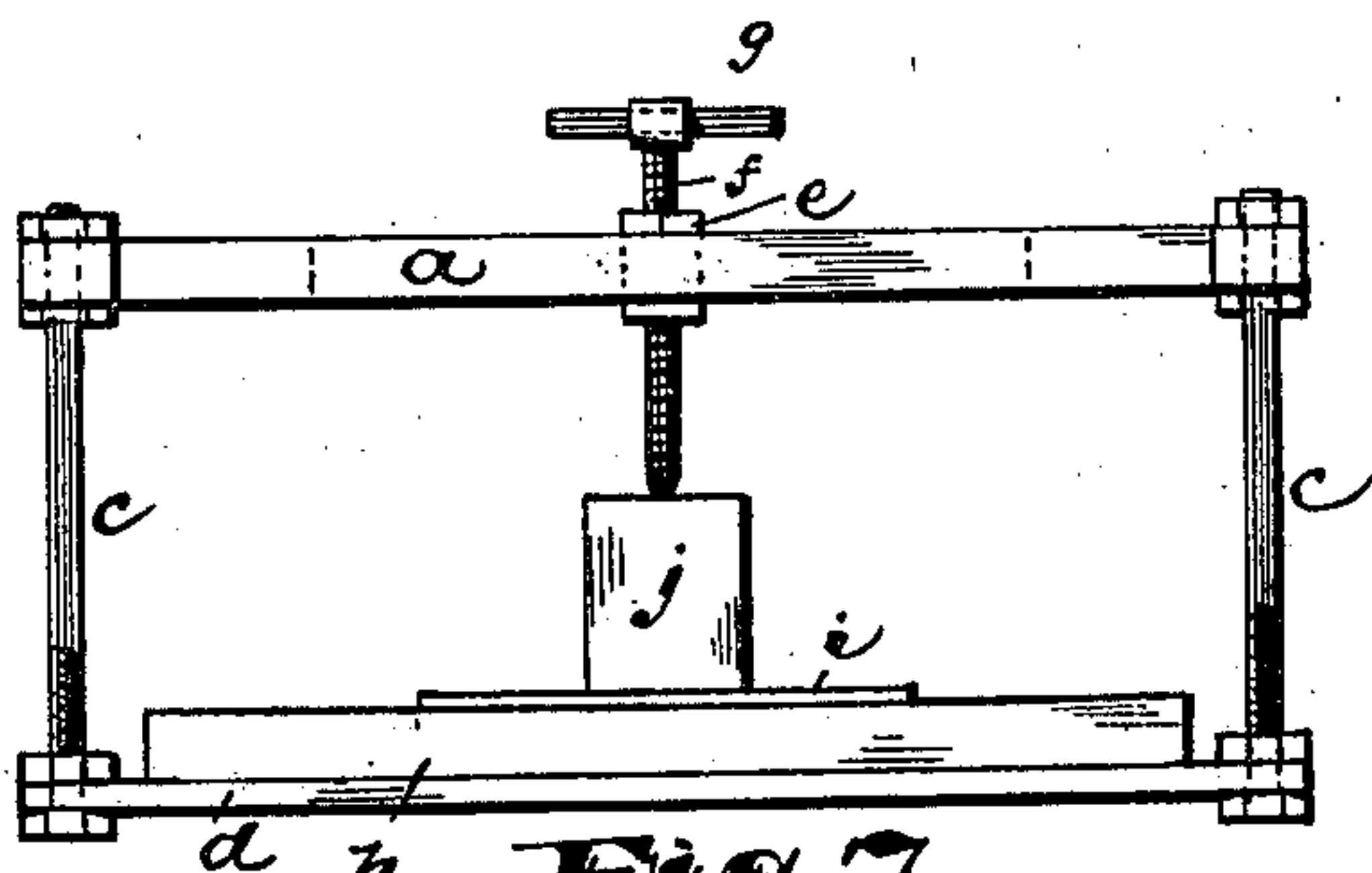


Fig. 6.



WITNESSES:

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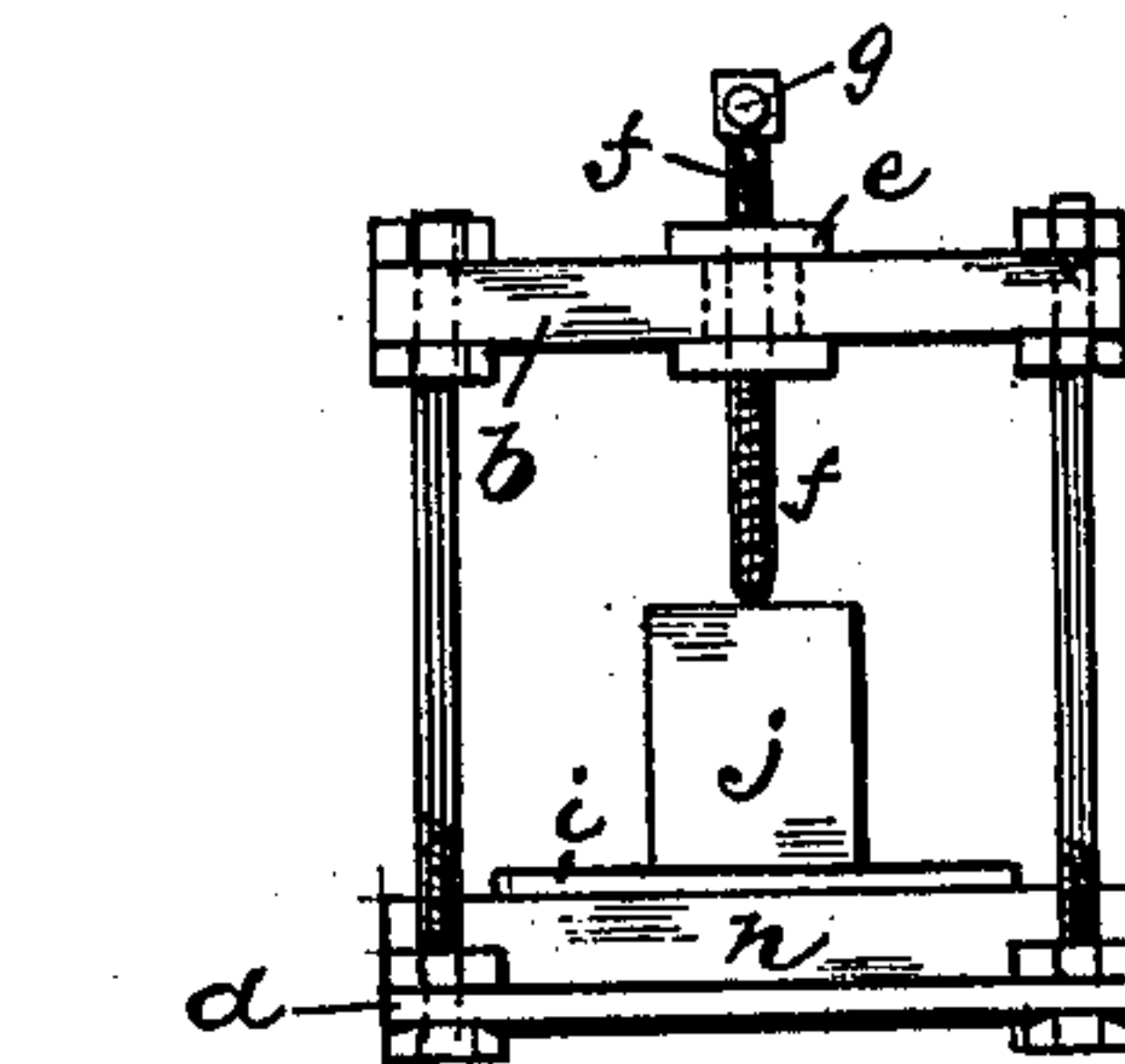


Fig. 8.

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# UNITED STATES PATENT OFFICE.

GUSTAV WILLRINGHAUS, OF NEWARK, NEW JERSEY.

## TOOL-MAKER'S CLAMP.

SPECIFICATION forming part of Letters Patent No. 685,078, dated October 22, 1901.

Application filed January 22, 1901. Serial No. 44,268. (No model.)

*To all whom it may concern:*

Be it known that I, GUSTAV WILLRINGHAUS, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Tool-Maker's Clamps; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The objects of this invention are to facilitate the operation of marking off or planing work preliminary to cutting or piercing dies, to secure a greater exactness of work, to avoid the loss incident to the methods heretofore employed, and to secure other advantages and results, some of which may be referred to hereinafter in connection with the description of the working parts.

The invention consists in the improved tool-maker's clamp and in the arrangements and combinations of parts of the same, all substantially as will be hereinafter set forth, and finally embraced in the clauses of the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several views, Figure 1 is a front elevation of the improved clamp in its preferred form. Fig. 2 is a plan of the same. Fig. 3 is an end view thereof. Figs. 4 and 5 are respectively a side view and a plan showing a modification of construction sometimes employed where a series of clamps are found desirable. Figs. 6, 7, and 8 are respectively a plan, side elevation, and end view of another modification of construction which may be employed effectively.

In said drawings, *a a a* indicate two parallel bars having thereon end pieces, which are preferably slides *b b*, adapted to be moved toward or from one another oppositely with convenience to enable the clamp to be adjusted to the desired work. From said end pieces or slides, which serve to hold the parallel rods in proper relative position apart, are depending legs *c c*, having feet *d* at their lower extremities. Said legs are each pref-

erably formed of a single piece of metal rod bent U shape, the upper extremities entering the slides *b* and being securely held therein in any suitable manner. The bowed part of the legs, at the lower ends thereof, are bent inwardly or horizontally toward one another, as shown in Fig. 1, to form seats or bearings upon which the die-plate may be seated at its opposite ends. Intermediate of said legs *c c* and adjustable on the rods *a a* is another slide *e*, which also extends from one rod *a* to the other, and intermediate of its length the said slide *e* is perforated and threaded to receive a clamping-screw *f*. Said clamping-screw at its upper end is provided with wings *g* or other means to receive the band and enable said screw to be conveniently turned to clamp the pattern or blank *i* against the die-plate *h*, as will be hereinafter described.

I may vary the construction, as indicated in Figs. 4 to 8, by extending the length of the clamp, and instead of forming the legs *c* each of a single piece the said legs may be formed of three or more pieces, as in Figs. 4 and 5, where the said legs consist of two downwardly-extending rods joined at their lower extremities by footpieces, which extend from one leg to the other, being held thereon by nuts or by any suitable means. In this case the clamp is provided with two or more adjustable clamping-screws *f*, arranged between the legs, as shown. I may dispense with the two separate horizontal rods at the top and form the slideway of a single piece of metal slotted, as shown in Figs. 6, 7, and 8, and provided with integral end pieces to receive the legs, and various other modifications may be made without departing from the spirit or scope of the invention; but in ordinary practice I prefer the construction first described, in that it is simple and cheap.

In operating the device, the legs *c* and clamping-screw *f* being properly adjusted on the slideways to suit the desired work, the die-plate *h* is seated upon the feet *d* between the legs *c c*, as shown, and a pattern or blank *i* is laid therein, and the space between the screw *f* and the blank *i*, should there be any, is taken up by a block *j*, which is laid upon the pattern or blank beneath the screw *f*, after which the said screw is turned so that



the said blank or pattern will be rigidly and securely clamped in its relation to the die-plate *h*. This having been accomplished, the outlines of the desired cutting or engraving are marked off on the die-plate by means of a tool, scratch-awl, scriber, file, or other implement, and in performing this work there is no danger of the pattern shifting from its position, so that the described outlines are rendered erroneous. This scribing can be repeated two or more times without any danger of shifting, so that the workman can obtain a good sharp outline to work from.

The die-plate *h*, having received the outline or plan, may be removed from the clamp and cut out and the die completed, and a second member of the die is laid out from the first. To secure said second die, the plate *h* is again inserted in the clamp upon the feet or seats *d*, and the plate from which the said second die member is to be formed is laid thereon and clamped and held firmly in position by means of the screw *f*. The clamp may be then turned upside down and the outlines of the work laid out upon said second member, the workman scratching the second member from the bottom of the plate *h* through the perforation therein, and inasmuch as the two die members are rigidly clamped together by the screw *f* there is no danger of shifting in performing this second

operation, and thus the danger of imperfect work because of sliding is entirely eliminated.

Having thus described the invention, what I claim as new is—

1. The improved tool-maker's clamp, comprising parallel bars connected by sliding end pieces *b, b*, legs secured to said end pieces and having inwardly-projecting feet and an adjustable clamping-screw supported by said bars at a point between said legs, substantially as set forth.

2. The improved tool-maker's clamp, comprising parallel bars, slides arranged near the opposite ends of said bars and legs connected to said slides and formed of U-shaped rods bent inwardly at their lower parts to form feet, and a clamping device arranged between said legs, substantially as set forth.

3. The improved tool-maker's clamp, comprising parallel bars, adjustable legs arranged on said bars and having feet providing seats for the die-plate and clamping means interposed between the legs, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 5th day of January, 1901.

GUSTAV WILLRINGHAUS.

Witnesses:

CHARLES H. PELL,  
C. B. PITNEY.