

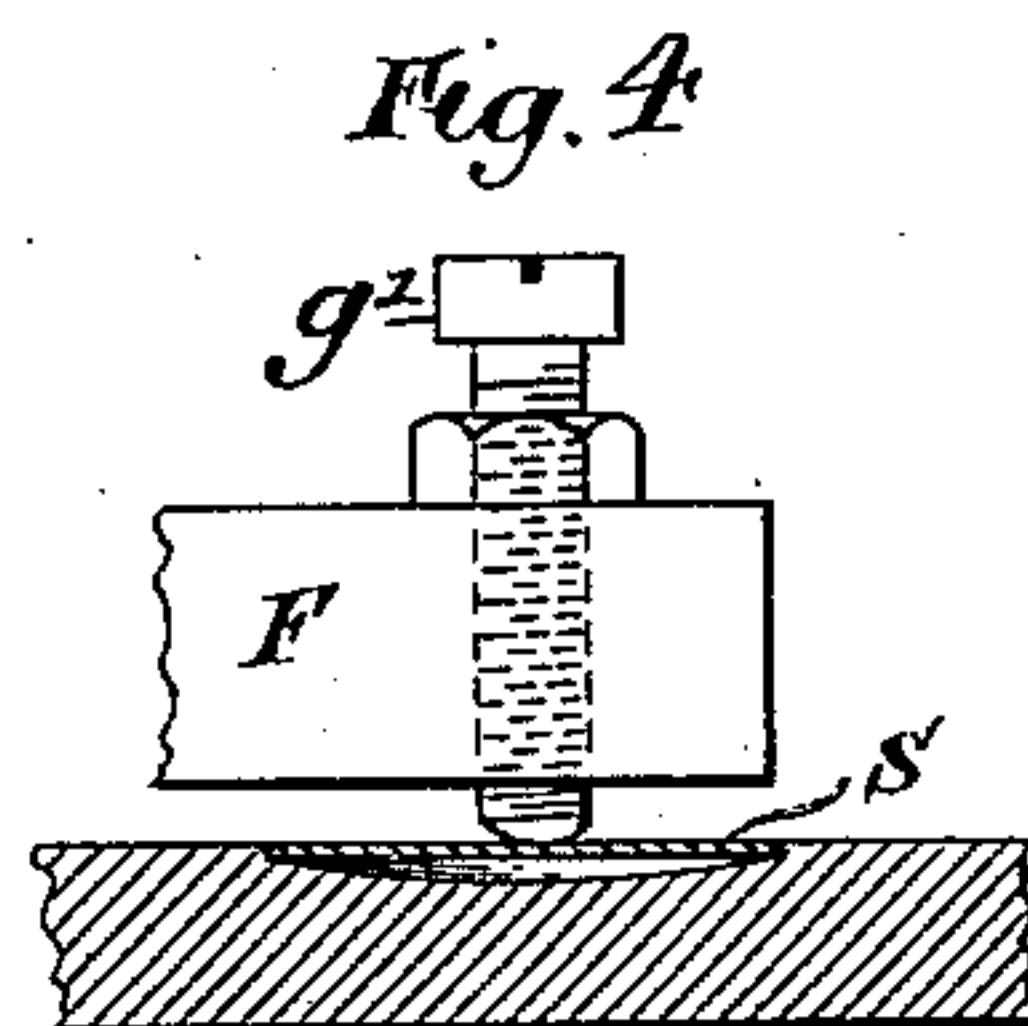
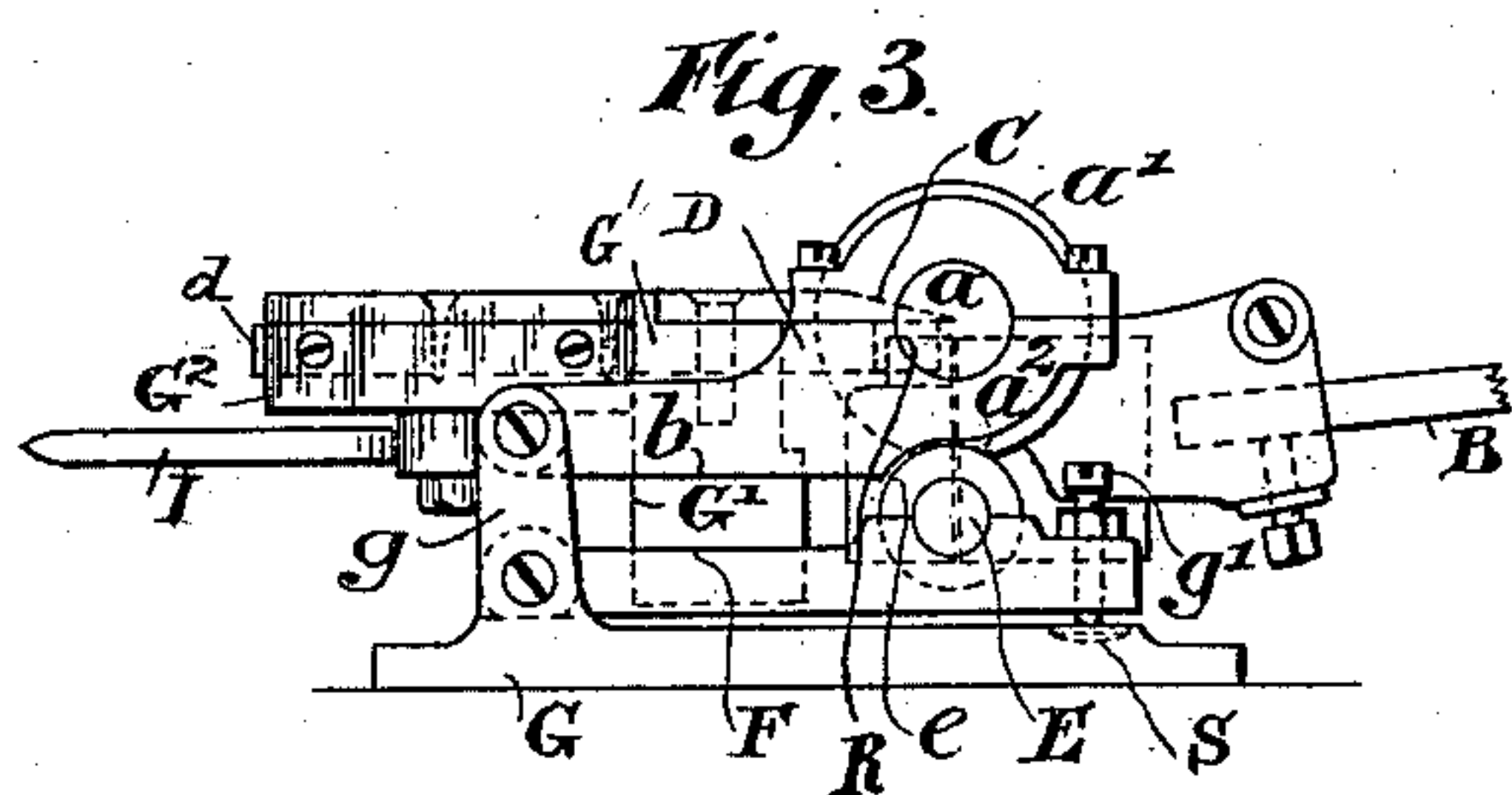
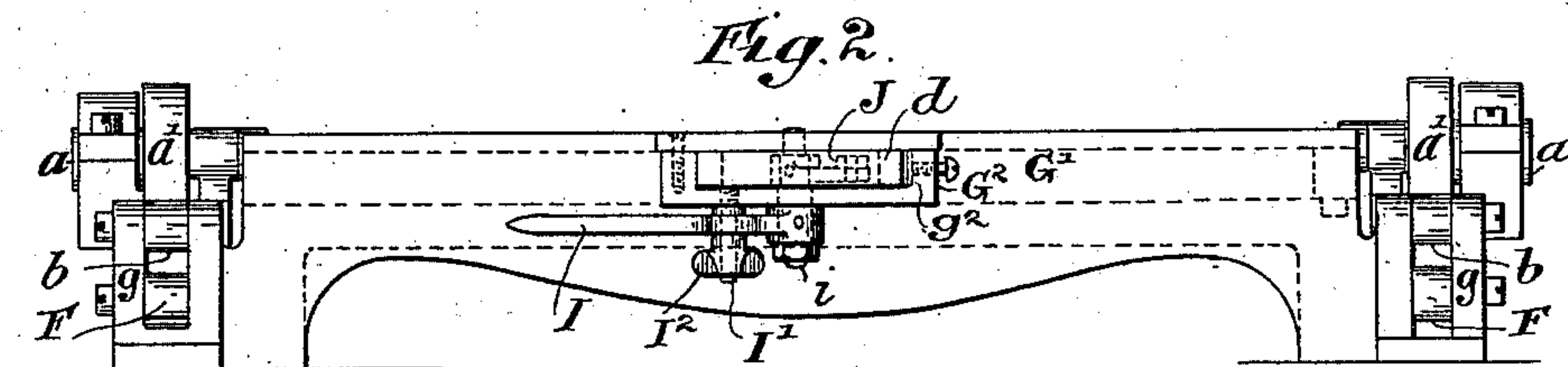
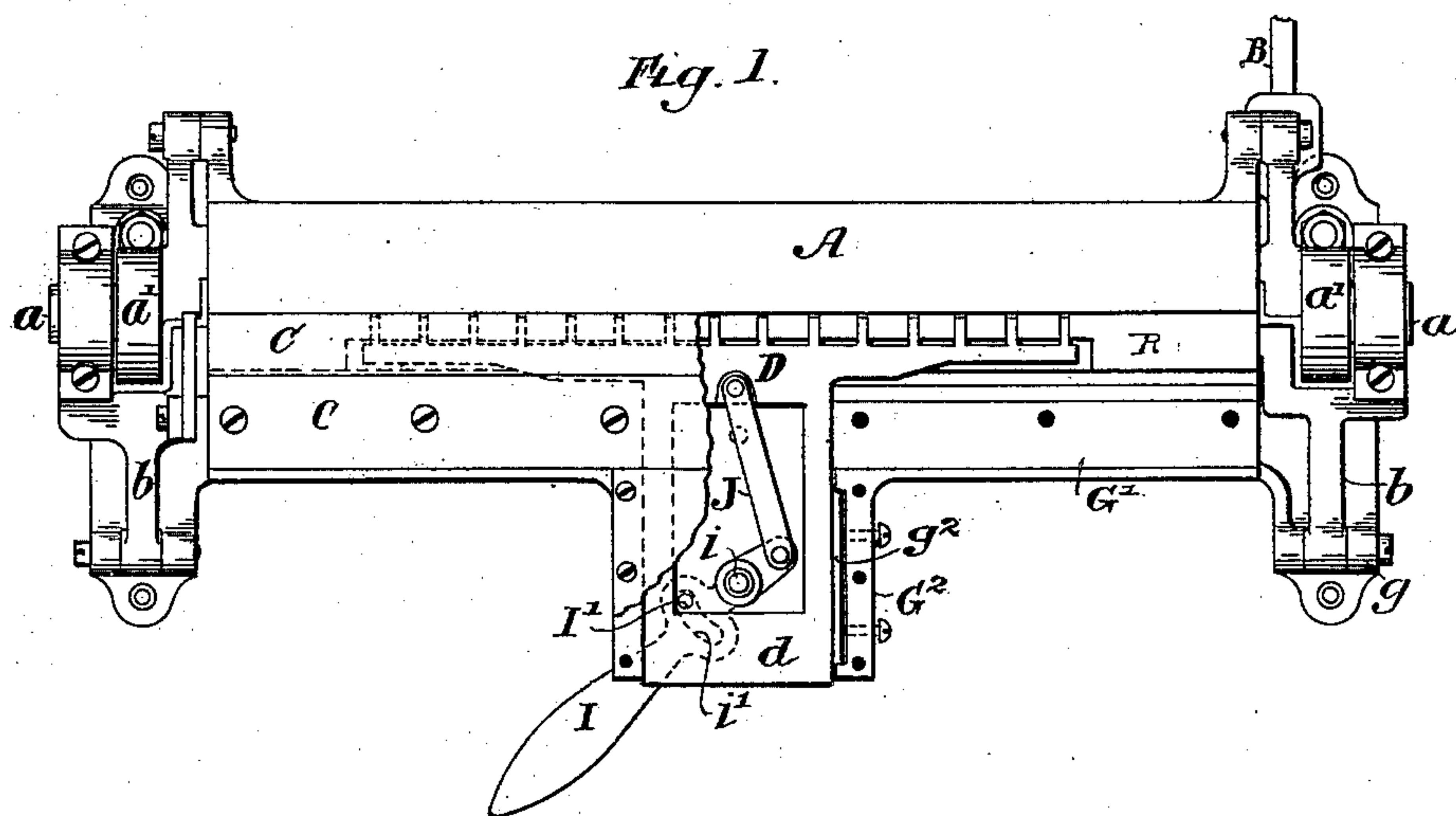
(No Model.)

C. BROMBACHER.

MACHINE FOR FOLDING SHEET METAL.

No. 351,490.

Patented Oct. 26, 1886.



Witnesses,
James D. Grinnell
Jas. R. Bowen.

Inventor
Charles Brombacher
by his attorneys,
Gifford & Brown

UNITED STATES PATENT OFFICE.

CHARLES BROMBACHER, OF TARRYTOWN, NEW YORK.

MACHINE FOR FOLDING SHEET METAL.

SPECIFICATION forming part of Letters Patent No. 351,490, dated October 26, 1886.

Application filed June 12, 1886. Serial No. 204,954. (No model.)

To all whom it may concern:

Be it known that I, CHARLES BROMBACHER, of Tarrytown, in the county of Westchester and State of New York, have invented a certain new and useful Improvement in Machines for Folding Sheet Metal, of which the following is a specification.

This improvement relates to the machine for folding sheet metal for which, on the 28th day of February, 1860, United States Letters Patent No. 27,319 were granted to O. W. Stow.

One object of my improvement is to provide a better means for operating and securing in position the gage which is employed in such machine.

Another object of my improvement is to make the machine adapt itself automatically to different thicknesses of metal.

I will describe a machine embodying my improvement, and then point out the various features in the claims.

In the accompanying drawings, Figure 1 is a top view or plan of a machine embodying my improvement, a certain portion being broken away to exhibit parts which involve my improvement. Fig. 2 is a front view of the machine. Fig. 3 is a side view of the machine. Fig. 4 is a sectional view of certain parts of the machine.

In general construction this machine is substantially the same as the machines for folding sheet metal which have been heretofore manufactured in accordance with the Stow patent, previously mentioned.

A designates the folding-bar. It is provided with journals *a*, supported in bearings provided in a swinging frame, *b*. An arm, *B*, of which only a small portion is shown in Figs. 1 and 3, is employed for operating the bar *A*.

C designates the plate, around the edge of which the bar *A* moves. Underneath this plate is a clamp, *R*, which consists of a portion of the frame *b*. A gage, *D*, for determining the width of the portion of metal which is bent or folded over, is also arranged below the plate *C*.

The journals *a* of the folding-bar *A* are provided with rollers *a'*, which may be made integral therewith. These rollers *a'* rest upon rollers *e*, having their journals supported by bearings in a frame, *F*. The frame *F* is piv-

otally connected at one end to standards *g*, which extend upwardly from the base-piece *G* of the machine. I may here remark that the frame *b* is also pivotally connected to these standards. The outer end of the frame *F* is supported by means of screws *g'*, which are fitted into tapped holes in the frame *F*, and extend through and below it. Combined with them are jam-nuts for securing them in such position as may be desired. The ends of the screws *g'* that extend below the frame *F* rest upon springs *S*, the construction of which may be best understood by reference to Fig. 4. These springs consist, as here shown, of disks of spring-metal fitted into cavities in the base-piece *G*.

The rollers *a'* of the folding-bar *A* have at a certain point in their circumferences a notch, *a''*, corresponding in contour to the contour of the rollers *e*. The notches of the rollers *a'* are immediately above the rollers *e* when the folding-bar is extended out horizontally. When the folding-bar is swung upwardly, the notches of its rollers *a'* are moved out of contact with the rollers *e*, and the frame *b* is thereby swung upwardly. The clamp *R* is thus moved upwardly to clamp the edge of the metal below plate *C*. The folding-bar is of course moved upwardly at the same time. It will be understood that the frame *b* is supported at all times by the frame *F*, because its rollers *a'* rest upon the rollers *e*, whose journals are sustained by the frame *F*. As the frame *F* is supported at one end by the springs *S*, it can always yield to a slight extent, wherefore the clamp *R* is provided with a yielding support. It is advantageous to provide for this yielding of the clamp *R*, in order that the machine may adapt itself to different thicknesses of metal being bent or folded. Of course the screws *g'* afford facility for adjusting the frame *F* to any desired position, but they will not need to be adjusted for all different thicknesses of metal. While springs *S* of the kind I have described are desirable, I do not wish to be confined to using springs of their construction.

G' designates an upward extension from the base-piece *G*, made integral with the clamp *R*, and serving to support the plate *C*, around the edge of which the folding-bar moves. This

support G' is provided at about the middle of its length with an extension, G^2 . The gage D has an extension, d , that fits in the extension G^2 of the support G' . The gage is adjustable back and forth in the direction of the length of its extension d , and is guided by the latter in its movements. The extension G^2 may be provided with an adjustable plate, g^2 , and set-screws therefor in order to avoid any play of the extension d of the gage within it.

I designate a lever fulcrumed to the under side of the extension G^2 by means of a pin, i . At the inner end it is pivotally connected to a link, J , that is pivotally connected to the gage D . By oscillating the lever I , by manipulating its outer end with the hand, the gage may be moved backward or forward. The lever I is provided with a slot, i' , which is arc-shaped and concentric with its fulcrum-pin i . A screw, I' , which is fastened into the extension G^2 , extends through the slot i' of the lever. A nut, I^2 , applied to the outer end of the screw below the lever, serves to secure the lever, and consequently the gage, in position after adjustment. It in effect constitutes, with the screw and the lever, a lock for the gage. This gage, with the mechanism for operating it, which I have described, is very superior to the gages previously used, as this gage may be easily and accurately adjusted and secured in any position effectively.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a machine for folding sheet metal, the combination, with a plate around the edge of

which the sheet metal has to be folded, of a folding-bar, a clamp, a swinging frame by which the folding-bar and clamp are supported, and a yielding support for the frame, substantially as specified.

2. In a machine for folding sheet metal, the combination, with a plate around the edge of which sheet metal is to be folded, of a folding-bar, a clamp, a swinging frame by which the folding-bar and clamp are supported, another swinging frame forming a support for the first swinging frame, and a spring or springs for sustaining the last said swinging frame, substantially as specified.

3. In a machine for folding sheet metal, the combination, with a plate around the edge of which the sheet metal is to be folded, of a folding-bar, a clamp, a swinging frame by which the clamp is supported and in which the folding-bar is journaled, another swinging frame forming a support for the first swinging frame, screws for adjusting the last said swinging frame, and springs upon which these screws impinge, substantially as specified.

4. In a machine for folding sheet metal, the combination, with a gage provided with an extension constituting a guide, of a lever, a link connecting the lever and gage, and a lock for locking the lever in position to secure the gage, substantially as specified.

CHAS. BROMBACHER.

Witnesses:

D. H. DRISCOLL,
JAS. R. BOWEN.