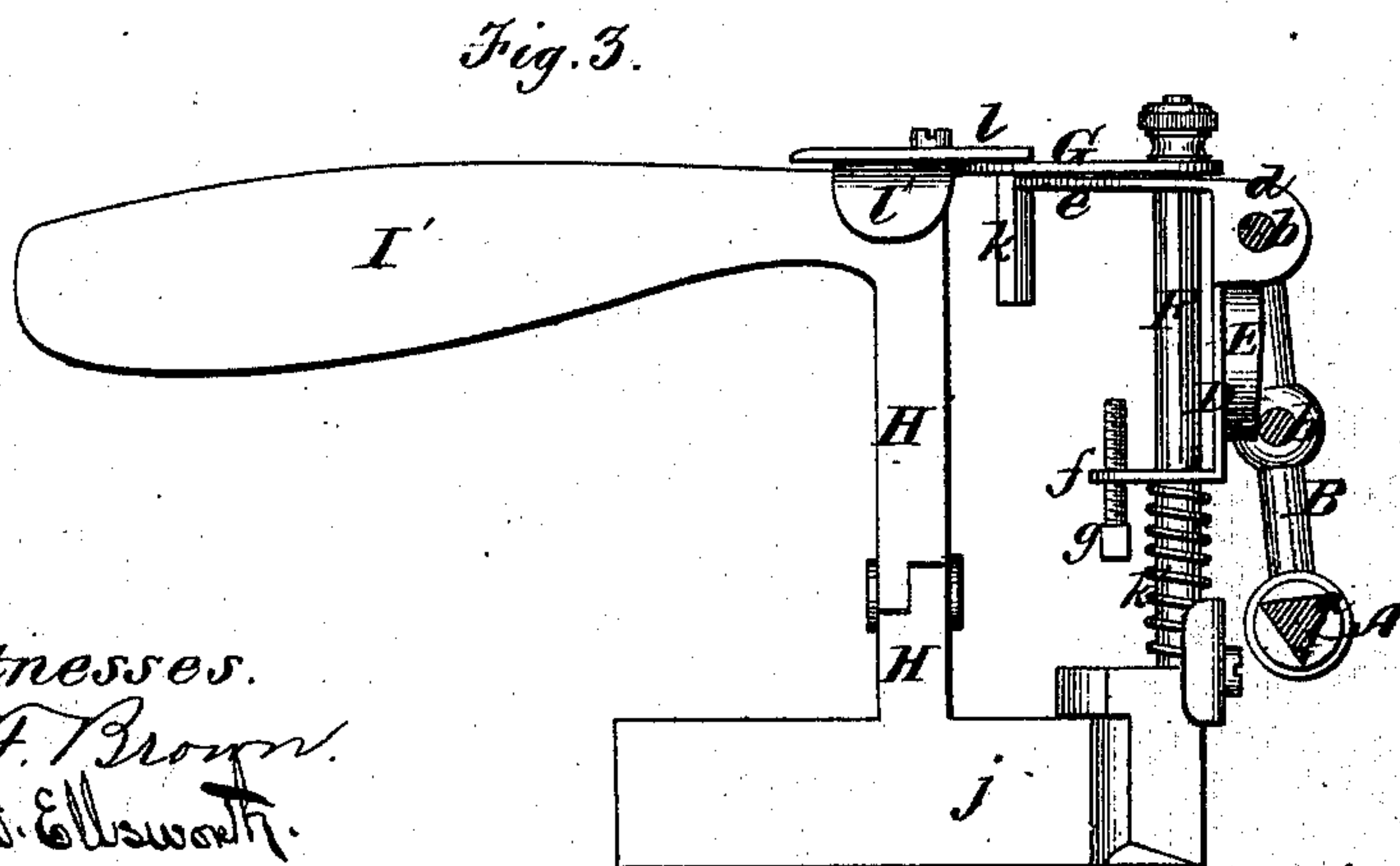
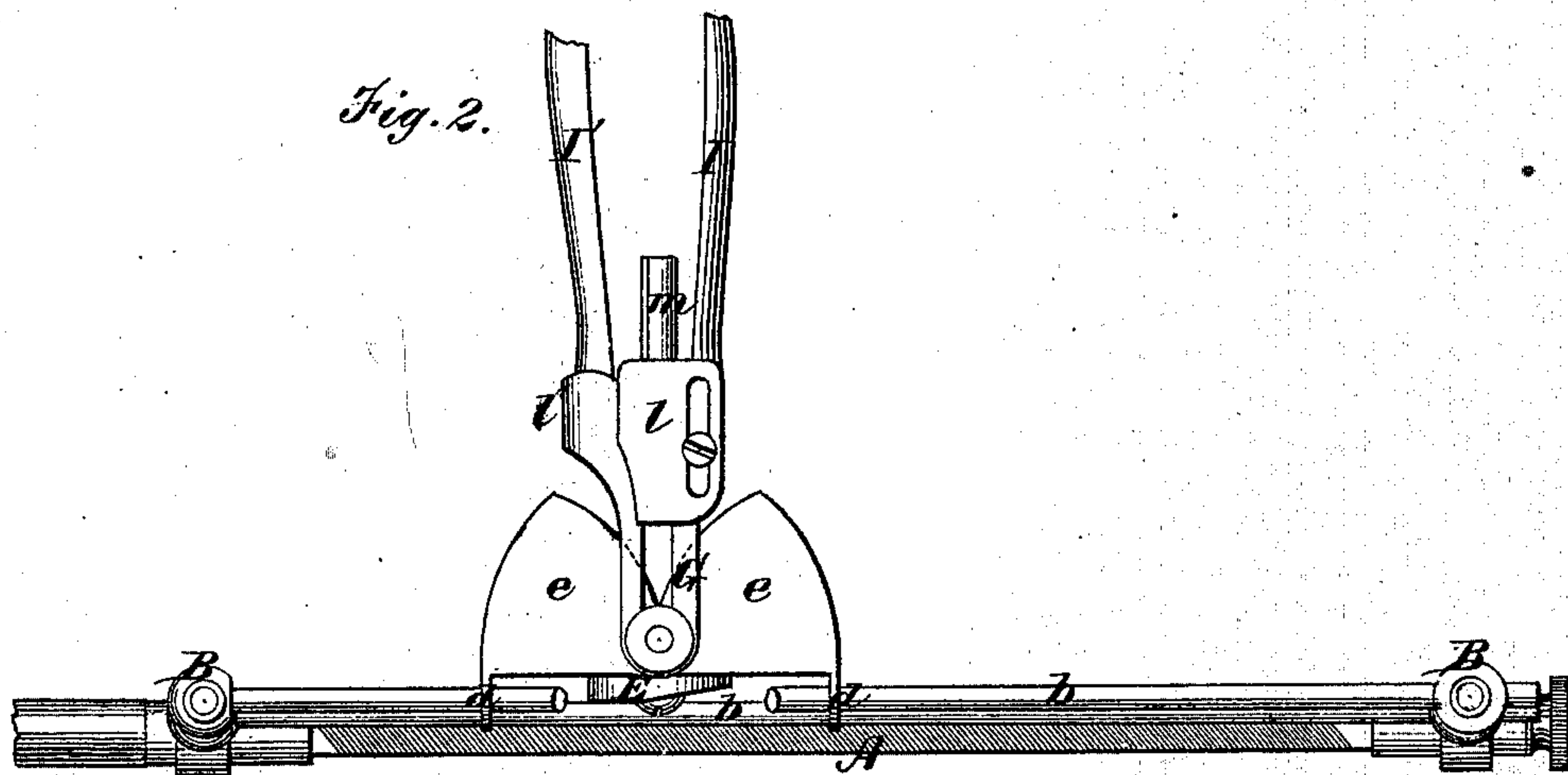
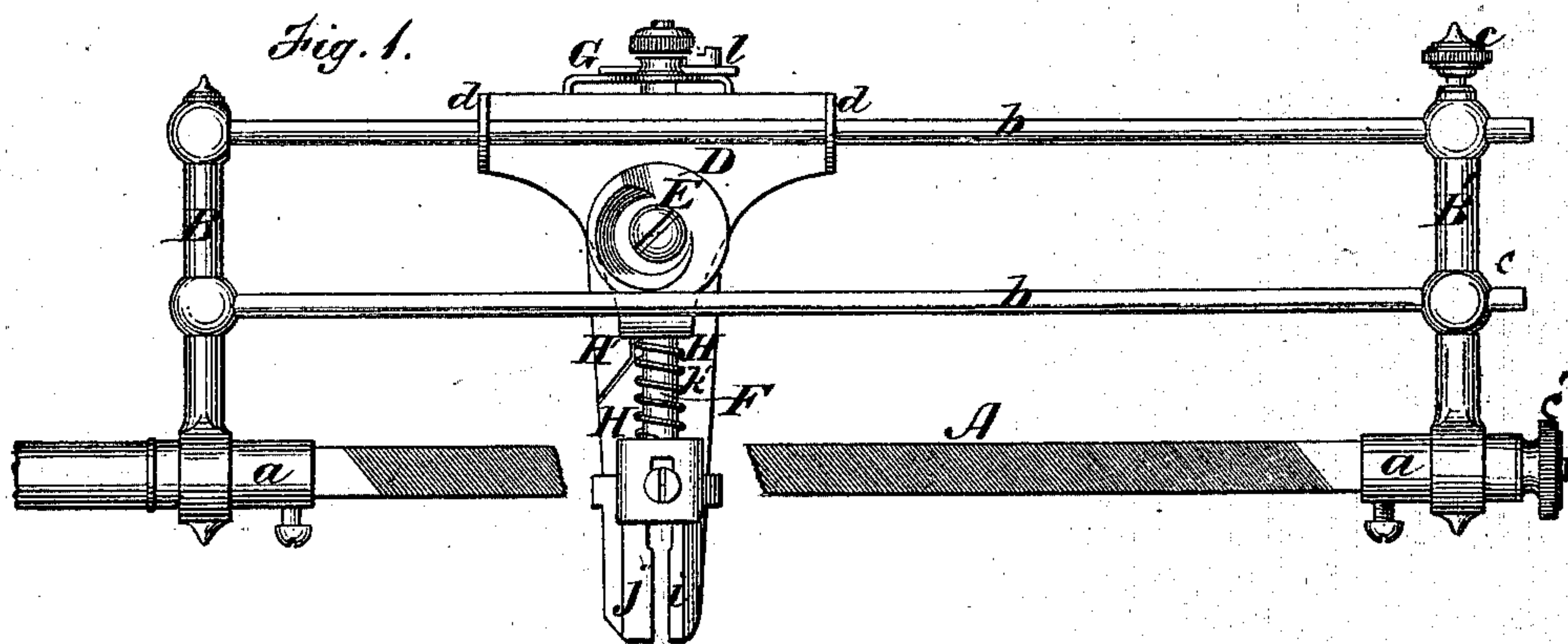


C. F. HENIS.  
Saw-Filing Machines.

No. 139,149.

Patented May 20, 1873.



Witnesses.  
C. F. Brown.  
Chas. E. Ellsworth.

Inventor.  
C. F. Henis.  
by his Atty.  
Hill & Ellsworth



# UNITED STATES PATENT OFFICE.

CHARLES F. HENIS, OF BALTIMORE, MARYLAND.

## IMPROVEMENT IN SAW-FILING MACHINES.

Specification forming part of Letters Patent No. **139,149**, dated May 20, 1873; application filed October 21, 1872.

*To all whom it may concern:*

Be it known that I, CHARLES F. HENIS, of the city and county of Baltimore and State of Maryland, have invented a new and Improved Saw-Filing Machine; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 is a front view of my apparatus. Fig. 2 is a top view of the same, and Fig. 3 is a side elevation with the file-holder in section.

Similar letters of reference in the accompanying drawing denote the same parts.

This invention belongs to the class of hand-machines for filing straight saws; and has for its object to improve the construction of such a machine in the following respects: First, of the file-holding part of the apparatus; second, of that part of the apparatus by which the width of the teeth is regulated; third, of that part of the apparatus by which the bevel of the edge of the tooth is regulated; and, fourth, of that part of the apparatus by which the saw is clamped during the filing process. To this end the invention consists, first, in a sliding file-holder, constructed substantially as hereinafter described; second, in the combination of the file-holder with an adjustable cam for arresting the swinging motion of the file-holder; third, in the combination of the file-holder with a swinging plate and an adjustable stop for regulating the play of the plate; fourth, in the combination of the file-holder with a vertically-sliding plate, stop, and spring; fifth, in the combination of the clamping apparatus with the file-holder, all which I will now proceed to set forth.

In the drawing, A is the file, the same having its ends in sockets *a*, which are placed in eyes at the outer extremities of the end pieces B B' of the file-holder. The sockets *a* can be rotated in these eyes so as to allow of turning the file to make it conform to the slant of the teeth. The end pieces B B' are further connected, by rods *b*, parallel to each other and to the file, and secured by set-screws so as to be removable, and so, also, that the end piece furthest from the handle C can be slipped along the rods, so as to accommodate the holder to files of varying lengths. The upper rod *b*

slides in vertical lugs *d* extending from the face of a plate, D. From the back of this plate extend horizontal lugs *e f*, which slide on a vertical post, F, forming the front of the frame to which the file-holder is attached. E is a cam pivoted to the face of the plate D opposite the middle rod *b*, which cam can be turned so as to interpose a greater or less thickness between the bar *b* and plate D. On the upper bar *b*, as a pivot, the file can be swung outward from the post F. In the lower lug *f* is a set-screw, *g*, which regulates the vertical play of the plate D. Beneath the lug *f*, and encircling the post F, is a spring, *h*, which tends to throw the plate D upward. Supposing the saw to be held between the plates *i j*, as hereinafter described, the file is carried down between its teeth by depressing the plate D. The cam E can be turned so as to adapt the file to saws having teeth of different widths; and, if kept in the same position throughout the filing of any one saw, said cam gives all the teeth of that saw the same width. The bevel of the teeth—that is, the lateral angle of their faces—is attained by swinging the plate D on the post F, and this bevel is regulated by means of a stop, *k*, projecting downward from an adjustable plate, *l*, which is secured by a set-screw passing through a slot in said plate to the top of a plate, G, having a slot through which the stop *k* passes. The upper lug *e* of the plate D has a central notch, one side or the other of which, as the plate swings, strikes the stop *k*, the distance to which the plate swings being regulated by the position of the stop *k*. The post F is secured at its lower end to the plate *j*, and its upper end to the plate G. The plates G and *j* are further connected by a post, H, which also forms one of the levers of the clamping apparatus, the other lever H' being the movable one, and pivoted to H, and bearing the jaw *i* at its lower end. Between the longer arms of the levers H H' is a spring, which tends to throw the movable lever away from the fixed one, and thus keep the jaws *i j* open. A flange, *l'*, on the plate G stops the movable lever at the proper point. The fixed jaw *j* has a flange, *m*, on its upper edge to keep the saw at its proper place between the jaws. Handles I I' extend backward from the tops of the levers H H'. By grasping these handles with one



hand the operator clamps the jaws *i j* against the saw, the other hand being left free to operate the file. On relieving the handles from pressure the jaws are thrown open by the force of the spring, so that the shifting of the instrument from point to point of the saw is a very easy matter.

What I claim as new is—

1. The file-holder, consisting of the end pieces *B B'*, sockets *a a*, rods *b b*, on which the end piece *B'* slides, and set-screws *c c c'*, all arranged, constructed, and operated as set forth.

2. The combination of the file-holder with the plate *D* and adjustable cam *E*, as described.

3. The combination of the frame *H F*, plate *D*, file-holder, and stop *k*, as set forth.

4. The combination of the frame *H F*, plate *D*, adjustable stop *g*, and spring *k'*, as explained.

5. The combination of the frame, file-holder, adjustable plate *l*, stop *k*, and swinging plate *D*, as specified.

6. The combination of the frame *H F*, pivoted arm *H'*, nipping-plates *i j*, catch *l'*, and handles *I I'*, as described.

7. The combination of the file-holder, plate *D*, frame *H F*, and clamping apparatus, as set forth.

CHARLES F. HENIS.

Witnesses:

MELVILLE CHURCH,  
N. K. ELLSWORTH.