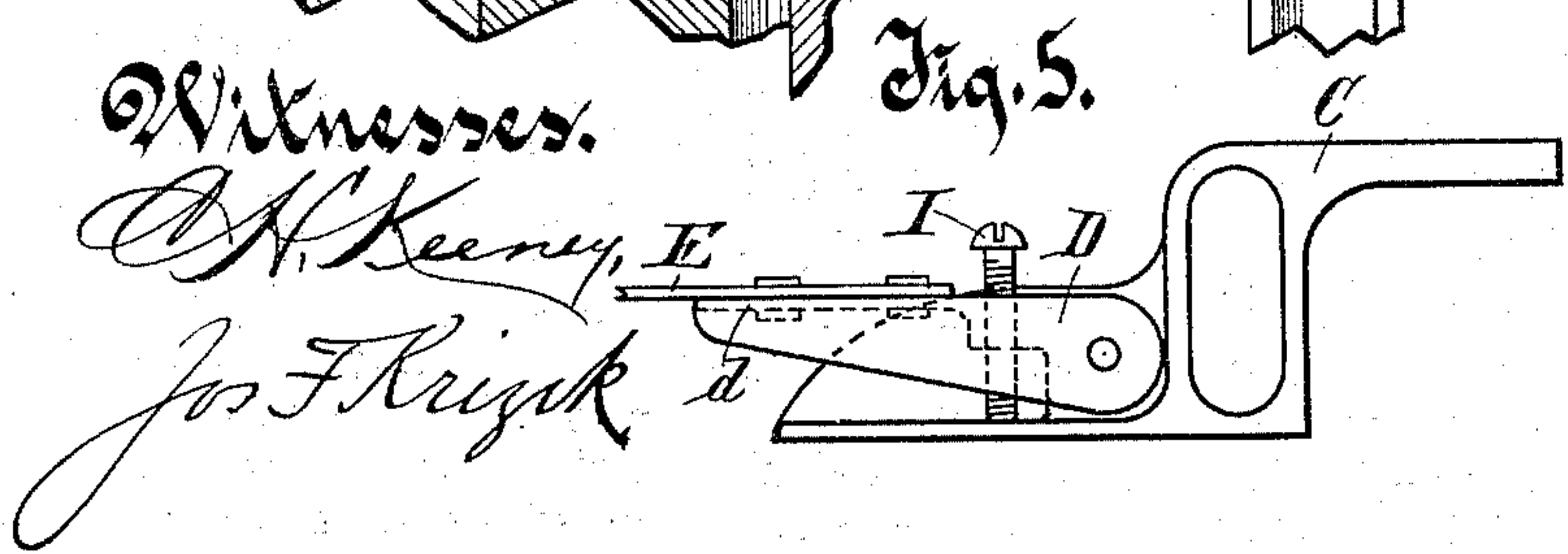
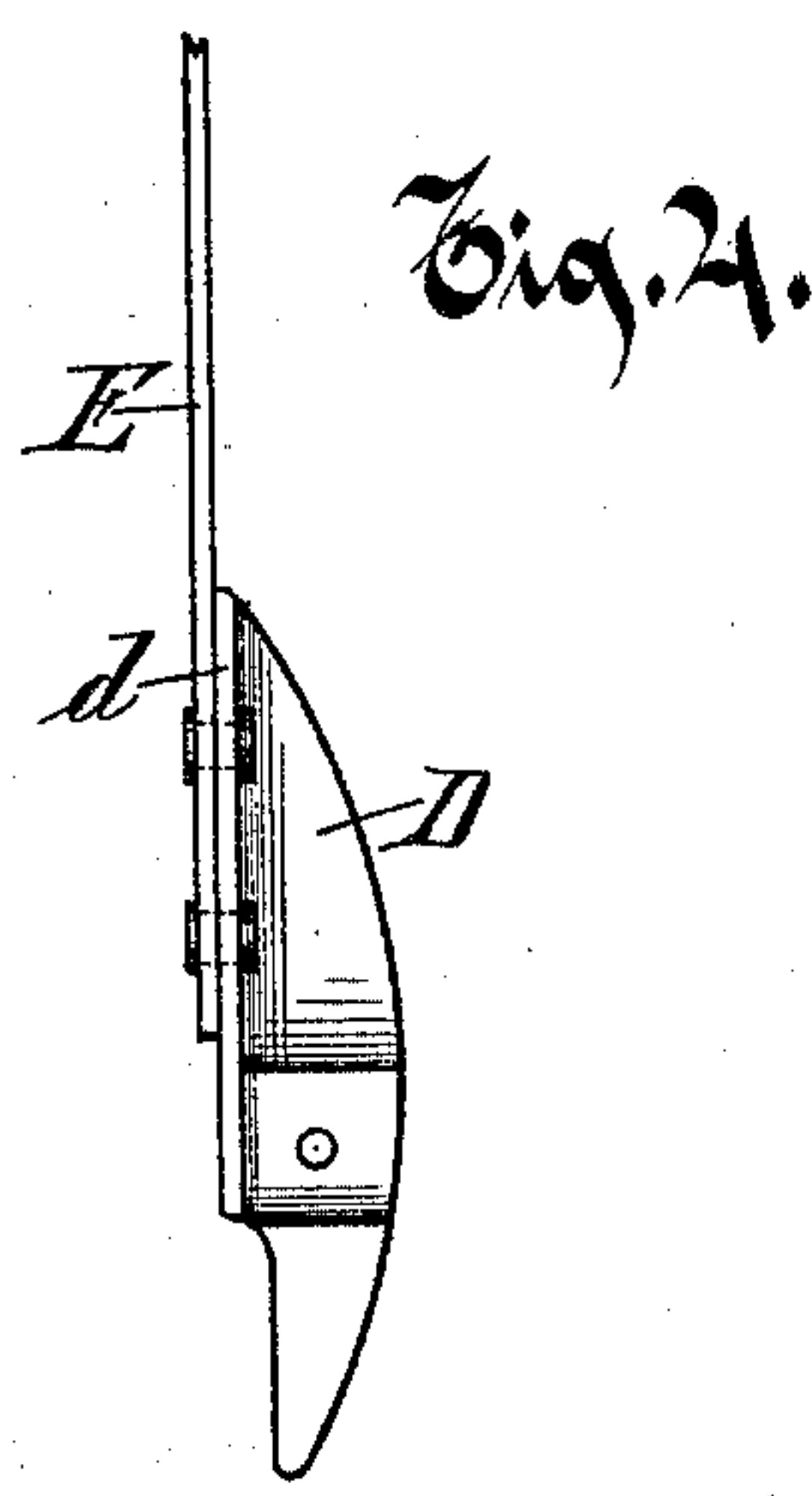
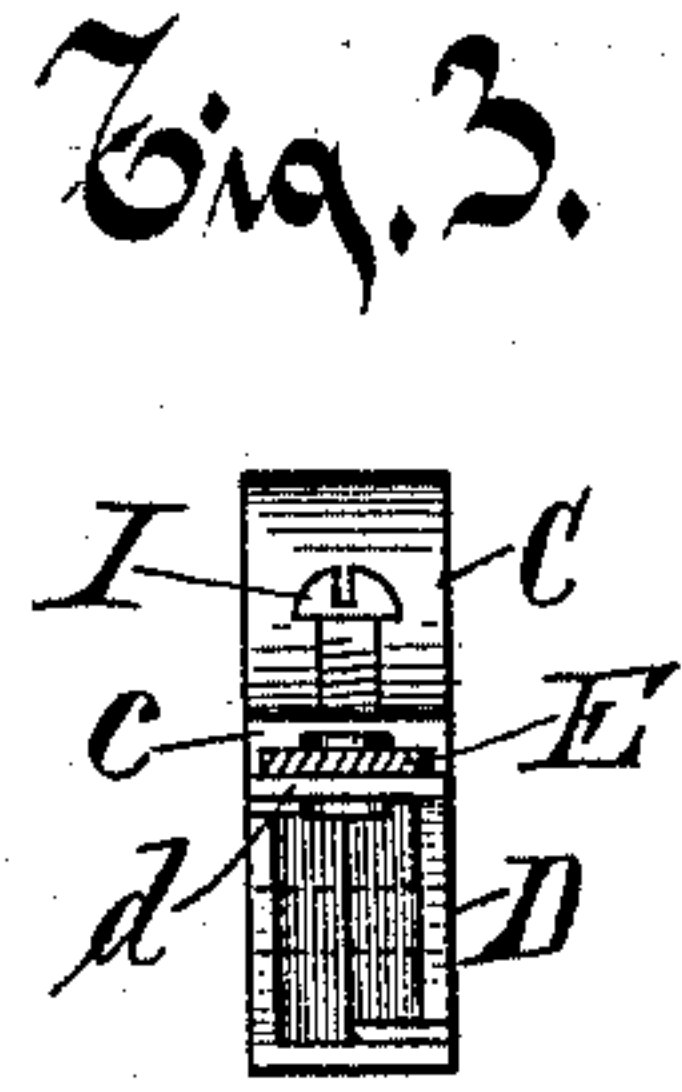
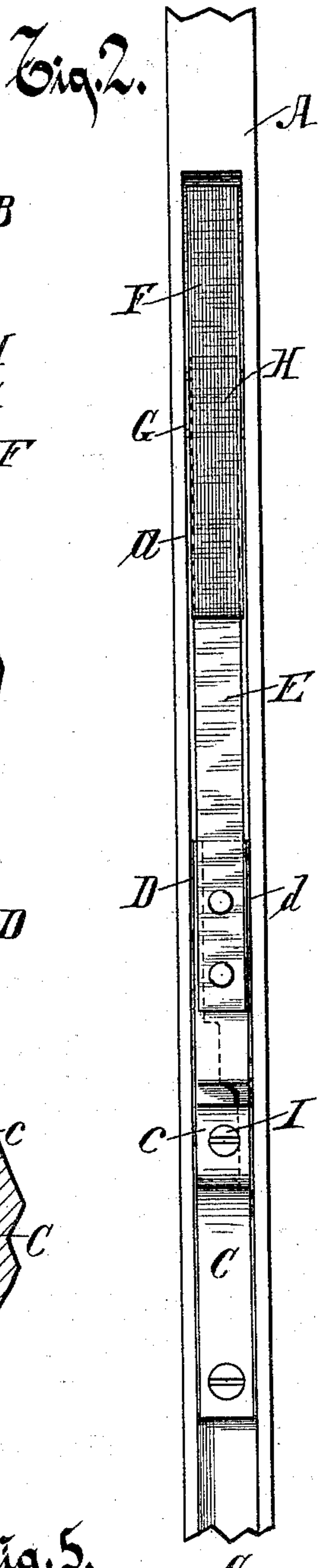
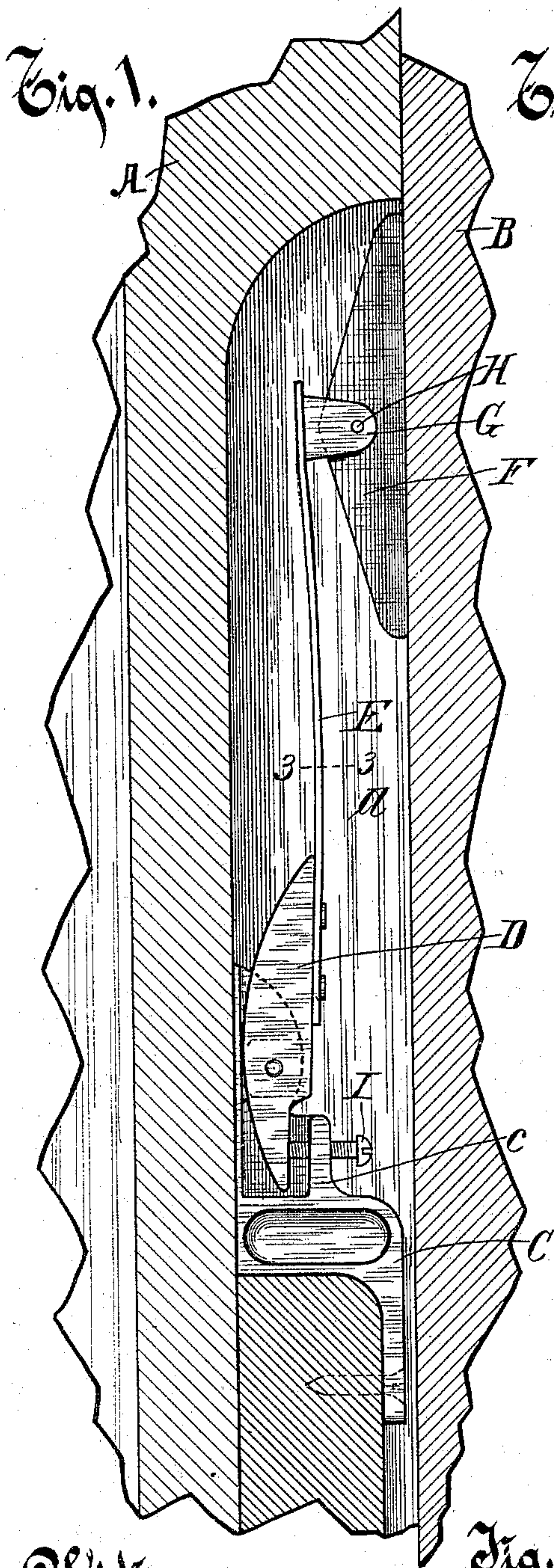


(No Model.)

H. E. WILLER.
SASH HOLDER.

No. 495,646.

Patented Apr. 18, 1893.



Inventor.

Henry E. Willer,
By
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UNITED STATES PATENT OFFICE.

HENRY E. WILLER, OF MILWAUKEE, WISCONSIN.

SASH-HOLDER.

SPECIFICATION forming part of Letters Patent No. 495,646, dated April 18, 1893.

Application filed August 17, 1892. Serial No. 443,327. (No model.)

To all whom it may concern:

Be it known that I, HENRY E. WILLER, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a new and useful Improvement in Adjustable Springs for Window Blinds, Screens, and the Like, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

My invention has relation to improvements in adjustable springs for window blinds, screens and the like.

The object had in view is to provide a simple and convenient means for adjusting the tension of a supporting and balancing spring of the above character, whereby light or heavy blinds or screens are sustained and operated equally well, and whereby shrinkage and expansion of the blinds or screens, or of the window frame is provided for.

In the accompanying drawings, Figure 1 is a section of a fragment of a window blind and frame, showing my improved device applied thereto. Fig. 2, is an edge view of the blind. Fig. 3, is a horizontal section on the line 3—3 Fig. 1. Fig. 4, is a side view of the inner side of the pivoted plate showing the spring attached thereto, and Fig. 5, is a view of a slightly modified form.

Referring to the drawings, the letter A indicates a blind, which, as usual, slides up and down in ways provided in the window frame B. The edge of the blind is formed with a socket *a*, one end of said socket being shallow, and the other end considerably deeper. To the bottom of the shallow portion is secured a casting, C, consisting of two vertical members, forming means for attachment and a horizontal connecting member, resting upon the wood work, and provided with an upwardly-extending lug, *c*, having a screw-threaded aperture therethrough. Pivoted to the side wall of the upper member of the casting is an arm, D, said arm having one edge curved or rounded, and its opposite straight edge provided with a flange, *d*, extending inwardly at right angles thereto. Secured to this flanged portion is a spring, E, preferably of flat steel ribbon, the free end thereof having pivoted thereto a friction block F, which block has a long face or bearing surface, adapted to press

against the frame B, and support the blind by friction.

For convenience in attaching the friction block to the spring, E, I provide two lugs, G, rigid to and extending at right angles from the side of the spring, through which, and through the interposed block a pivot pin H is inserted. It will be noticed that the spring is so located that the friction block will be in front of the deep part of the socket, and will, when the blind is removed from the frame, project beyond the edge of the blind, so as to bear against the ways of the frame when inserted in place therein.

For the purpose of regulating the power of the spring and the force with which the friction block will be pressed against the window frame, I provide an adjusting screw I, working in the screw threaded aperture of lug *c*, and adapted to bear against the lower reduced end of arm D. When it is desired to have the spring exert a light pressure on the friction block, the adjusting screw is screwed out as far as possible, but when a greater pressure is desired, or, in other words, when a stiff spring is required the adjusting device is screwed inwardly, having the effect, of course, of throwing the upper end of the spring and its attached friction block outwardly firmly against the ways of the frame. It will be noticed that by attaching the lower end of the spring to the straight outer side of the pivoted arm, D, a reinforcement for the spring between the friction block and the adjusting screw, I, is not only furnished but also the force is directed by the pivoted arm against the inner side of the spring in order to throw the upper end outward, while all pressure by the adjusting screw against the spring is obviated, inasmuch as said screw contacts directly with the pivoted arm.

I prefer to use in connection with each blind two of these spring friction devices, fitted in grooves arranged at the opposite ends of one edge of the blind. If desired, however, four may be employed with each blind, two being arranged in the opposite edges.

In Fig. 5, I have shown a slightly modified construction which simplifies the device somewhat by dispensing with the lug, *c*, and having the adjusting screw working directly

through the pivoted arm D, slightly above the pivotal point, instead of extending through the lug and working against said pivoted arm, as in the other figures of the drawings.

5 Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In an adjustable spring for window blind, and the like, the combination of a cast-
 10 ing provided with vertical members and a connecting horizontal member, an arm pivoted to the upper vertical member of the casting, a spring secured to one edge of the pivoted arm, a friction block at the upper end of the
 15 spring, and a supported screw constructed to act upon the pivoted arm to regulate the tension of the spring, substantially as set forth.

2. In an adjustable spring for window blinds

and the like, the combination, of a casting, provided with vertical members and a connect- 20
 ing horizontal member, the latter provided with an upwardly extending lug having a screw threaded aperture therein, an arm pivoted to the upper vertical member of the cast- 25
 ing, a spring secured to one edge of the pivoted arm, a friction block pivoted to the free end of the spring, and a screw passing through the threaded aperture of the lug and engaging the end of the pivoted arm, substantially
 as set forth. 30

In testimony whereof I affix my signature in presence of two witnesses.

HENRY E. WILLER.

Witnesses:

ARTHUR L. MORSELL,
 C. T. BENEDICT.