

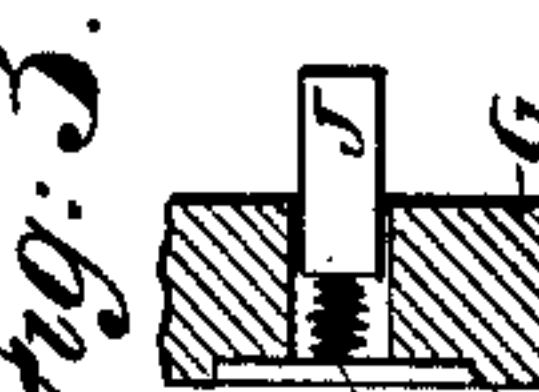
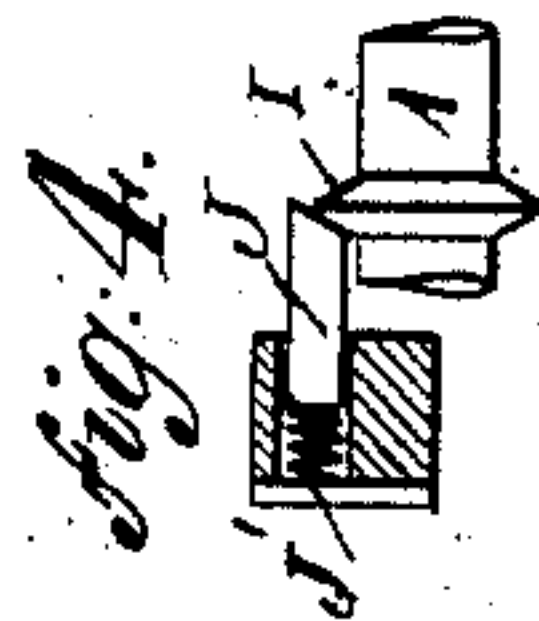
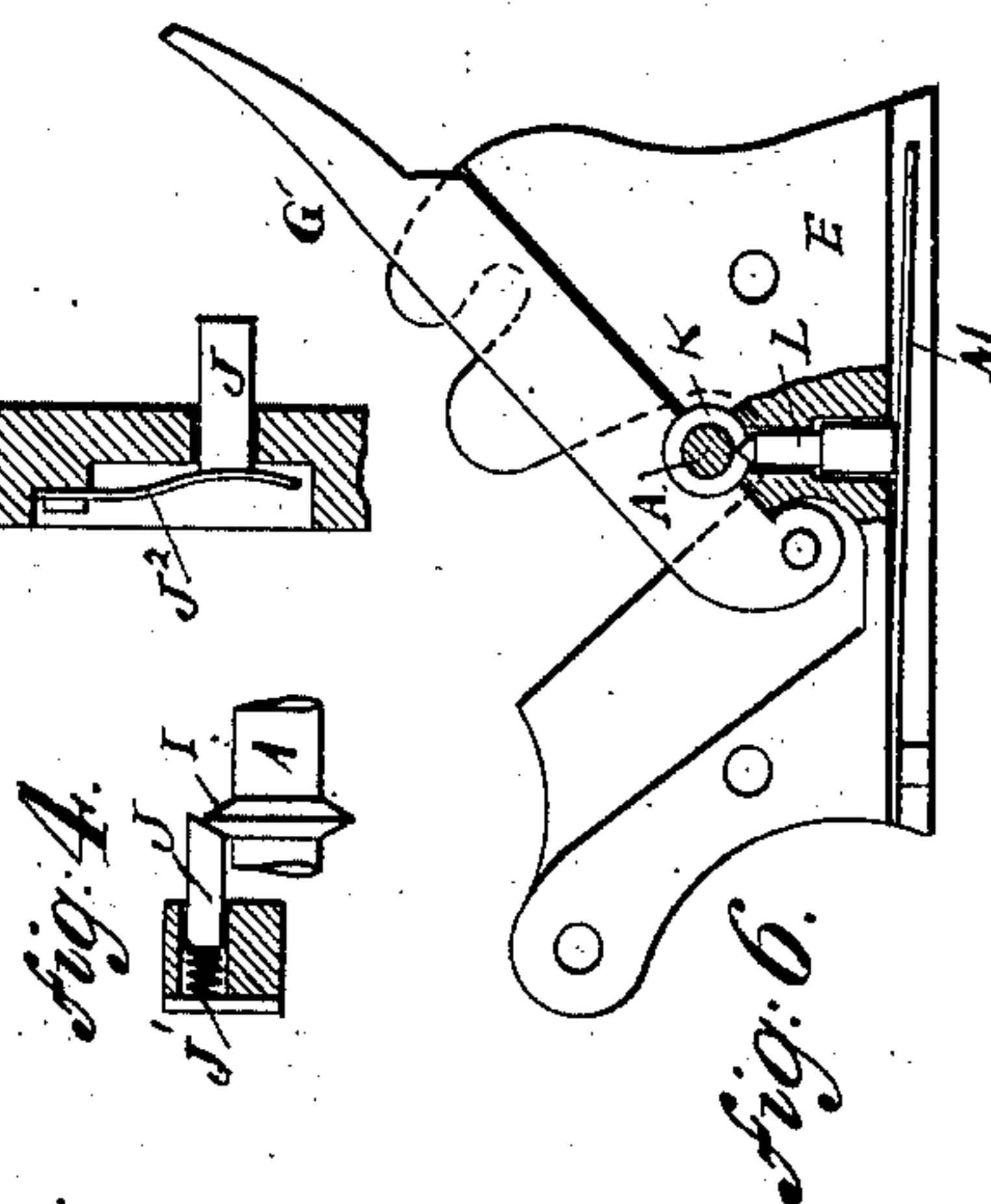
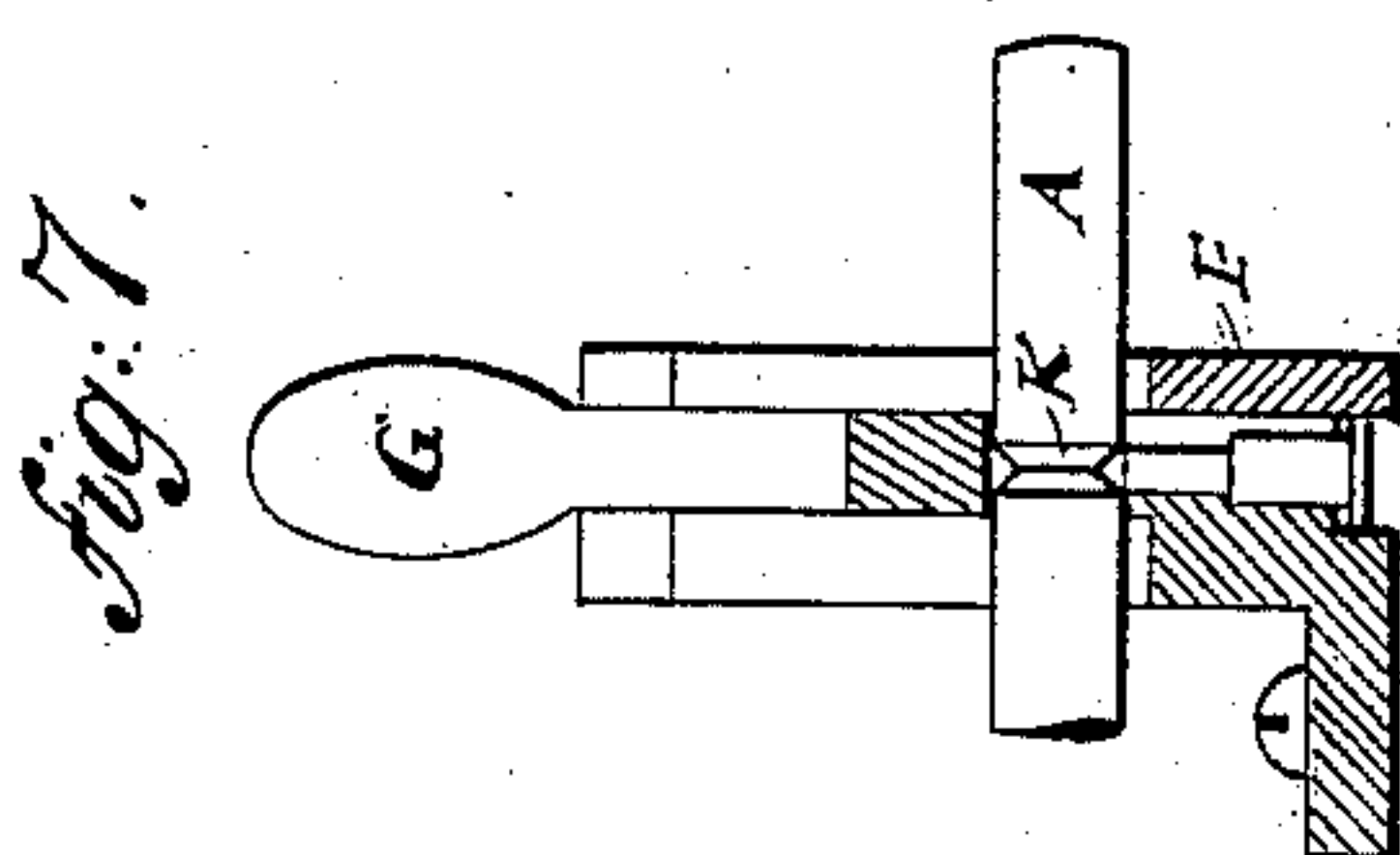
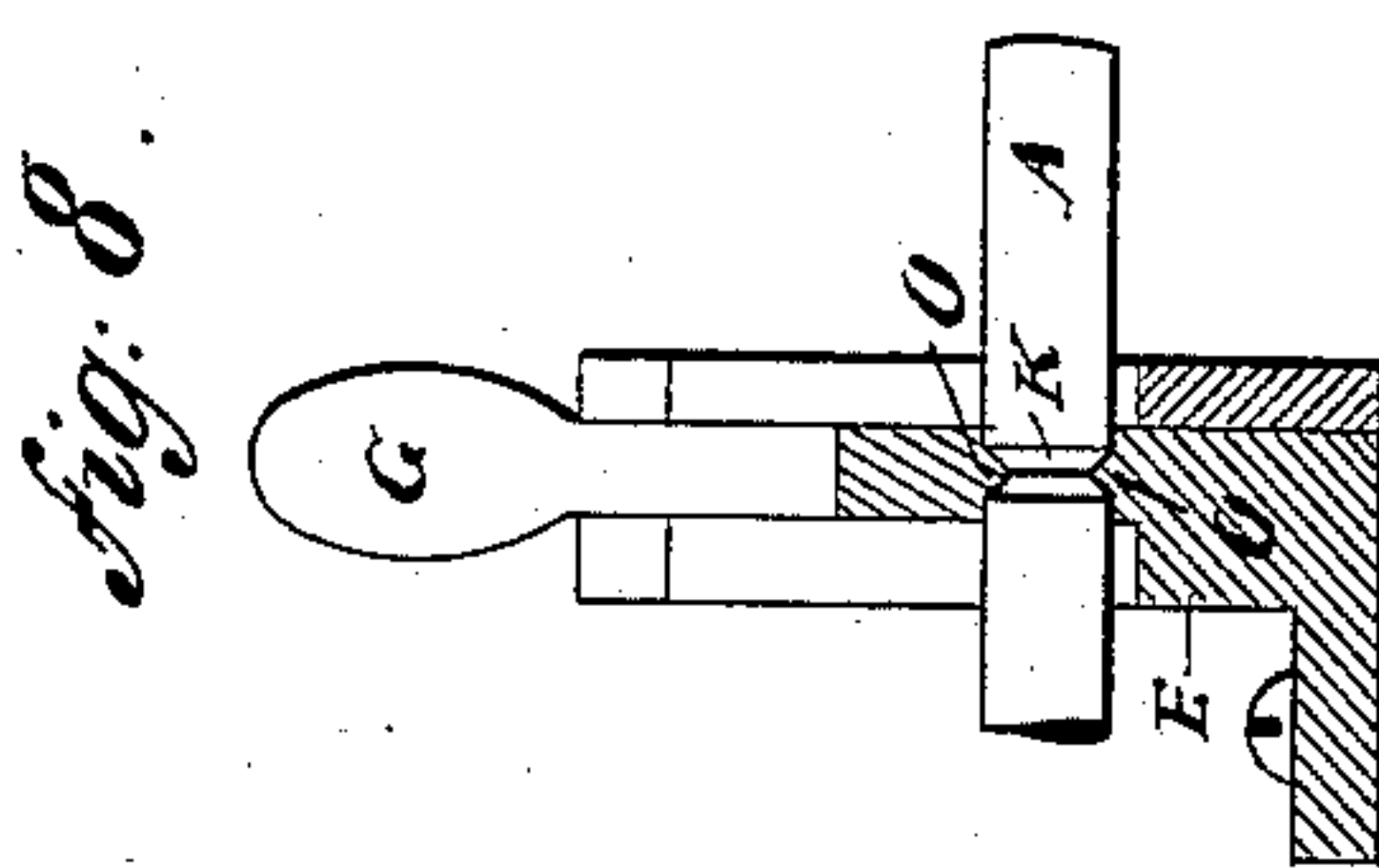
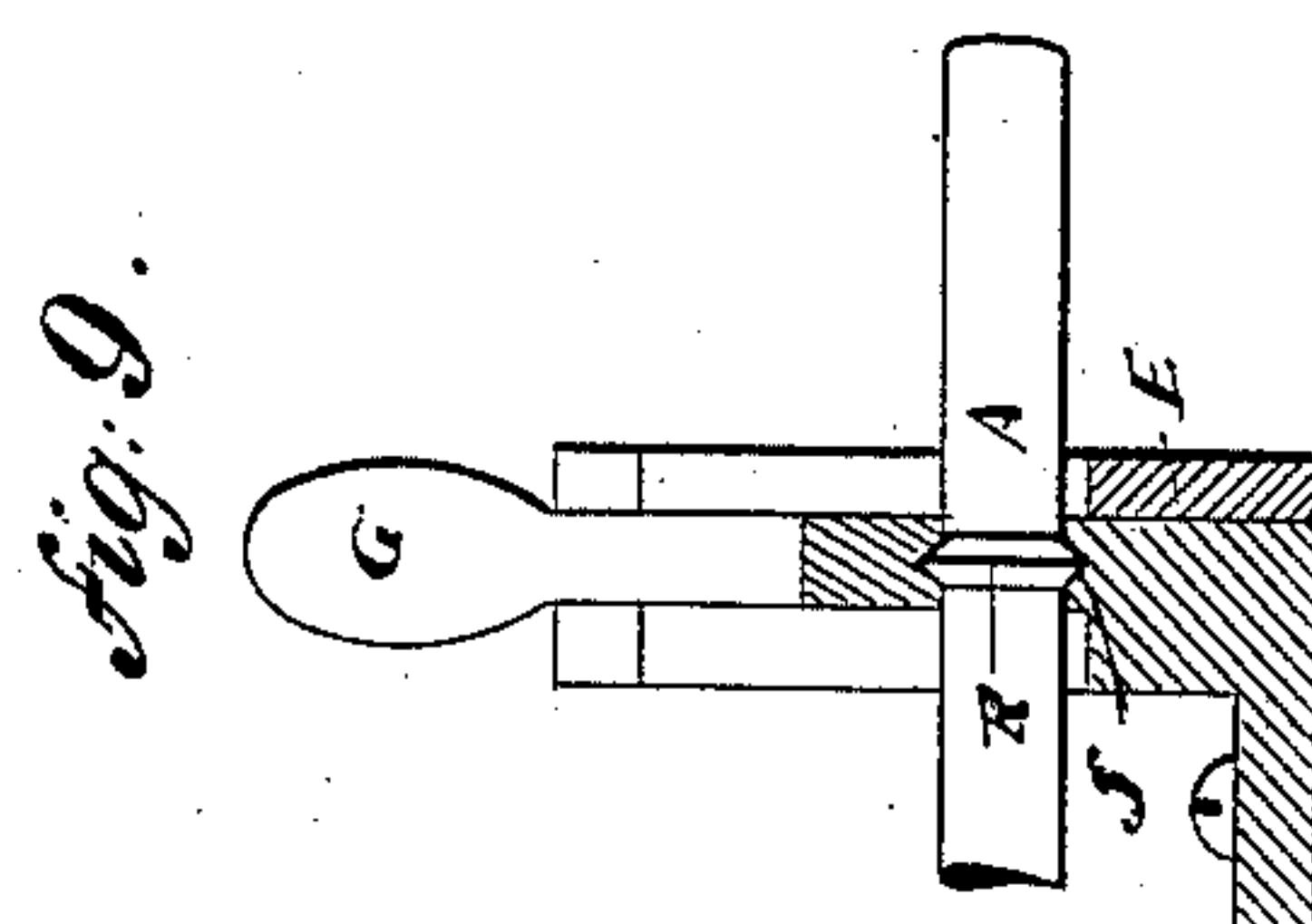
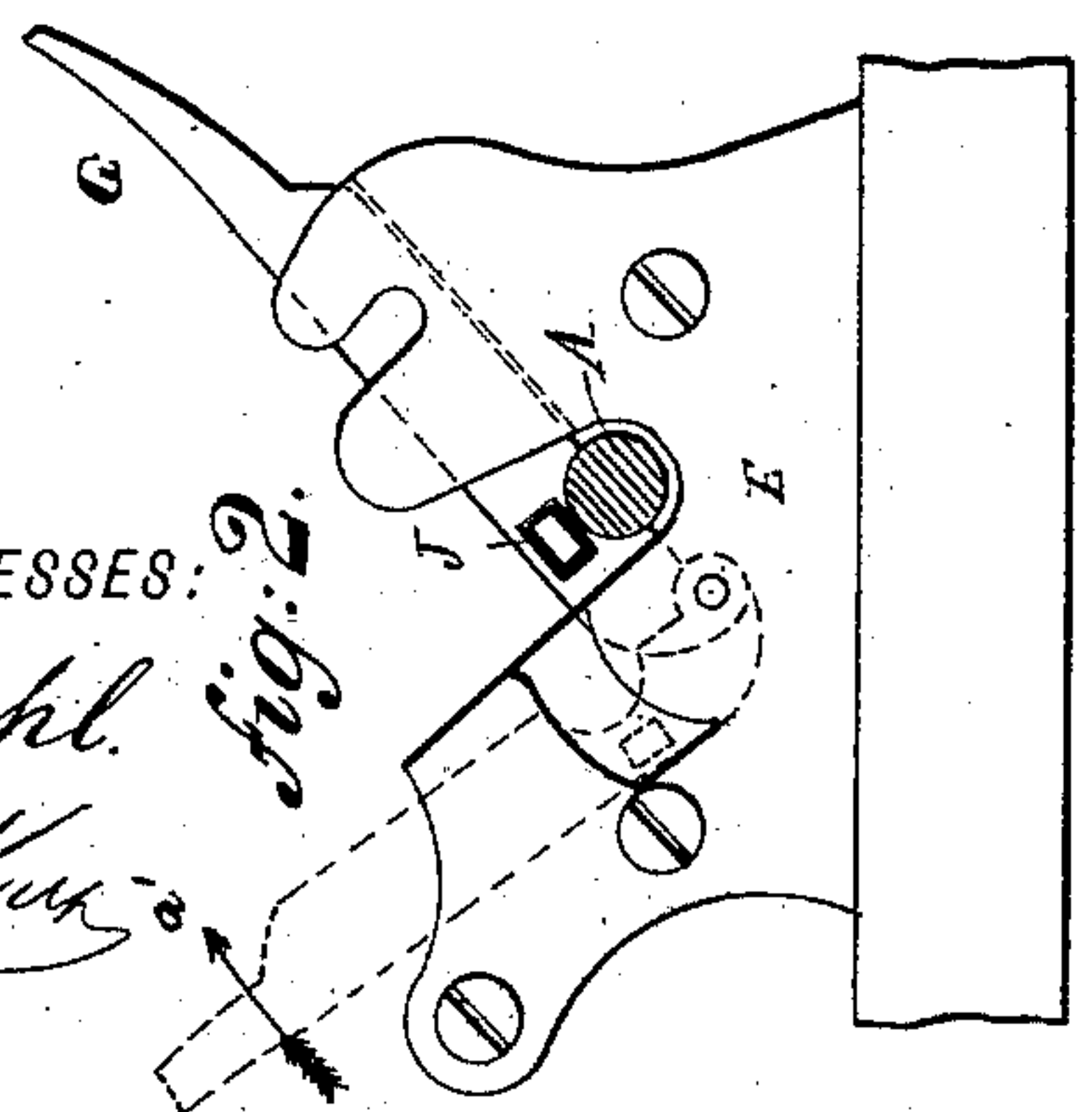
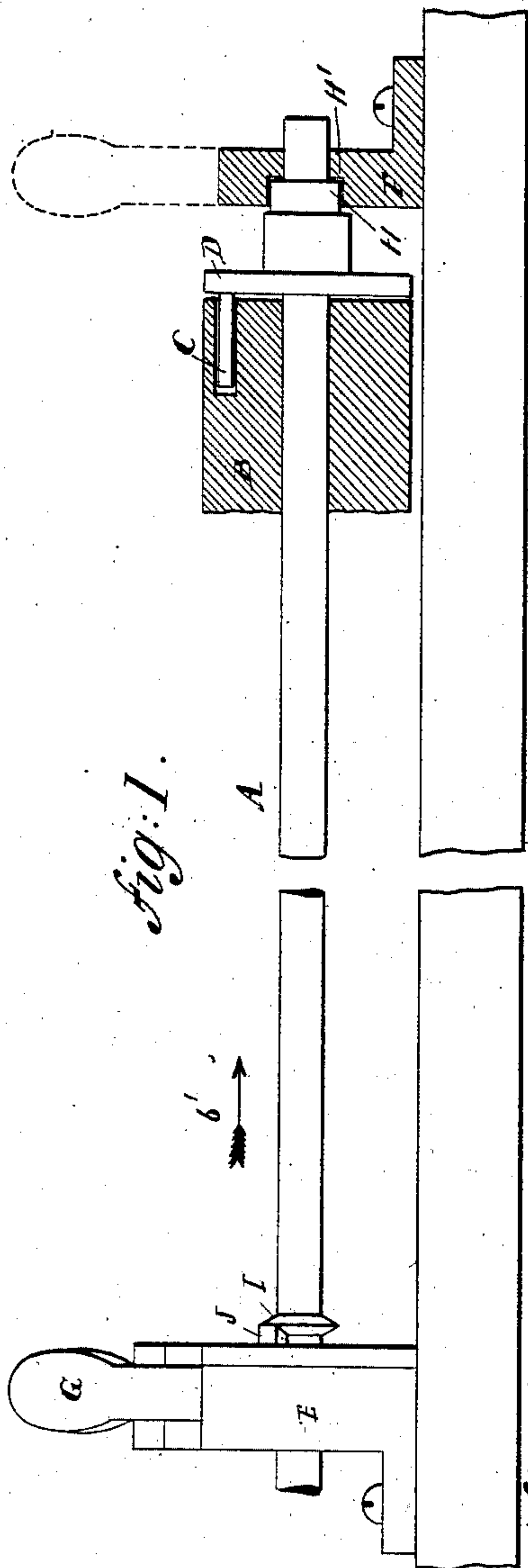
(No Model.)

O. F. GUNZ & A. SUEUR.

MUSIC BOX.

No. 355,447.

Patented Jan. 4, 1887.



WITNESSES:

A. Schehl.
Carl Kunz

INVENTORS

INVENTORS
Oscar F. Punz
and Alfred Smeier
BY
Goepfert & Raegner
ATTORNEYS.

UNITED STATES PATENT OFFICE.

OSCAR F. GUNZ, OF RUTHERFORD PARK, NEW JERSEY, AND ALFRED SUEUR, OF NEW YORK, N. Y., ASSIGNORS TO M. J. PAILLARD & CO., OF NEW YORK, N. Y.

MUSIC-BOX.

SPECIFICATION forming part of Letters Patent No. 355,447, dated January 4, 1887.

Application filed March 11, 1886. Serial No. 194,774. (No model.)

To all whom it may concern:

Be it known that we, OSCAR F. GUNZ, of Rutherford Park, Bergen county, State of New Jersey, and ALFRED SUEUR, of the city, county, and State of New York, have invented certain new and useful Improvements in Music-Boxes, of which the following is a specification.

Heretofore music-boxes have been constructed with revolving pin-cylinders mounted in the frame of the box in such a manner that they could not be removed, or with cylinders which could be removed to be replaced by others having their pins arranged to play different melodies. Of the removable cylinders there are two kinds, known as the "changeable" and the "interchangeable." The changeable cylinders must be fitted very accurately into the box at the time it is made, and additional cylinders cannot be supplied at a later date; whereas the interchangeable cylinders are provided with a suitable mechanism for adjusting their shafts in place, so as to permit the pins to strike the proper teeth of the combs at the proper times, an adjusting device of the kind being found in the Patent No. 212,108, issued on the 11th day of February, 1879, to M. J. Paillard & Co., assignees of Amedée Paillard.

The object of our invention is to provide a new and improved device for adjusting and locking said interchangeable cylinders in place, said improved locking device being of simple construction and occupying less space than the devices used for the same purpose heretofore.

The invention consists in the combination, with the latch-levers used for locking the removable pin-cylinders in place, of cam or wedge devices for adjusting and retaining the shaft in a proper position, all as will be described and set forth hereinafter, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a longitudinal view of the shaft of a pin-cylinder provided with our improved locking device, part of the cylinder being shown in section. Fig. 2 is a side view of the same, the shaft being shown in section. Fig. 3 shows a top view of the bolt and a section of the latch. Fig.

4 is a side view of the bolt, and Fig. 5 is a cross-sectional view of a modified construction. Fig. 6 is a side view of a latch lever and cross-section of the shaft showing another modification of our improvement. Fig. 7 is a cross-sectional view of a part of the same, and Figs. 8 and 9 are cross sectional views of modifications.

Similar letters of reference indicate corresponding parts.

The shaft A carries the cylinder B, which is mounted to slide on said shaft in the direction of its length, and is revolved by a pin, C, projecting from a disk, D, into an aperture in the end of the cylinder.

The shaft A is journaled in the standards E and F, both provided with latches G, which prevent lifting out the shaft. The bearings for the cylinder are so constructed as to permit a slight movement of the shaft in the direction of its length.

The shaft A is provided at one end with a shoulder, H, which fits against an offset, H', in the bearing F. At the other end the shaft is provided with a bevel-collar, I—that is, with a collar having a wedge-shaped cross-section, or a bevel on one side only, as may be desired. The latch G, pivoted in the standard E, is provided with a sliding-bolt, J, which is pressed in a direction toward the bevel-collar I by the spring J', interposed between the inner end of the bolt and a plate or cross-piece on the latch, said spring being contained in a suitable recess, as shown in Figs. 3 and 4. In place of the spiral spring shown the bolt may be connected to a flat spring, J², having one end secured in a recess in the latch G. While placing the shaft upon the bearings or removing it from the same the latches G are in the position shown in dotted lines in Fig. 2, and when the shaft is to be locked the latches are swung in the direction of the arrow a', Fig. 2, causing them to press down upon the bearings. At the same time the beveled end of the latch G, acting on the beveled collar I, presses the shaft in the direction of its length, as indicated by the arrows b', Fig. 1, until the shoulder H rests against the offset H' of the standard E. Any longitudinal play of the shaft is thus prevented, and the cylinder and

shaft will fit as well in the frame of the box as though they were made at the same time with the box.

It is practically impossible to make cylinder-shafts so precise and exact that they will fit in the bearings and have no longitudinal play whatever, but by using our improved device the longitudinal play of the shaft is prevented.

As shown in Figs. 6 and 7, the shaft A is provided with a wedge-shaped groove, K, into which a pin, L, passes, fastened on the springs secured to the bottom of the bearing, said pin passing up through a suitable aperture. This construction is the mechanical equivalent of the construction shown in Figs. 1 and 2, with the exception that the spring is in the bearing or standard instead of in the latch. The longitudinal play of the shaft is prevented by the pin L, the end of which is pressed into the groove K by swinging down the latch G for the purpose of locking the cylinder in place.

In the construction shown in Fig. 8 the spring is dispensed with and the longitudinal play of the shaft is prevented by cutting a V-shaped groove, K, in the same, and forming wedge-shaped tongues O, fitting in said groove on the bearing and on the latch G.

In the construction shown in Fig. 9 the latch

is provided with a bevel-collar, R, and the latch and bearing are provided with grooves S for receiving said collar.

In the cases described the shaft is locked in place in such a manner as to prevent any longitudinal movement, and said locking devices are either in the bearing or latches, thus occupying very little space and reducing the length of the music-box, and thereby reducing the weight and cost.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

A music-box having a removable pin-cylinder on a removable shaft, bearings for the said shaft, latches at said bearings for holding the shaft in the bearings, and springs acting on said shaft at said bearings and moving the shaft slightly in the direction of its length, substantially as shown and described.

In testimony that we claim the foregoing as our invention we have signed our names in presence of two subscribing witnesses.

OSCAR F. GUNZ.
ALFRED SUEUR.

Witnesses:

CARL KARP,
SIDNEY MANN.