

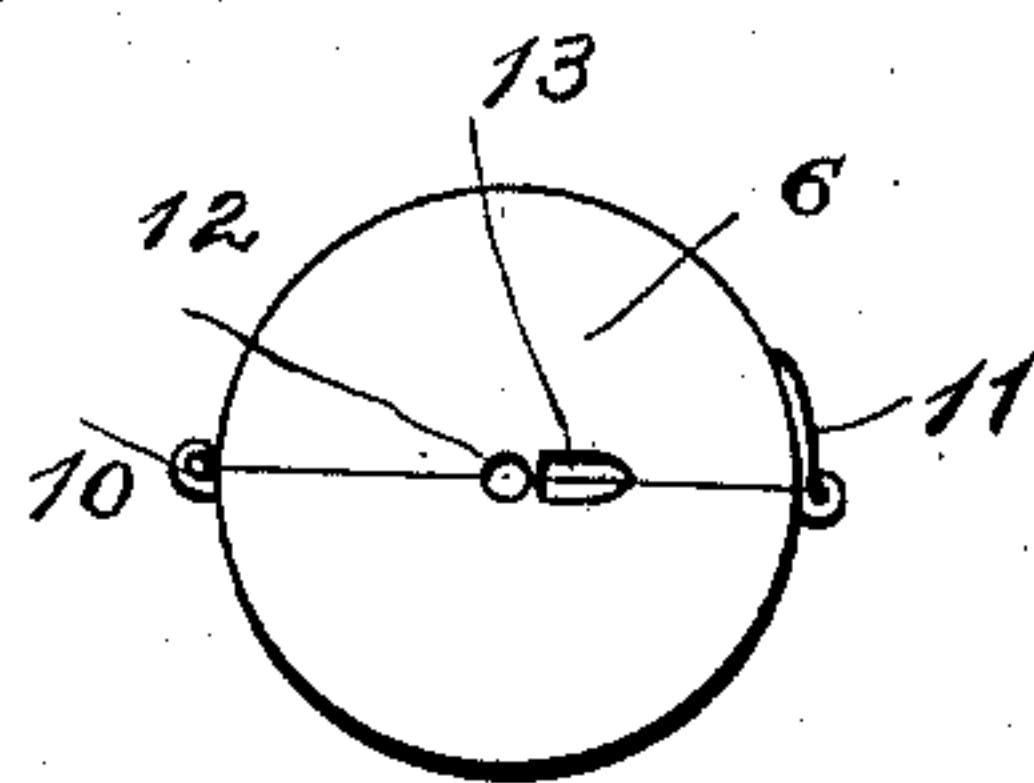
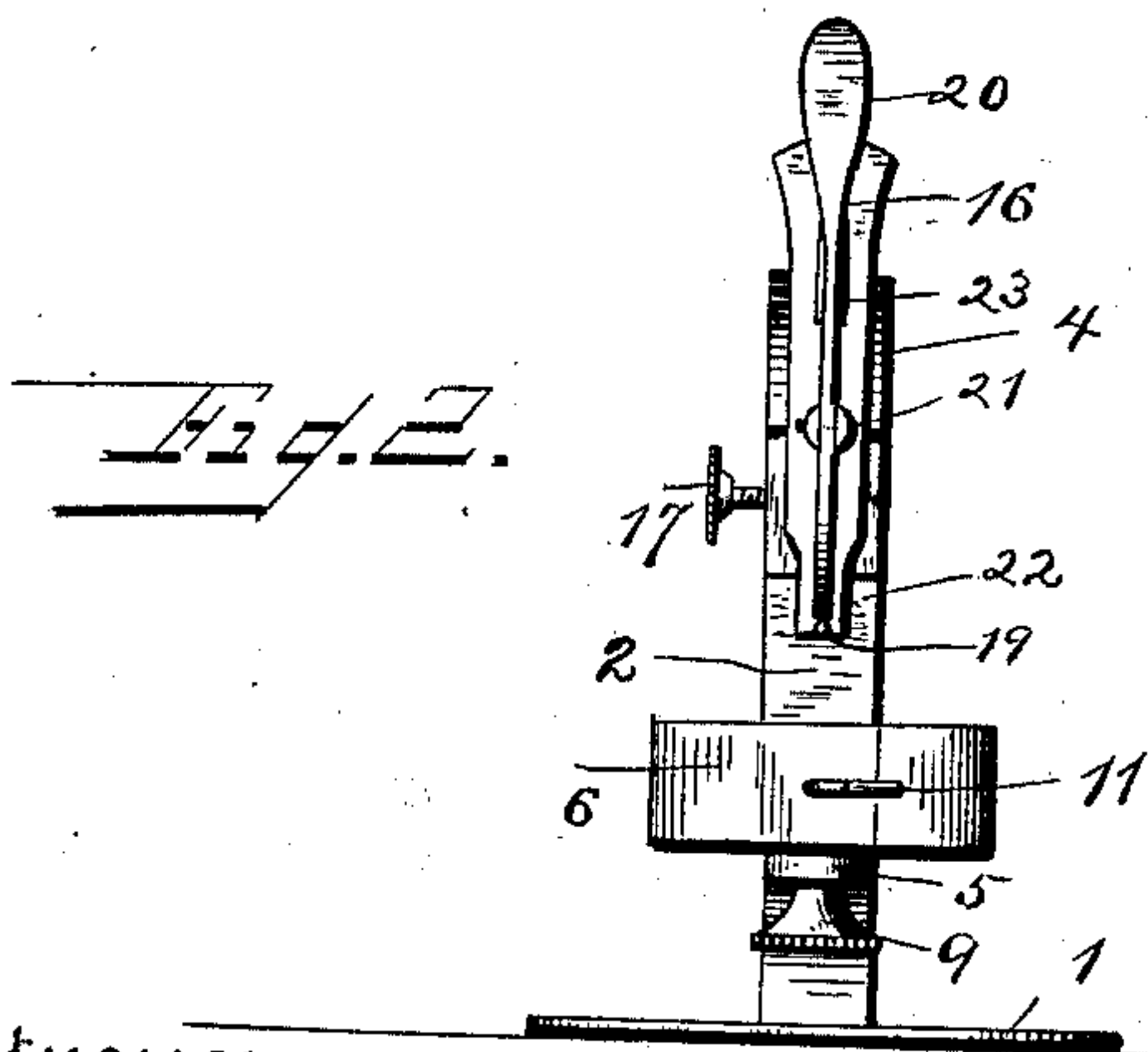
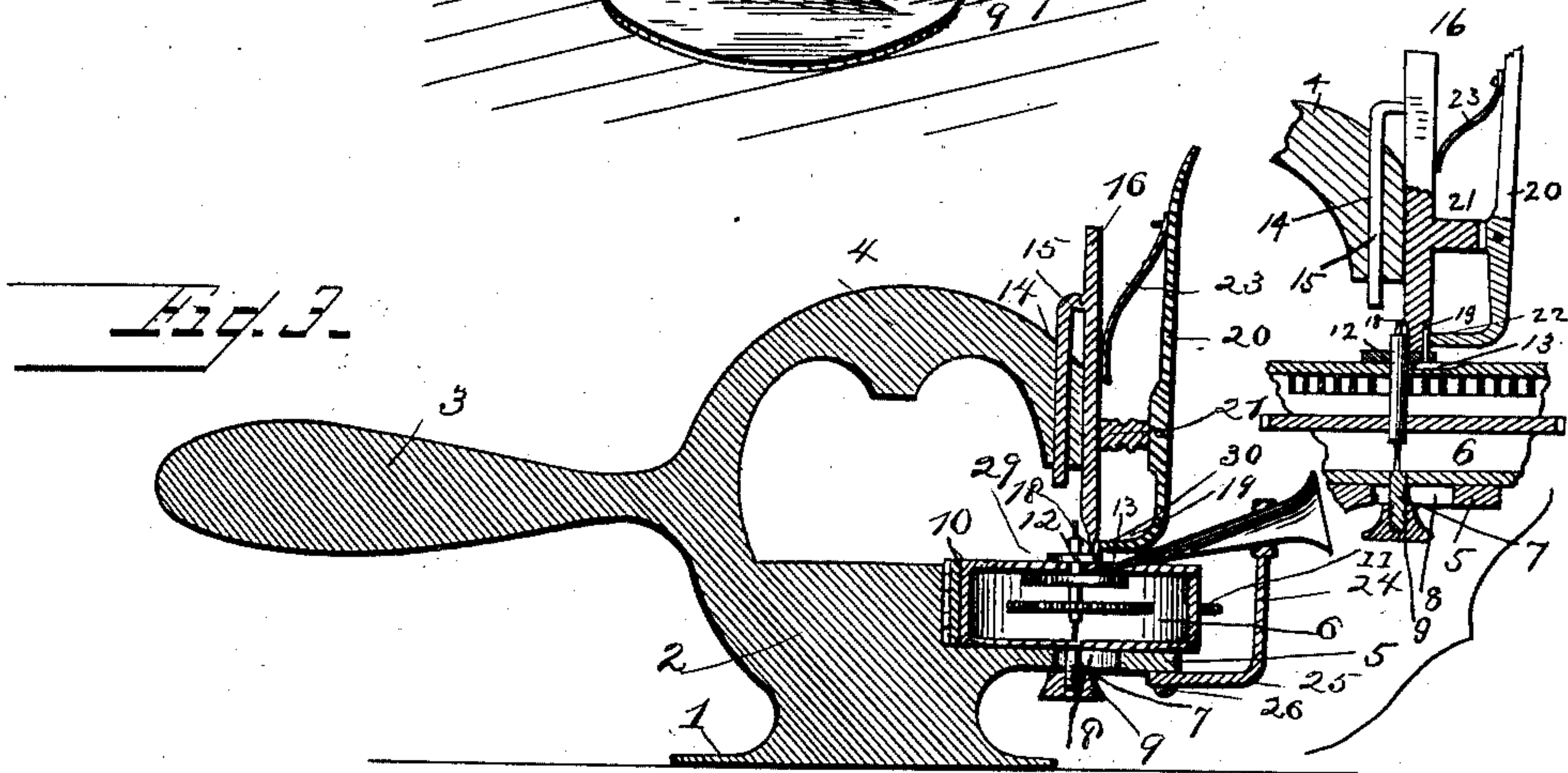
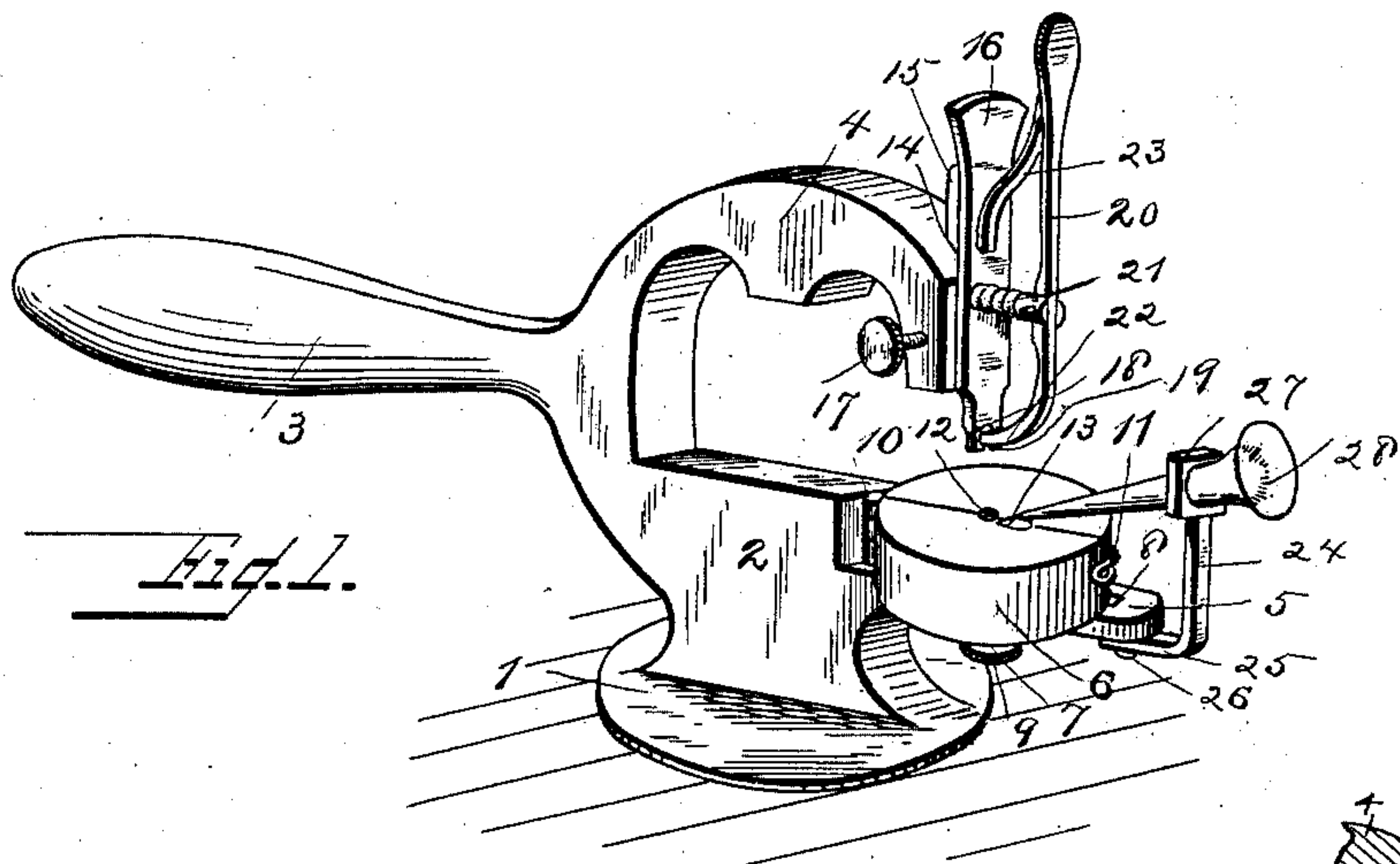
(No Model.)

D. H. ABNEY.

DEVICE FOR SETTING RUBY PINS IN WATCHES.

No. 371,019.

Patented Oct. 4, 1887.



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# UNITED STATES PATENT OFFICE.

DITON H. ABNEY, OF PILOT GROVE, MISSOURI.

## DEVICE FOR SETTING RUBY-PINS IN WATCHES.

SPECIFICATION forming part of Letters Patent No. 371,019, dated October 4, 1887.

Application filed May 11, 1887. Serial No. 237,861. (No model.)

*To all whom it may concern:*

Be it known that I, DITON H. ABNEY, a citizen of the United States, and a resident of Pilot Grove, in the county of Cooper and State of Missouri, have invented certain new and useful Improvements in Devices for Setting Jewel-Pins in Watch-Balances; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of my improved device for setting jewel-pins in the roller-tables of balance-wheels for watches. Fig. 2 is a front view of the same. Fig. 3 is a longitudinal vertical sectional view of the device, showing the balance-wheel in position and the jewel held in the jaws of the device; and Fig. 4 is a top view of the casing for holding the balance-wheel.

Similar numerals of reference indicate corresponding parts in all the figures.

My invention has relation to devices for setting jewel-pins in the roller-tables of balance-wheels of watches; and it consists in the improved construction and combination of parts of such a device, as hereinafter more fully described and claimed.

In the accompanying drawings, the numeral 1 indicates a foot-plate, to which the base of the frame is secured, the frame consisting, besides, of the base of a handle, 3, projecting rearward and a forwardly and slightly downwardly curved arm, 4. The base is provided with a longitudinally and vertically slotted arm, 5, projecting forward, and a cylindrical casing or barrel, 6, is provided with a bolt, 7, sliding in the slot 8 of the said arm, the said bolt projecting from the bottom of the barrel and having a thumb-nut, 9, upon it, which bears against the under side of the slotted arm and serves to adjust the barrel. The barrel is diametrically divided and has the two halves hinged together by a hinge, 10, and locked together at the free edge by a spring, 11, projecting over the said edge and bearing against the side of the other half, and the divided top of the barrel is provided with a central aper-

ture, 12, and with a small recess or depression, 13, at one side of the same.

The upper arm of the frame is formed with a vertical perforation, 14, in which an arm, 15, projecting rearwardly and downwardly from the back of a plunger, 16, slides, being held adjusted in the perforation by means of a set-screw, 17, passing through one side of the perforation and bearing against the arm, and the lower end of this plunger is cut away at the rear side to make a space above the central perforation of the barrel, as shown at 18, and has a truly vertical groove or notch, 19, in the forward side of its lower end, into which notch or groove the jewel-pin may be placed.

A lever, 20, is fulcrumed at its middle upon a stud, 21, projecting forward from the plunger, and the lower inwardly-bent end of this lever bears with its flat face 22 against the face of the lower end of the plunger, covering the groove or notch in the same, while its upper end has a flat spring secured to it with its upper end and bearing against the plunger with its lower rearwardly-inclined end, the said end of the spring 23 sliding upon the face of the plunger and serving to force the lower end of the lever to bear against the lower end of the plunger.

A bracket, 24, is secured at the inner end of its inwardly-bent arm 25 upon the end of the longitudinally-slotted arm of the frame upon a bolt or screw, 26, inserted through the perforated end of the arm and into the end of the slotted arm, and the upper end of this bracket is formed with an obliquely-perforated eye, 27, into which a funnel-shaped tube, 28, may be secured, the said tube contracting to a very small aperture or nozzle, which may be brought to point immediately over the recess in the top of the cylindrical casing.

When the device now is to be used, the balance-wheel is first removed from the watch, and after removing the remnants of the former jewel-pin, if one pin has been formerly inserted and broken off, the wheel is placed within the barrel, the hair-spring remaining upon the staff or arbor of the wheel, and the roller-table 29 resting above the aperture in the top of the barrel, the pivot of the staff projecting upward. The jewel-pin 30 is now placed in the groove or notch of the plunger,



which has been removed by loosening the set-screw, the flat end of the lever bearing against the flat side of the pin and clamping the same and the end of the pin projecting slightly below the end of the plunger. The plunger is now inserted in the frame and brought down against the roller-table, which is adjusted by moving and adjusting the barrel so as to bring the perforation for the pin to register with the end of the same, whereupon the plunger is secured by the set-screw, the end of the pin fitting in the perforation. A small quantity of shellac is now placed in the recess or depression, which is immediately under the perforation for the pin, and the device is inverted, the shellac being placed directly over the perforation if the pin does not penetrate the perforation entirely, while it is placed slightly to one side of the same if the pin projects through the perforation. The funnel-shaped tube or nozzle is now adjusted by means of its bracket turning upon the screw, so as to bring the wide outer end within reach of a blow-pipe and the narrow end immediately above the shellac, whereupon the flame of a suitable burner is blown by the blow-pipe through the nozzle, heating and melting the shellac, and after the shellac again has cooled and hardened the pin is secured and the wheel is ready to be again inserted in the watch.

It will be seen that the spring is protected from the heat applied to the shellac by the top of the barrel, and the pivot or point of the staff is protected by the cut-out lower end of the plunger, so that only the shellac will be exposed to the heat, and the nozzle will guide the flame from the burner and blow-pipe directly upon the shellac, and likewise prevent the heat from affecting the spring or any other part of the balance, although this nozzle may be dispensed with and the protection afforded by the barrel be deemed sufficient, the nozzle, however, adding to the effectiveness and safety for use of the apparatus.

The groove or notch in the plunger being vertical, it will be impossible to place the pin into the perforation in the roller-table in any other position to the same but at right angles to its surface, parallel to the pivot and staff.

By having the barrel adjustable the device may be used for wheels of different sizes having different distances between the staff and the perforation in the roller-table for the pin, and the pin will always be secured in the perforation in the right position, as the flat face of the pin will bear against the lower end of the lever, consequently facing outward.

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

1. In a device for setting jewel-pins in the roller-tables of balance-wheels in watches, the combination of a diametrically-divided barrel having its halves hinged together and provided with a suitable latch, and having a central perforation in the top and an eccentric depression or recess in the top, with suitable

means for holding the pin above the said depression, as and for the purpose shown and set forth.

2. In a device for setting jewel-pins in the roller-tables of balance-wheels in watches, the combination of a barrel having a central perforation in the top and an eccentric depression, with suitable means for holding the pin above the said depression, as and for the purpose shown and set forth.

3. In a device for setting jewel-pins in the roller-tables of balance-wheels in watches, the combination of a frame having a longitudinally-slotted arm projecting forward and having a vertical perforation above the said arm, a cylindrical barrel having a set-screw sliding in the slotted arm projecting from its bottom and having its diametrically-divided halves hinged together and locked by means of a suitable latch, and provided with a central perforation in the top and with an eccentric depression or recess at the side of the perforation, and a suitable clamp for the pin secured adjustably in the perforation of the frame for holding the jewel-pin above the roller-table supported upon the top of the barrel, as and for the purpose shown and set forth.

4. In a device for setting jewel-pins in the roller-tables of balance-wheels in watches, the combination of a frame having a handle and having a base provided with a foot-plate and with a longitudinally-slotted forwardly-projecting arm, and having an outwardly and downwardly curved arm provided with a vertical perforation, a diametrically-divided barrel having a downwardly-projecting central screw adjustably secured in the slotted arm by a thumb-nut, and having its halves hinged together and locked by a suitable latch, and having a central perforation in the top and a depression or recess at the side of the perforation, a plunger having a vertical notch or groove in the forward face of its lower end, and having the rear side of the lower end cut out, and having a rearwardly and downwardly bent arm sliding adjustably in the perforation of the frame by a set-screw in the perforation, and a lever fulcrumed upon a stud projecting from the face of the plunger, having its inwardly-bent lower end bearing against the notched or grooved end of the plunger, and having a spring for forcing its upper arm outward, as and for the purpose shown and set forth.

5. In a device for setting jewel-pins in the roller-tables of balance-wheels for watches, the combination of a barrel for holding the balance-wheel and for supporting the roller-table upon its top, having an eccentric depression in the top registering with the perforation for the pin, means for holding the pin in the perforation, and a tapering nozzle having its narrow end registering with the pin and having its wide end projecting outward, as and for the purpose shown and set forth.

6. In a device for setting jewel-pins in the roller-tables of balance-wheels for watches, the



combination of a frame having a barrel secured upon its lower arm formed with a perforation in its top for the passage of the staff of the balance-wheel, and with a recess in the top registering with the perforation for the pin, a clamp for holding the pin above the perforation in the roller-table, an arm adjustably secured with its eyed inner end upon a screw in the lower arm of the frame below the barrel, and having an upwardly-projecting bracket formed with an oblique eye in its upper end, and a funnel-shaped tube or nozzle

fitting in the eye and having its narrow end registering with the pin and perforation in the roller-table for the same, as and for the purpose shown and set forth. 15

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

DITON H. ABNEY.

Witnesses:

WM. H. RUCKER,  
STEPHEN L. STITES.