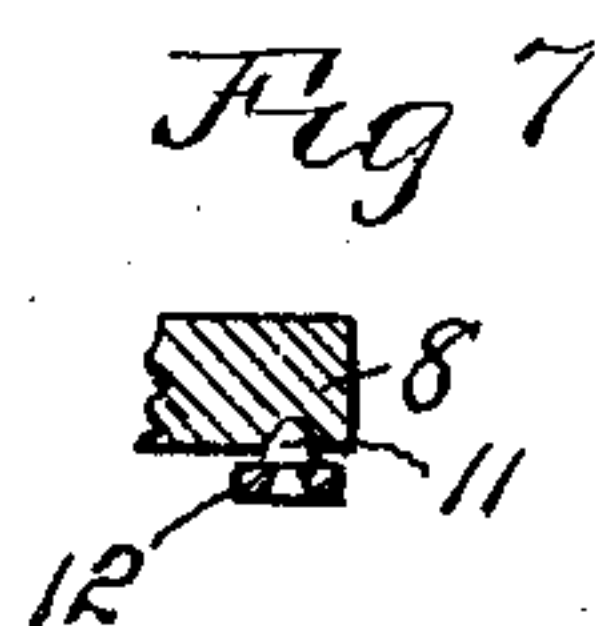
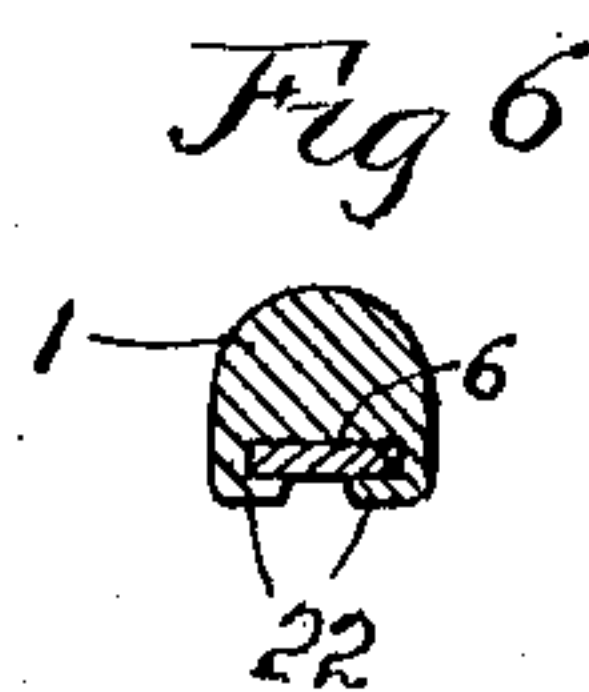
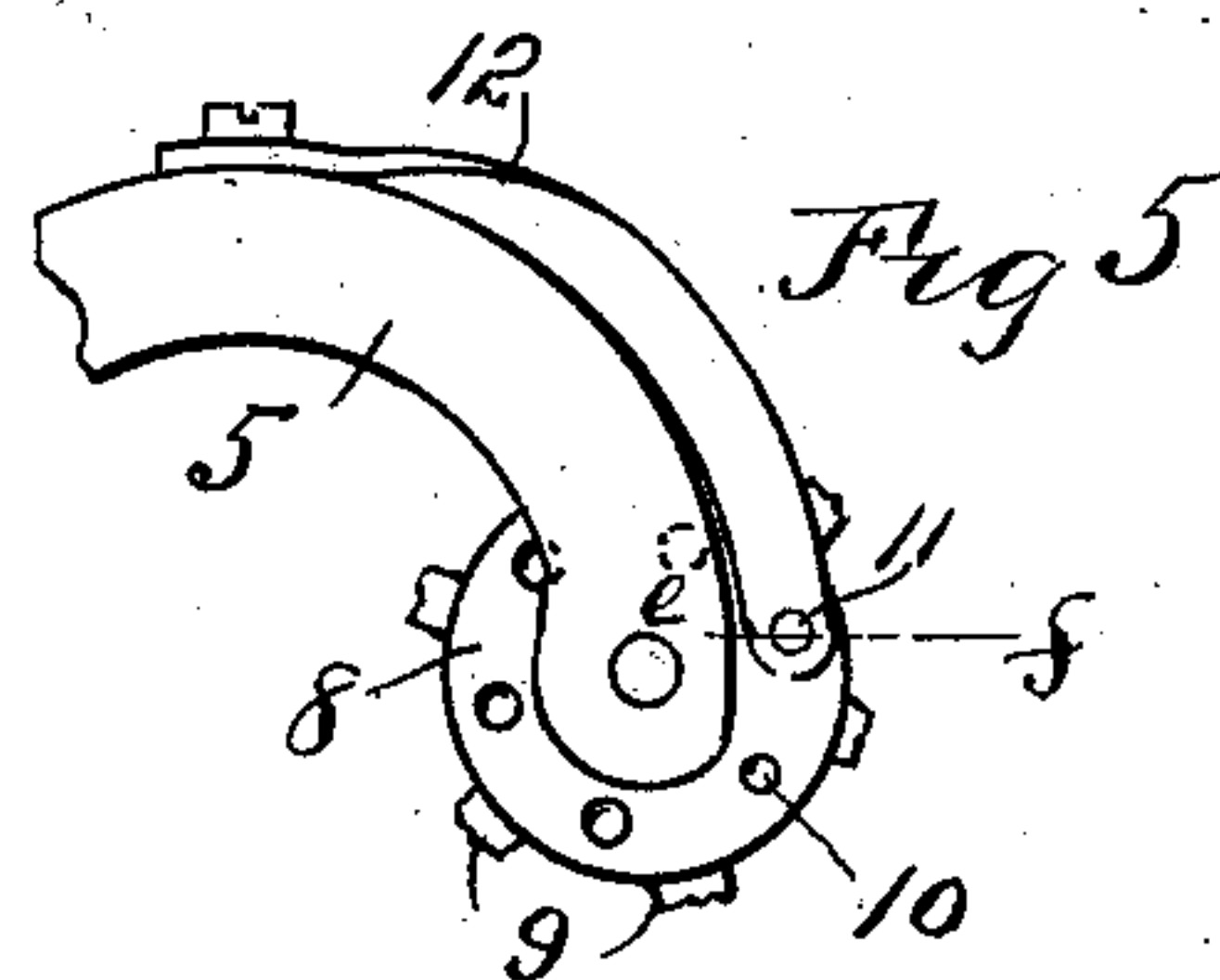
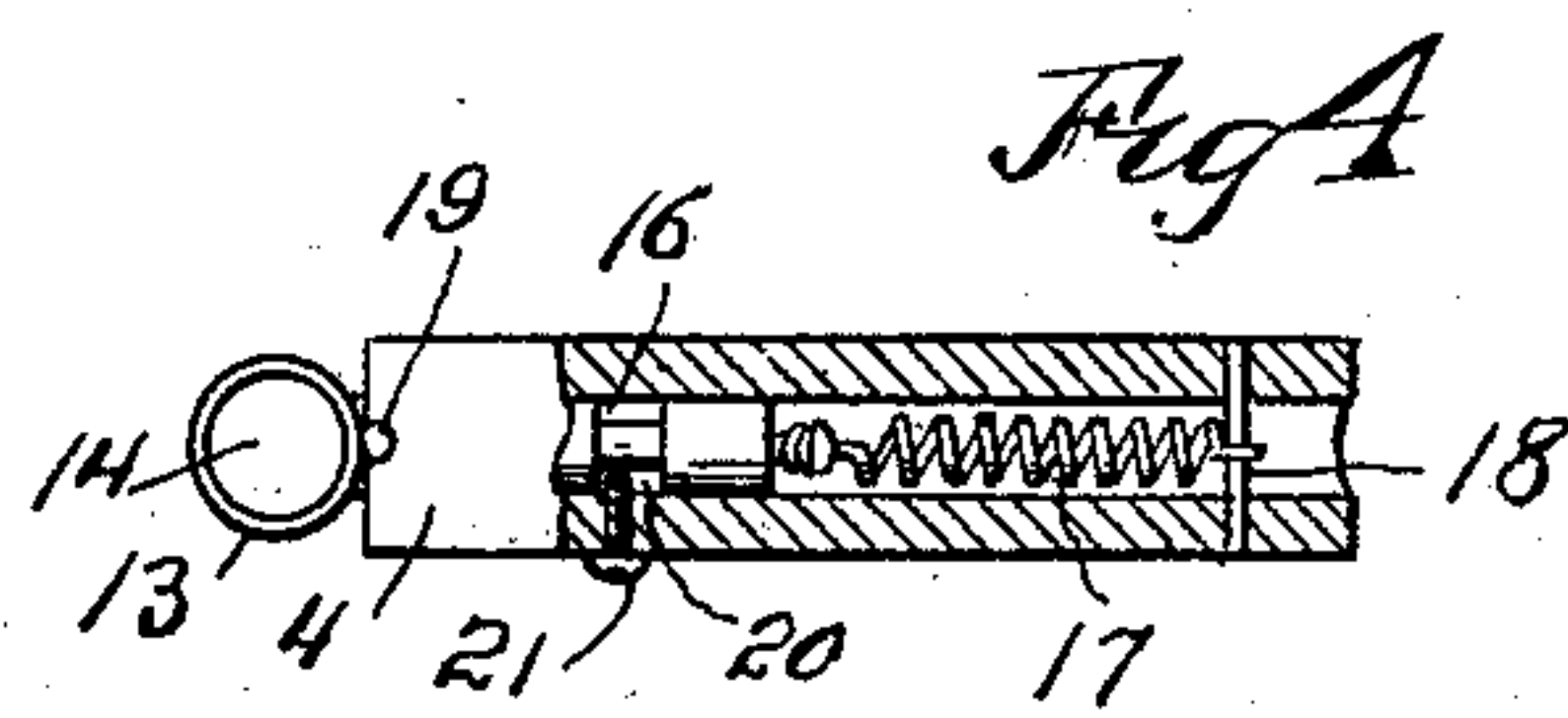
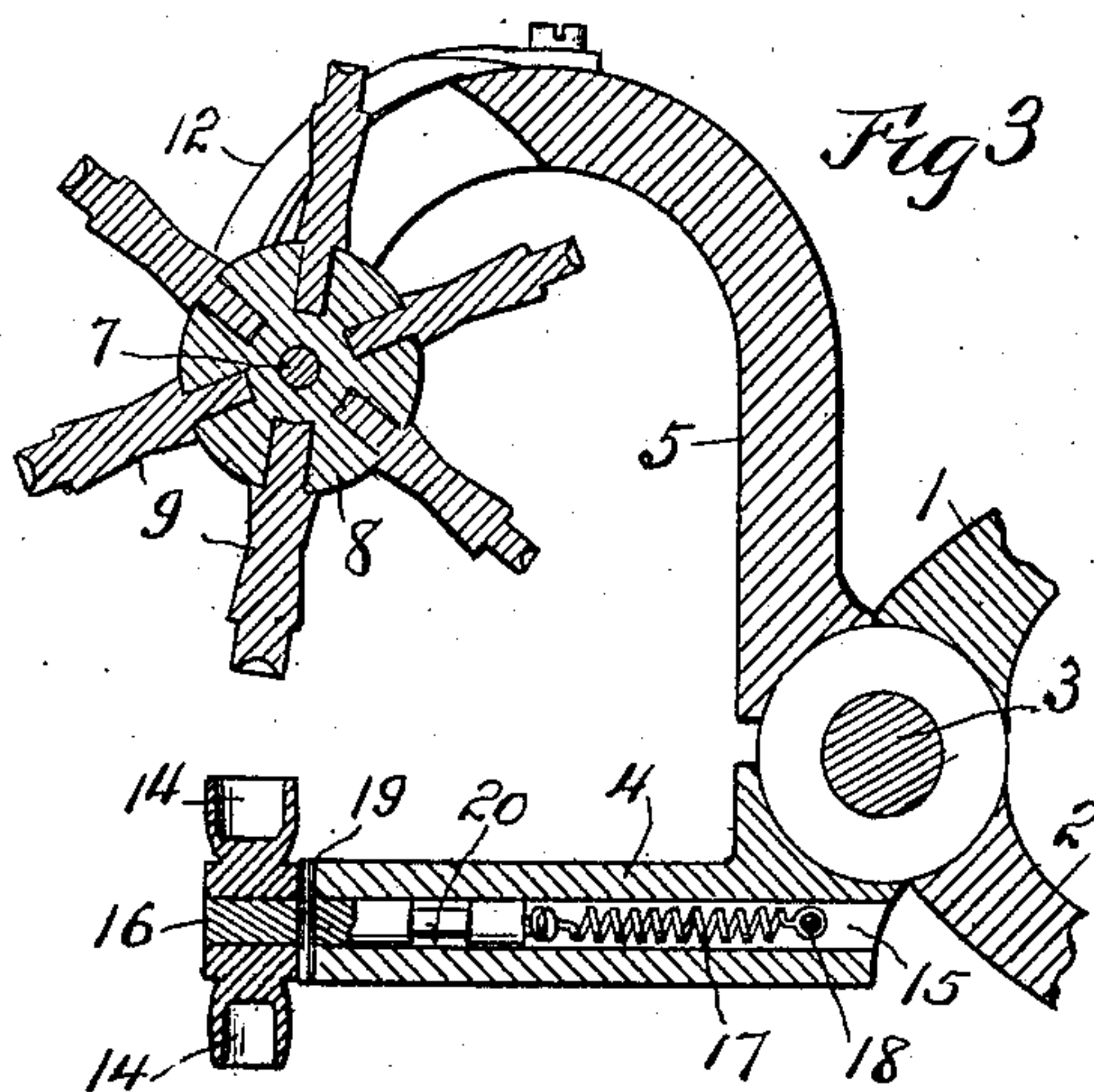
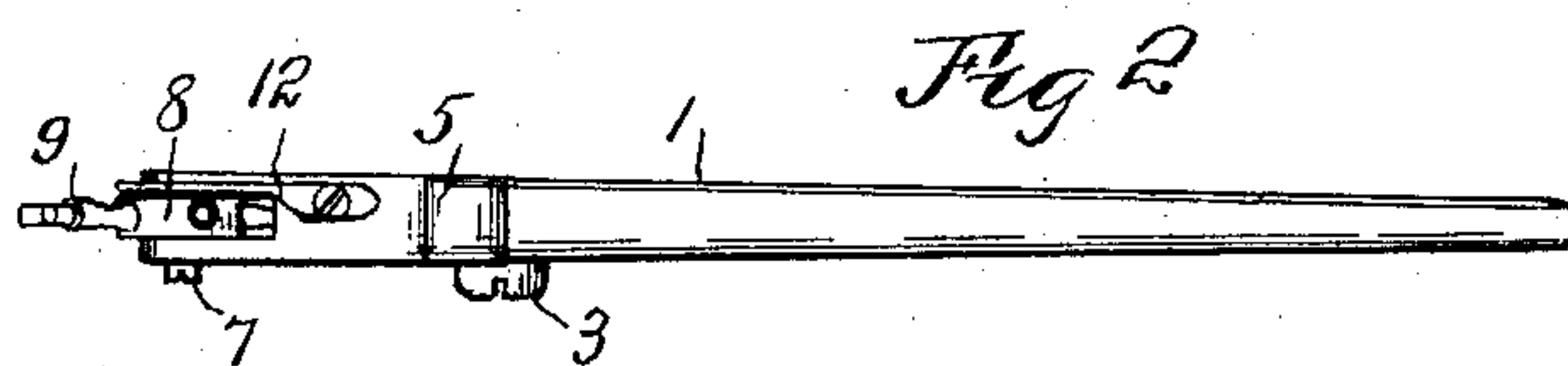
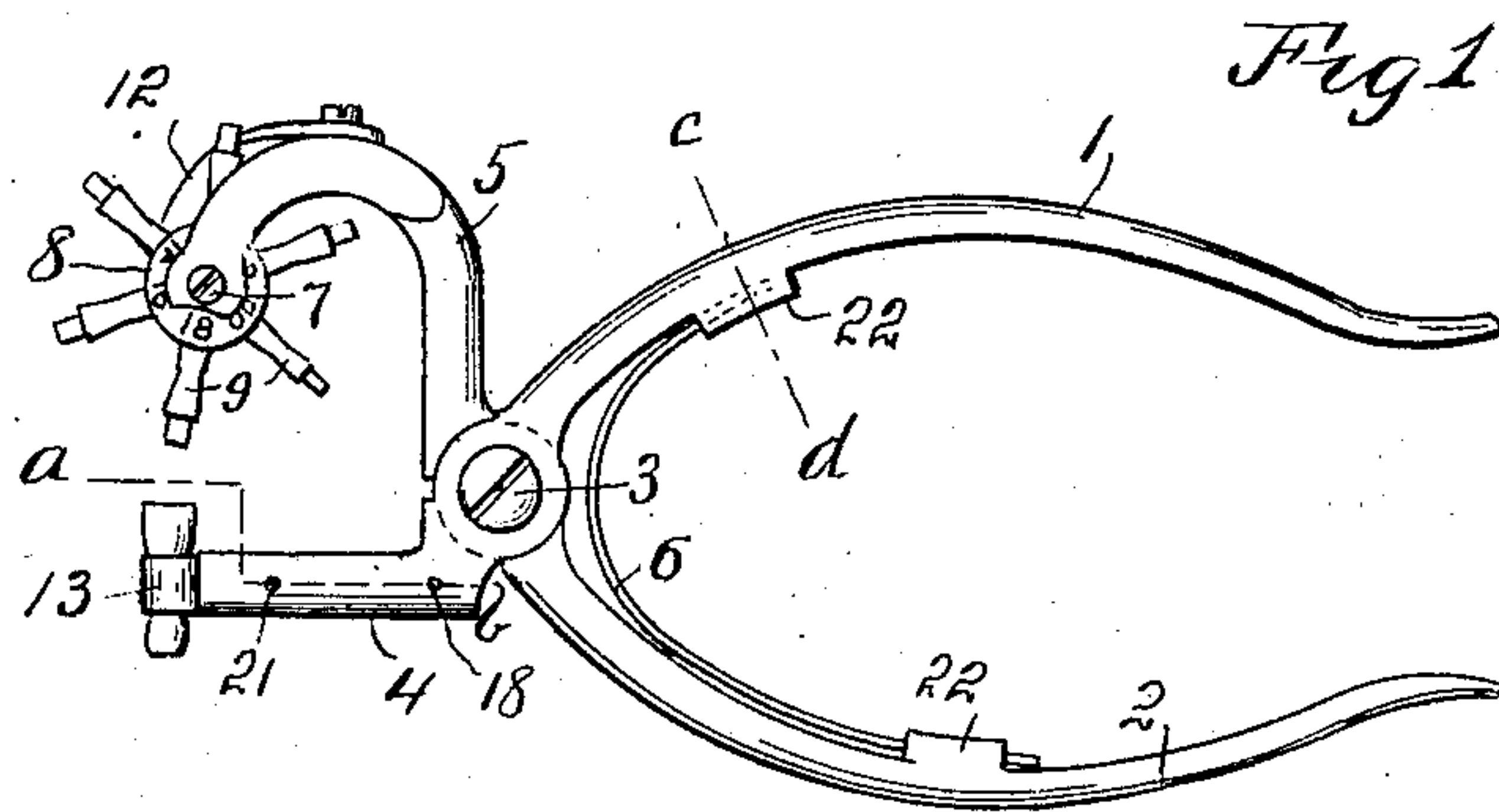


F. WINKLER.
JEWEL REMOVER AND REPLACER.
APPLICATION FILED MAR. 29, 1910.

994,229.

Patented June 6, 1911.



WITNESSES:
R. Hamilton
C. B. House

INVENTOR.
Frank Winkler
BY
Warren D. House
ATTORNEY.

UNITED STATES PATENT OFFICE.

FRANK WINKLER, OF KANSAS CITY, KANSAS.

JEWEL REMOVER AND REPLACER.

994,229.

Specification of Letters Patent.

Patented June 6, 1911.

Application filed March 29, 1910. Serial No. 552,269.

To all whom it may concern:

Be it known that I, FRANK WINKLER, a citizen of the United States, residing at Kansas City, in the county of Wyandotte and State of Kansas, have invented certain new and useful Improvements in Jewel Removers and Replacers, of which the following is a specification.

My invention relates to improvements in jewel removers and replacers.

The object of my invention is to provide a novel jewel remover and replacer with which jewels of watches may be readily removed or replaced without injuring the settings.

Another object of my invention is to provide a jewel remover with a die adapted to receive and retain the jewel after its extraction from the setting to prevent loss of the jewel.

My invention further provides in one tool an instrument adapted to remove or replace jewels of different sizes.

Other novel features of my invention are hereinafter fully described and claimed.

While my invention may be carried into effect with different means than those hereinafter shown and described, I have in the accompanying drawings illustrated the preferred form of my invention.

Figure 1 is a side elevation of my improved remover and replacer. Fig. 2 is a top view of the same. Fig. 3 is an enlarged vertical section, portions of the handles being broken away. Fig. 4 is a section on the broken dotted line *a-b* of Fig. 1. Fig. 5 is an enlarged side elevation of one jaw and the rotary member which carries the punches. Fig. 6 is a cross section on the dotted line *c-d* of Fig. 1. Fig. 7 is a cross section on the dotted line *e-f* of Fig. 5.

Similar characters of reference denote similar parts.

1 and 2 denote two members preferably pivoted to each other by a pivot screw or pin 3, and having respectively the jaws 4 and 5. A flat spring 6 of U form has its ends respectively secured to the inner sides of the members 1 and 2 and serves normally to force the jaws 4 and 5 apart, the members 1 and 2 being crossed. Relatively mounted on the jaw 5 by means of a transverse pin or screw 7 is a rotary disk member 8 to which are preferably radially secured a plurality of punches 9 having different diameters to correspond with the sizes

of the jewels which they are to remove or replace, and, preferably, each having at its outer end a cup for receiving the projecting portion of a jewel, to steady the punch and jewel. On one side of the rotary member 8 adjacent to said punches respectively are preferably provided, as shown in Fig. 1, characters denoting the size of the works upon which the punches are to be employed. On the opposite side of the rotary member 8 are provided a plurality of recesses 10 adapted each to receive a pin 11 secured to the free end of a spring 12 the other end of which is secured to the jaw 5. The spring 12 and pin 11 serve to releasably lock the rotary member in positions in which the punches 9 will be in operative position relative to a die 13, preferably rotatively mounted on the jaw 4 and which is provided with a plurality of recesses 14 adapted each to receive a jewel forced from a setting supported by the die 13.

For rotatably supporting the die 13 I preferably employ the following described mechanism:—The jaw 4 is provided with a longitudinal hole 15 in which is rotatably mounted a cylindrical bar 16 on which is rigidly secured the die 13. The bar 16 is longitudinally slidable in the hole 15 in which the bar is normally held in a retracted position by a coil spring 17 which is secured to a transverse pin 18 in the jaw 4 at the rear end thereof. In the forward or outer end of the jaw 4 is provided a transverse notch in which is adapted to be seated a transverse pin 19 secured in the bar 16. By withdrawing the bar 16 a sufficient distance the pin 19 is released from its notch and the bar may then be rotated so as to bring the desired recess 14 in operative position relative to the punches 9. When released the bar 16 will be retracted to a position in which the pin 19 will again enter its recess. To limit the out or forward movement of the bar 16 it is preferably provided with an annular groove 20 in which is mounted the inner end of a screw or pin 21 which is mounted transversely in the jaw 4.

To secure the spring 6 to the members 1 and 2 these members are each preferably provided with two inwardly extending projections 22 between which lies the spring 6, the projections of one of the members, as on member 1, being bent toward each other so as to clamp the spring.

In operating my invention, the die 13 is

adjusted to a position in which the proper sized recess 14 will be in the operative position, after which the rotary member 8 is turned so as to bring the punch having the proper diameter into the operative position. The setting, not shown, is then mounted on the die with the jewel disposed over the adjacent recess 14. The members 1 and 2 are then swung so as to bring the adjacent punch against the jewel which is forced by the punch into the adjacent recess 14. The jaws are then swung apart, thus permitting the removal of the setting and jewel, the latter having been retained in the recess. The jewels are placed in the settings by a corresponding operation of the device.

By the employment of my jewel remover and replacer the jewels are readily set or removed without injury to the settings and without liability of loss of the jewels.

Various modifications of my invention, within the scope of the appended claim, may be made without departing from its spirit.

Having thus described my invention, what I claim and desire to secure by Letters Patent, is:—

In a jewel remover and replacer, a pair of

members pivoted to each other and having cooperating jaws, one having a hole and a notch, a bar rotatively and longitudinally slidably mounted in said hole and having a peripheral groove, a pin extending into said groove and mounted in the jaw which has a hole, for limiting the outward sliding movement of the bar, a pin secured transversely to the bar for entering the notch to hold the bar in different positions to which it may be rotated, a coil spring located in said hole for retracting the bar to positions in which the pin carried by the bar may enter said notch, when the bar is rotated to the proper positions, a die carried by the bar and having radial recesses of different diameters, and punch carrying means mounted on the other jaw and having a plurality of punches of different diameters for cooperating with said recesses.

In testimony whereof I have signed my name to this specification in presence of two subscribing witnesses.

FRANK WINKLER.

Witnesses:

E. B. HOUSE,
E. A. BARTH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."