

959,831.

Fig. 1.

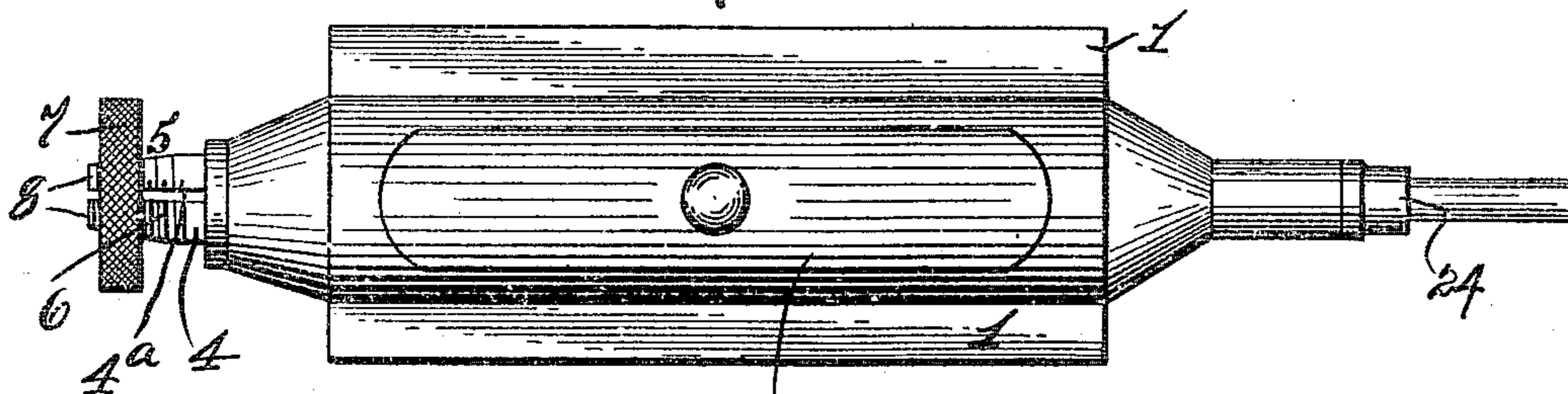


Fig. 2.

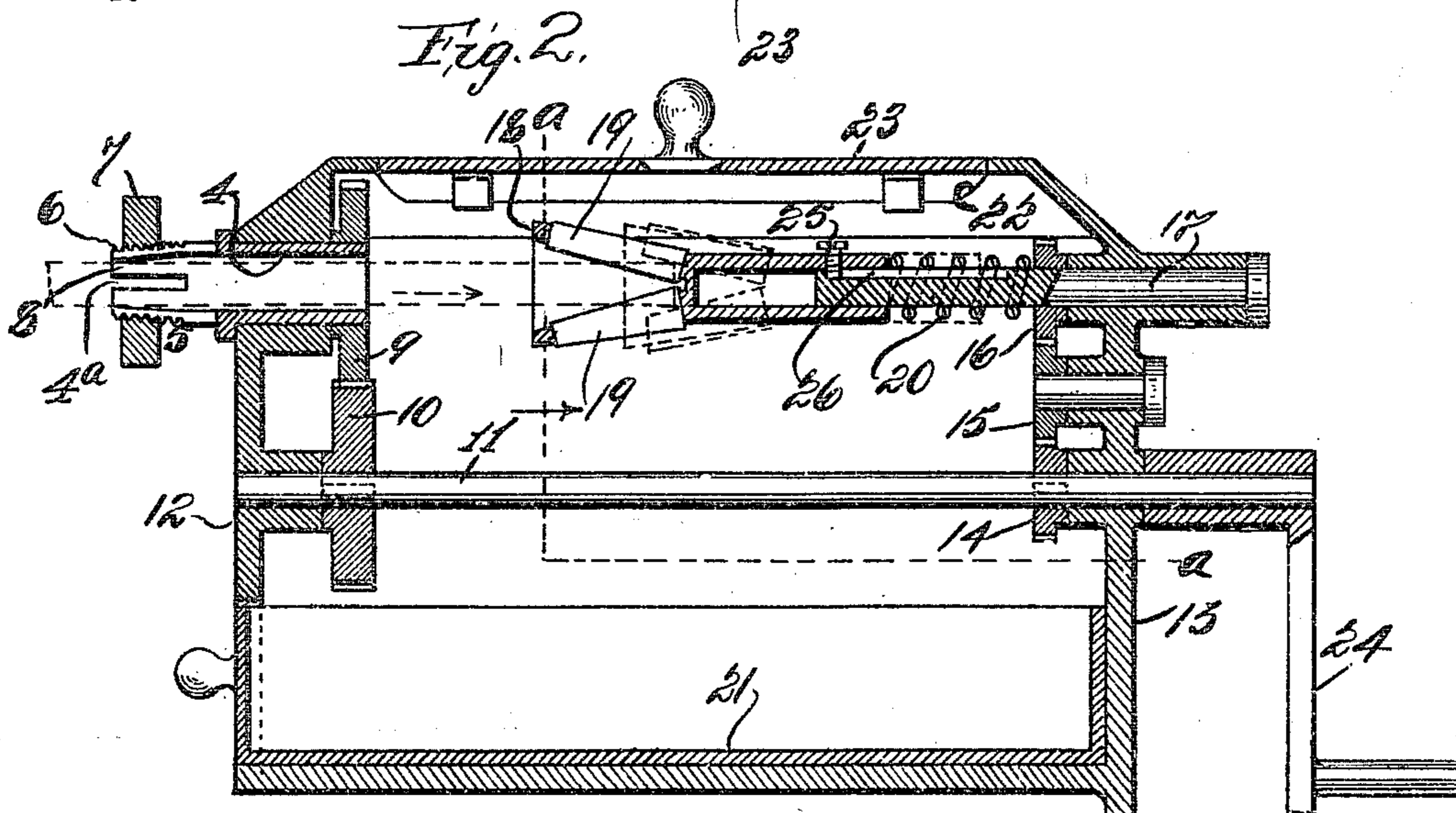
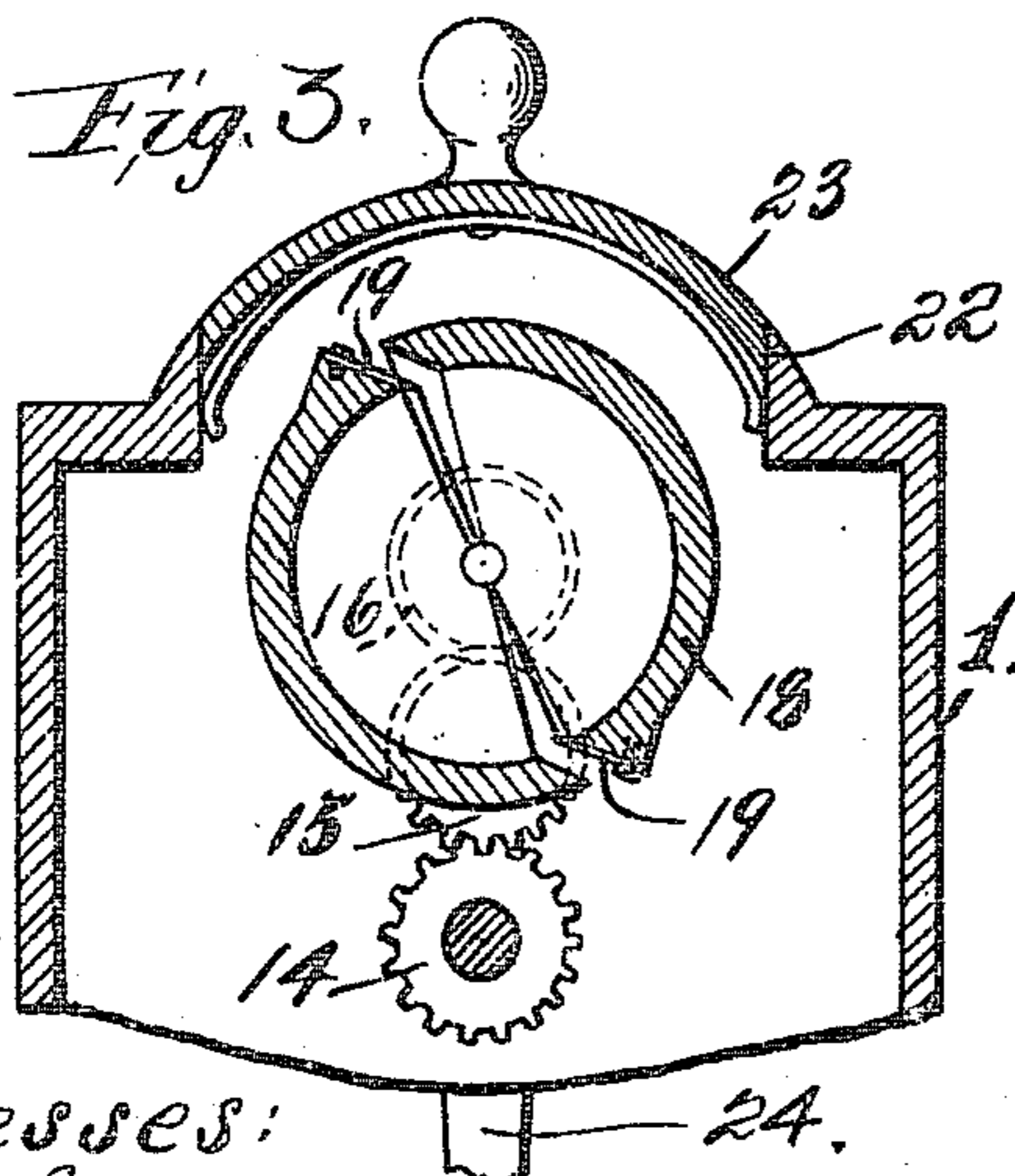


Fig. 3.



Witnesses:  
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by Wm. B. Block  
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# UNITED STATES PATENT OFFICE.

FREDERICK ALEXANDER, OF BROOKLYN, NEW YORK.

PENCIL-SHARPENER.

959,831.

Specification of Letters Patent.

Patented May 31, 1910.

Application filed April 2, 1909. Serial No. 487,440.

*To all whom it may concern:*

Be it known that I, FREDERICK ALEXANDER, a citizen of the United States, residing at Brooklyn, Kings county, in the State of New York, have invented certain new and useful Improvements in Pencil-Sharpeners, of which the following is a clear, full, and exact description.

This invention relates to an improved automatic pencil sharpener, the object being to provide such a device that will, after a pencil has been placed therein, automatically cause the cutter to feed or advance in a manner to cut away the wood, leaving an exposed sharpened lead.

To produce a marketable device of this character, I have eliminated complicated parts and instead utilize simple devices that are cheaply manufactured, strong and durable.

I will now proceed to describe my invention, and finally claim the novel features of which it is composed, reference being had to the accompanying drawing forming part hereof, wherein:—

Figure 1 is a top plan view of my improved device; Fig. 2 is a vertical central sectional view thereof, certain minor parts being shown in elevation; and Fig. 3 is a cross-sectional view taken on a line *a—o* in Fig. 2.

Referring to the drawing 1 indicates the casing of my improved sharpener, which is provided with a bracket 2 carrying a clamp-screw 3, which is provided for the purpose of securing the device to a suitable support such as a desk, table or shelf.

In one end of the casing 1, I rotatably mount a bushing 4, which is adapted to act as an adjustable chuck to hold a pencil. In order to adapt the bushing for the purposes of a chuck, I cut the outer end of the said bushing as at 4<sup>a</sup>. To cause the severed end of the bushing to close, I taper the same as at 5, thread the tapered end as at 6, and mount a thumb-nut 7 on said threaded end. It is quite obvious that, when the thumb-nut 7 is operated to move inwardly, the severed end of the bushing will come together and firmly grip the pencil which is carried by the said bushing. The severed end of the bushing will open automatically when the thumb-nut is moved outwardly, due to the resiliency of the tangs 8.

As the bushing 4 is intended to rotate, I mount upon the inner end thereof a gear 9,

which is adapted to mesh with, and to be rotated by, a pinion 10, the said pinion being carried by a rotatable shaft 11. The shaft 11 is rotatably mounted in the end members 12 and 13 of the casing 1.

Adjacent the end opposite to the pinion 10, of the shaft 11, I secure a pinion 14 which meshes with an idle gear 15, the said idle gear being adapted to mesh with, and to rotate a gear 16, which in turn is carried by a spindle 17.

Upon that part of the spindle 17, which is within the casing 1, I slidably mount a cone 18, which in turn is provided with cutters 19, positioned at an angle adapted to cause the said cutters to cut away the wood of a pencil without tearing it. Between one end of the cone 18 and gear 16, and upon the spindle 17, I mount a coil spring 20, which is adapted to advance or feed the cone 18 outwardly, or toward the bushing 4, during the operation of sharpening a pencil.

To catch the chips of wood, and lead dust, I provide a drawer 21, which is removably retained in the casing 1. The top of the casing 1 is provided with an opening 22, which is normally closed by a removable cover 23.

To sharpen a pencil, I place it in the chuck or bushing 4 and turn the thumb-nut 7, to cause the tangs 8 to come together and firmly grip the pencil (see dotted lines in Fig. 2). When I place the pencil in the chuck, I push it inwardly, not only enough to impinge the cutters 19 of the cone 18, but also enough to force the cone backwardly to the full extent, thereby placing the spring 20 under an increased tension. The device will then be in condition to fulfil its function.

After a pencil has been placed in position as above described, I rotate the shaft 11 by means of the handle 24, whereby the cone 18 and clutch 4 will be rotated in opposite directions. The cone 18 is rotatably connected to the spindle 17 by means of a threaded pin 25, which is adapted to enter, and slide within a key-way 26, in the said spindle. As the same is turned the cutters will cut away the wood from the lead of the pencil. As the wood is cut away the spring 20 will gradually force the cone outwardly, thereby effecting an automatic feed or advancement. The cutters will continue to cut until the pencil is sharpened to conform to the shape of the cone 18.

One of the novel features of my improved

sharpener is the fact that the pencil is held against longitudinal movement, and the cutters caused to feed automatically, whereby the necessity of feeding the pencil by hand is obviated. Another feature of my device is that the pencil and sharpener are rotated in opposite directions, whereby the act of sharpening is quickly accomplished.

In the usual form of pencil sharpeners the pencil is held and pressed toward the sharpening element by the hand. My improved device obviates this necessity.

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

In a pencil sharpener, a rotatable chuck, a gear carried by said chuck, a rotatable

spindle, a gear carried thereby, a cone carried by said spindle, cutters carried by said cone, said cone being adapted for advancement along said spindle, a spring adapted to advance said cone, an idle gear in mesh with the gear on said spindle, an operating shaft, pinions carried by said shaft, adapted to mesh with the gear on said chuck and said idle gear, and a handle carried by said operating shaft.

Signed at New York city, N. Y., this 30th day of March 1909.

FREDERICK ALEXANDER.

Witnesses:

ESTELLE HAMBURGER,  
EDWARD A. JARVIS.