

No. 765,671.

PATENTED JULY 26, 1904.

R. T. MERRILL.
MECHANICAL ERASER.
APPLICATION FILED DEC. 31, 1902.

NO MODEL.

Fig. 1.

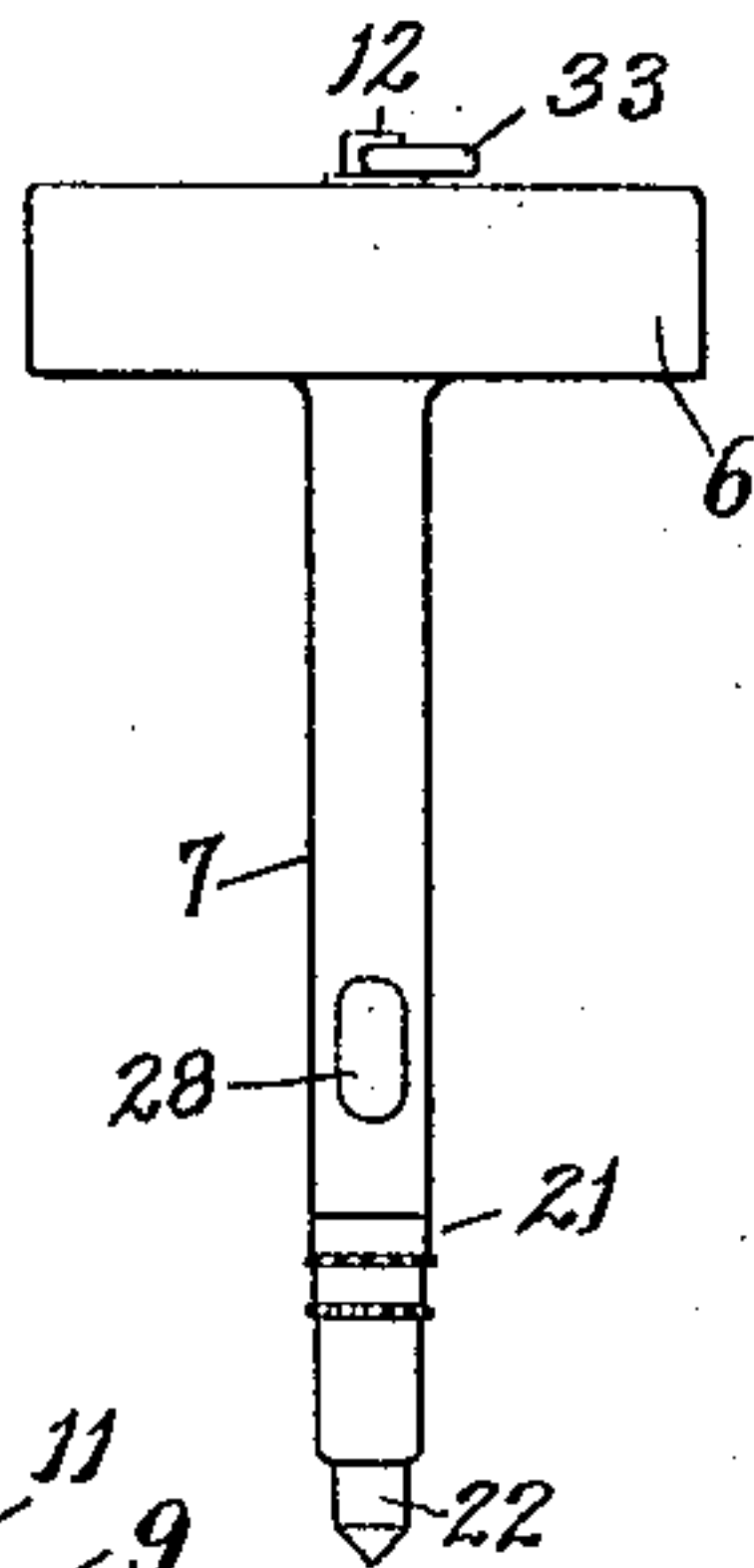


Fig. 2.

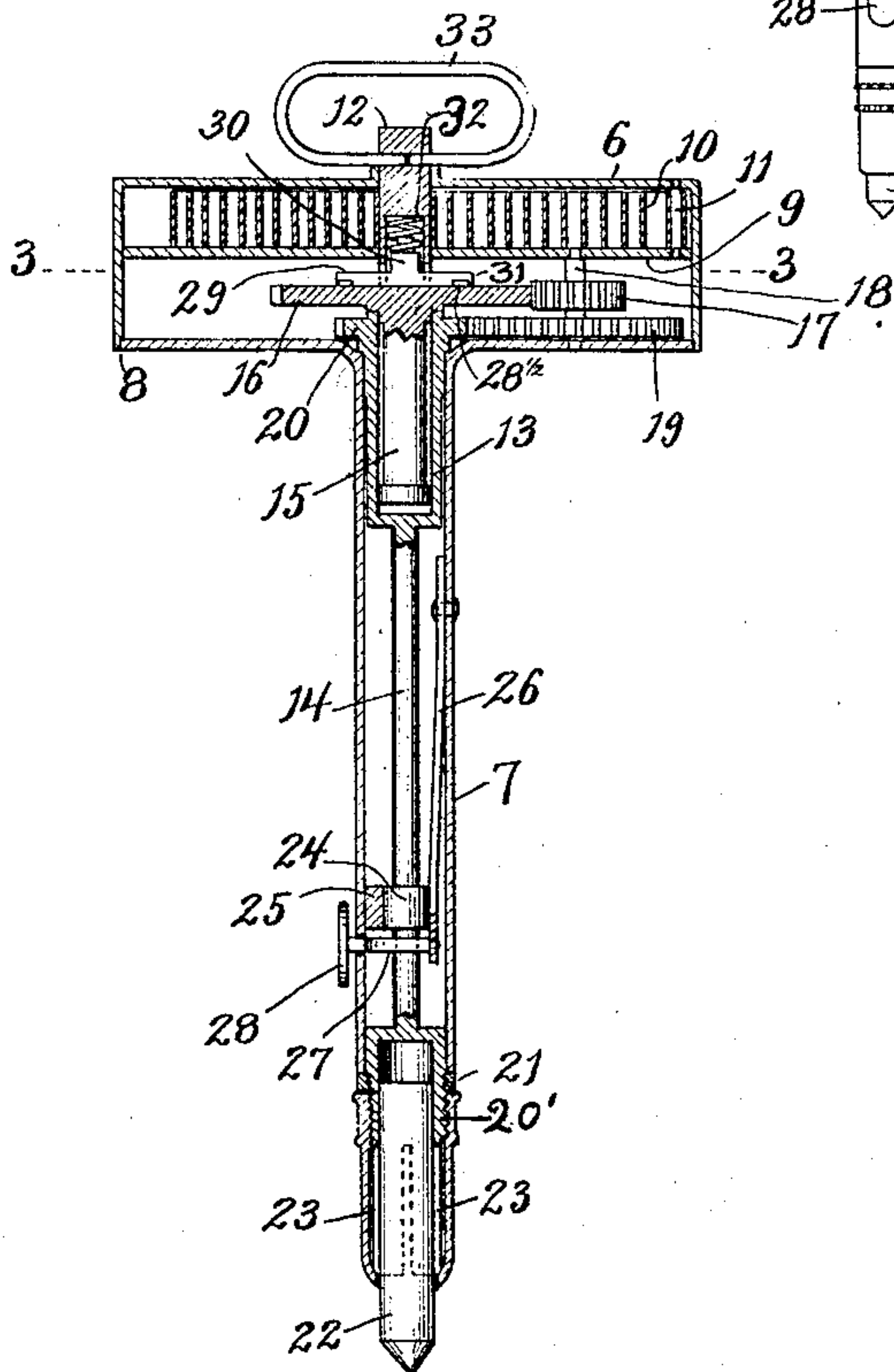


Fig. 3.

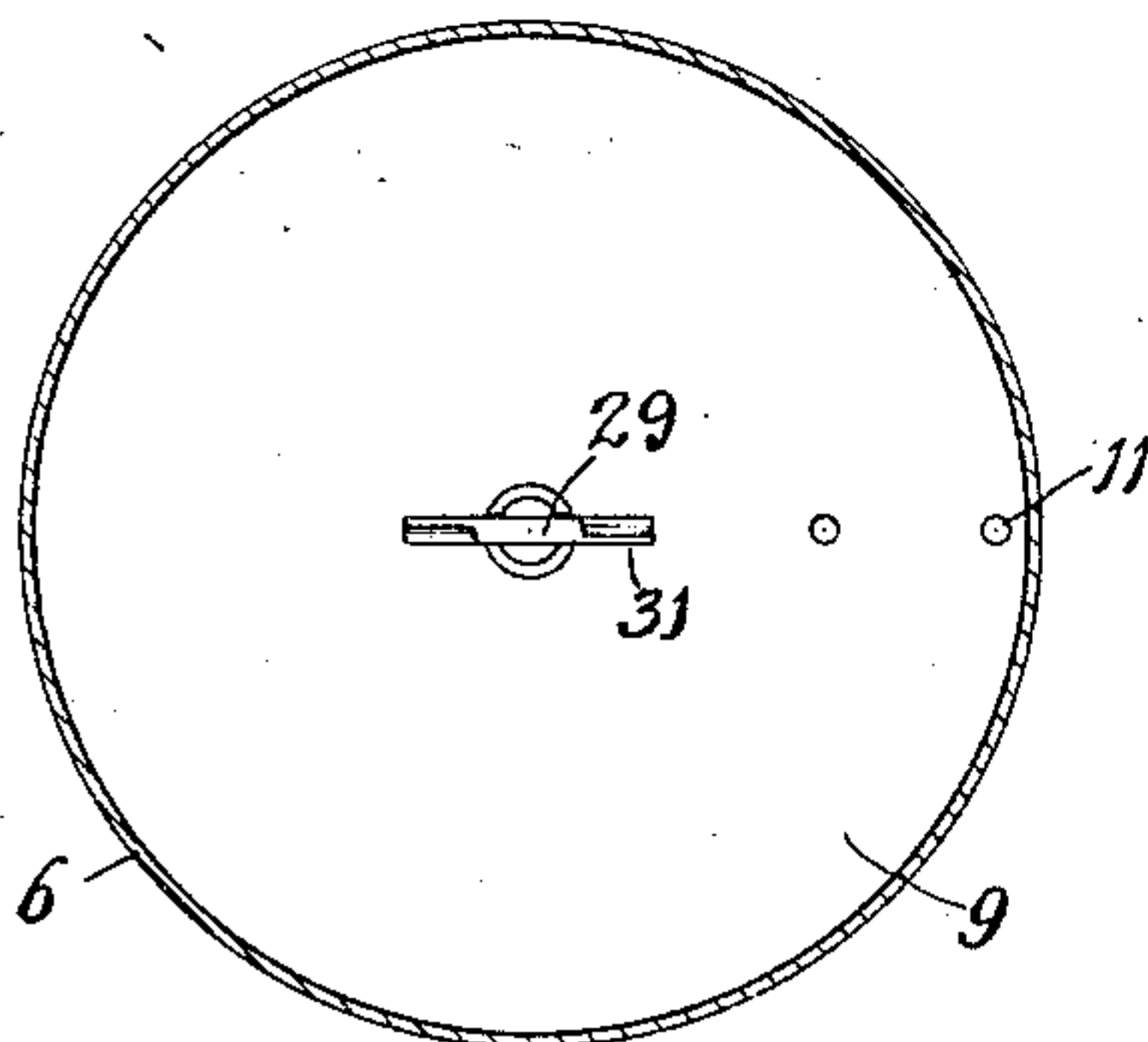


Fig. 4.

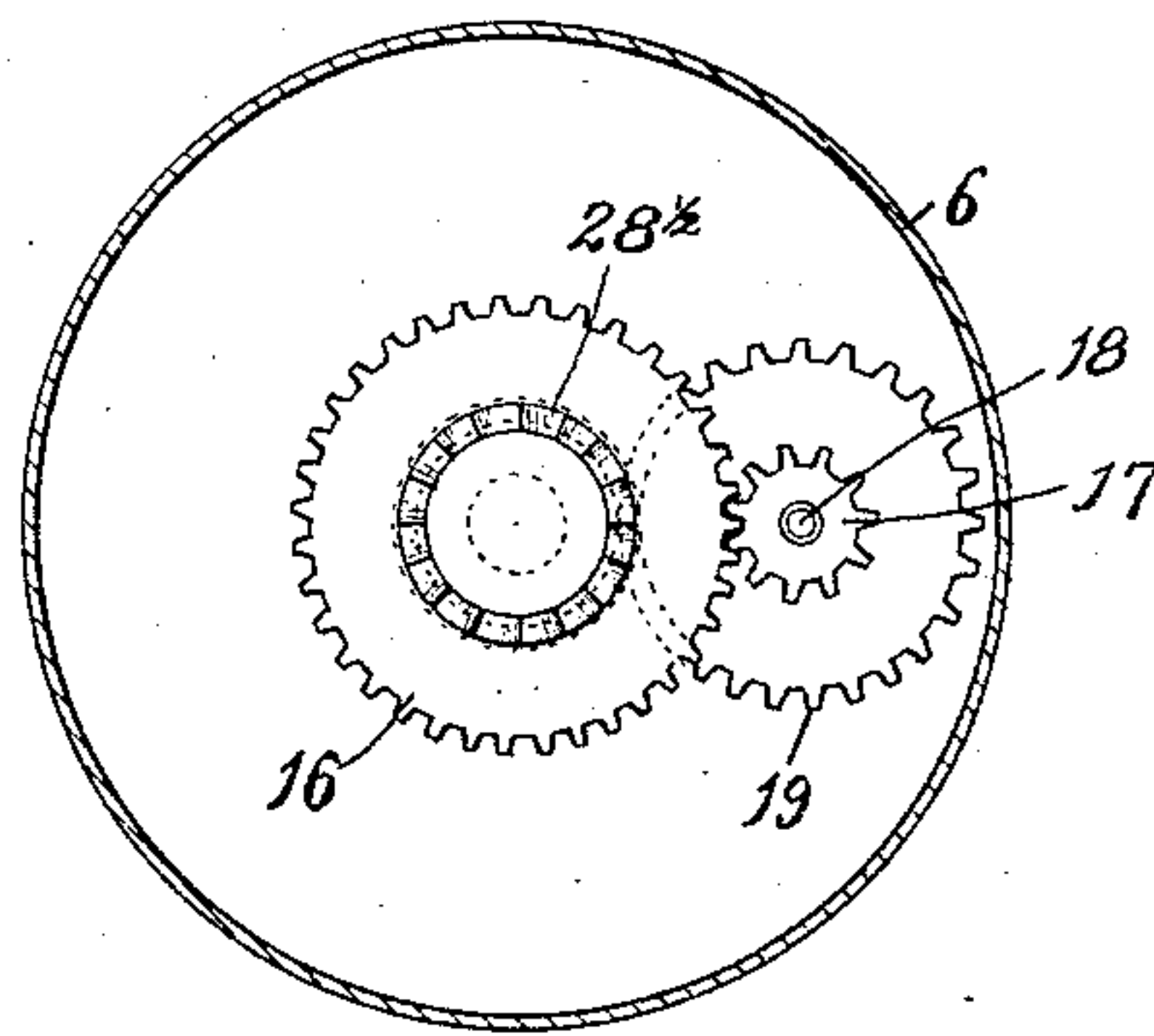
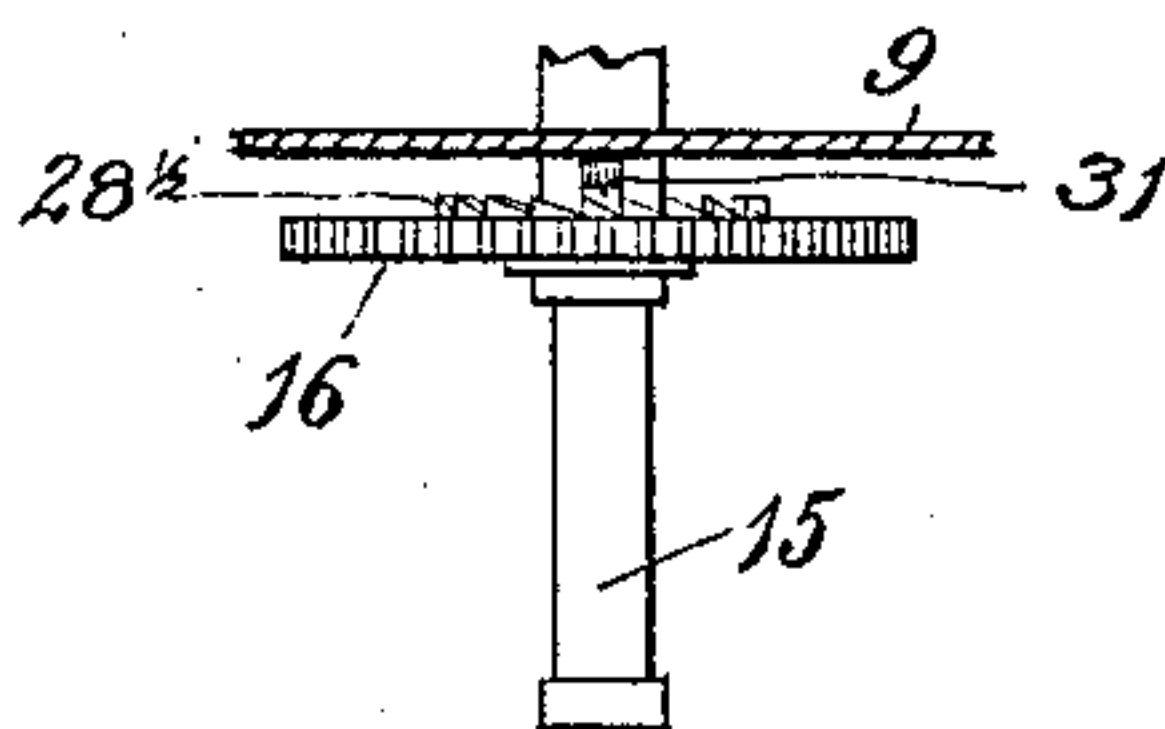


Fig. 5.



Witnesses:
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UNITED STATES PATENT OFFICE.

ROBERT T. MERRILL, OF MILWAUKEE, WISCONSIN.

MECHANICAL ERASER.

SPECIFICATION forming part of Letters Patent No. 765,671, dated July 26, 1904.

Application filed December 31, 1902. Serial No. 137,296. (No model.)

To all whom it may concern:

Be it known that I, ROBERT T. MERRILL, a citizen of the United States of America, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Mechanical Erasers, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

This invention relates to improvements in mechanical erasers, the object of the invention being to produce a mechanical eraser of simple construction, employing a revoluble rubber or erasing element, a spring for revolving said erasing element, and a brake or governor for controlling the revolutions of said erasing element. This and other objects I attain by means of a device embodying in its make-up elements constructed and arranged as described in the specification and illustrated in the drawings presented herewith.

In the drawings, Figure 1 is a view in front elevation of a device embodying this invention. Fig. 2 is a side sectional elevation of said device. Fig. 3 is a cross-sectional view taken on line 3 3 in Fig. 2 looking up toward the top of the device. Fig. 4 is a cross-sectional view taken on line 3 3 in Fig. 2 looking toward the bottom of the device. Fig. 5 is a detail view of a portion of the device.

Throughout the several views like elements are denoted by like characters.

The device preferably consists of a housing for the mechanisms, formed in two sections 6 and 7, secured together at 8 in any suitable manner. Section 6 of the housing, which is annularly formed, contains a partition-plate 9, between which and the top of the housing a flat coil-spring 10 is located. Spring 10 is formed like a clock or watch spring, is spiral, and expands and contracts in one plane. At its outer end it is secured to the plate 9 and top of the housing by a pin 11 or by other suitable means. The inner end of the spring is secured to a revoluble stem 12, journaled in the top of the housing and the plate 9.

Journaled within a hollow enlarged portion 13 of a revoluble shaft 14, carried in an elongated cylindrical projection of section 7 of

the housing, is the extended hub 15 of a gear-wheel 16. Gear-wheel 16 meshes and works with a pinion 17, mounted on a shaft 18, journaled in the plate 9 and section 7 of the housing. Shaft 18 carries a gear-wheel 19, which meshes and works with a gear-wheel 20, formed at the upper end of the enlarged portion 13 of shaft 14.

Shaft 14 at its lower end 20' is enlarged and exteriorly is screw-threaded to receive a nut 21, which prevents the shaft from moving into the housing more than the desired distance. The interior of the enlarged lower portion of the shaft is formed hollow to receive a rubber or other erasing member 22, and the extreme lower portion of the enlarged portion of the shaft is split, as shown at 23, and adapted to be contracted to tightly grip rubber 22. Threaded onto the enlarged portion below nut 21 is a hollow tip, adapted when screwed onto said enlarged portion to surround its lower split end and cause its split portions to move into close contact with the rubber.

Above the enlarged lower portion of shaft 14 said shaft is provided with an annular collar 24, rigidly secured thereto or formed integral therewith in the nature of a shoulder. Between said collar and one side of the cylindrically-formed portion of the casing a friction-block 25 is included, and a flat spring 26, secured to the interior of the casing, is adapted to normally bear against collar 24 to hold the same in contact with friction-block 25 to prevent the rotation of shaft 14. Spring 26 is adapted to be moved out of contact with collar 24 by means of a bifurcated relief element 27, which carries on its outer end projecting through an opening in the casing formed therefor a button or key 28. The furcate parts of element 27 surround shaft 14 and at their inner ends are secured to the free end of spring 26.

Gear-wheel 16 is provided in its upper face with a series of annularly-extending ratchet-teeth 28½, and a pawl member 29, having a portion 30 extending up into a chambered-out portion of stem 12, is provided with a pawl cross-pin 31, extending on either side of portion 30, having its under side beveled, as

shown in Fig. 3, to allow it to ride up the inclined faces of the ratchet-teeth 28½. Pawl member 29 is held in contact with ratchet-teeth 28½ by means of a spring 32, confined 5 in the chambered-out portion of stem 12 and bearing against the portion of said pawl member extending into said chambered-out portion.

The stem 12 is provided with a key-head or 10 hand-grasp 33, by means of which spring 10 is wound up, and the brake produced by collar 24 and spring 26 will prevent the operation of said spring in unwinding until said brake is released. In operating the device 15 the speed of rotation of the erasing element is governed by the brake mechanism.

It will be understood that various structural changes may be made in this device 20 from the construction shown in the drawings without departing from the spirit of this invention.

Having thus described my invention, what I claim is—

1. In a mechanical eraser, a revoluble erasing member, a train of gears for revolving 25 said erasing member and a spring for operating said gears.

2. In a mechanical eraser, a revoluble erasing element, a gear-train operatively connected to said element, a spring for operating 30 said gear-train, and a brake device for holding said element against revolution.

3. In a mechanical eraser, a revoluble erasing member, a gear-train operatively connecting with said element, a spring for operating 35 said gear-train and means for governing the speed of revolution of said element.

4. In a mechanical eraser, a revoluble erasing element, a brake for preventing the revolution of said element, a gear-train operatively 40 connected with said element, a spring for operating said gear-train and a ratchet device for winding said spring.

5. In a mechanical eraser, a housing, a revoluble spindle mounted therein, an erasing element, means detachably securing said element 45 to said spindle, a gear-train operatively connected to said spindle and a spiral spring operatively connected to said gear-train.

6. In a mechanical eraser, a housing provided with a cylindrical projection, a revoluble spindle mounted in said projection, an erasing element detachably secured to said spindle, a gear-train operatively connected to 50 said spindle, a spiral spring in connection with said gear-train, a ratchet mechanism for winding said spring, and means for governing the revolution of said spindle.

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

ROBERT T. MERRILL

Witnesses:

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