

G. O. GILBERT.
COMPUTING MACHINE.
APPLICATION FILED AUG. 25, 1903.

2 SHEETS—SHEET 1.

Fig. 1.

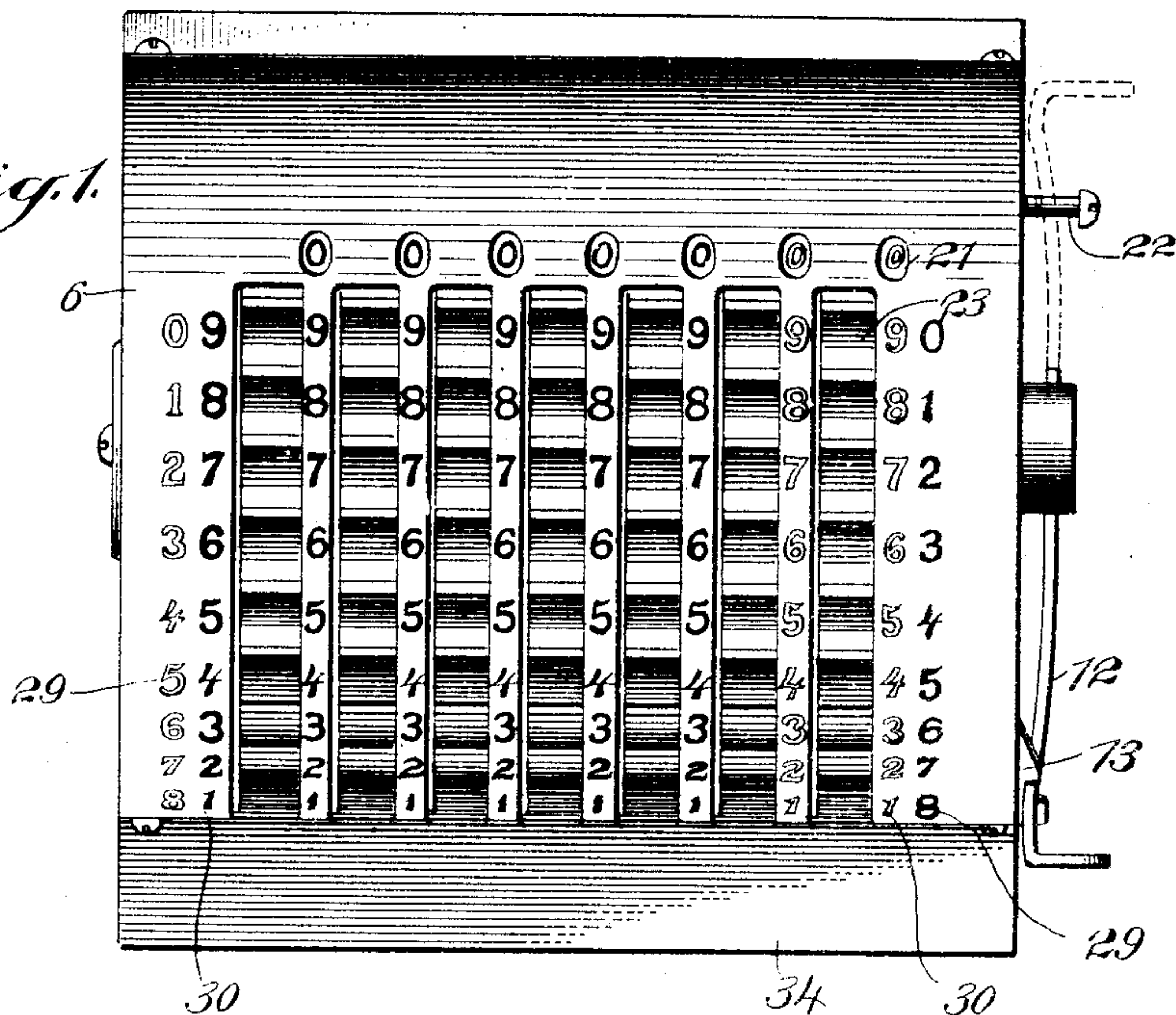


Fig. 2.

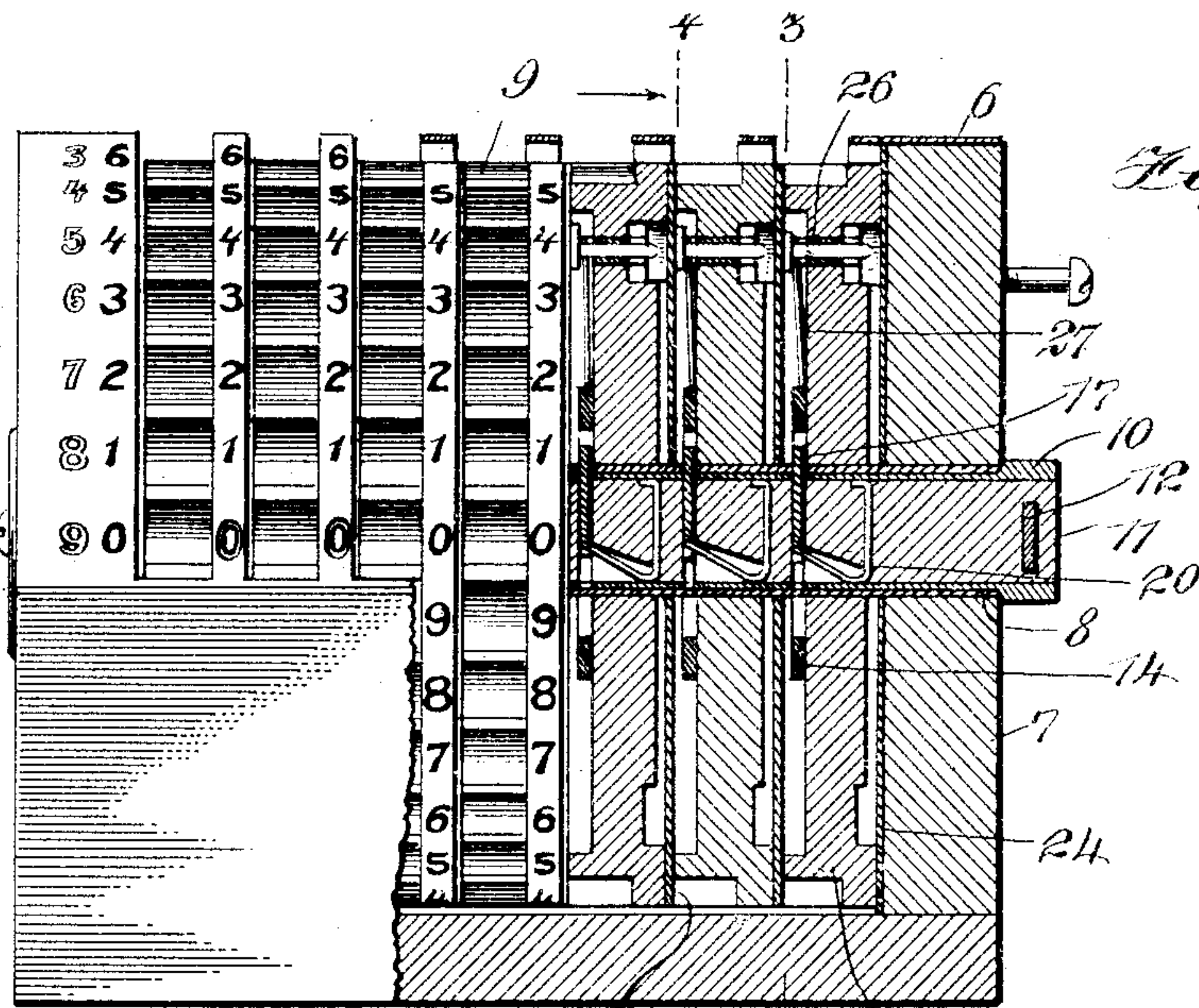
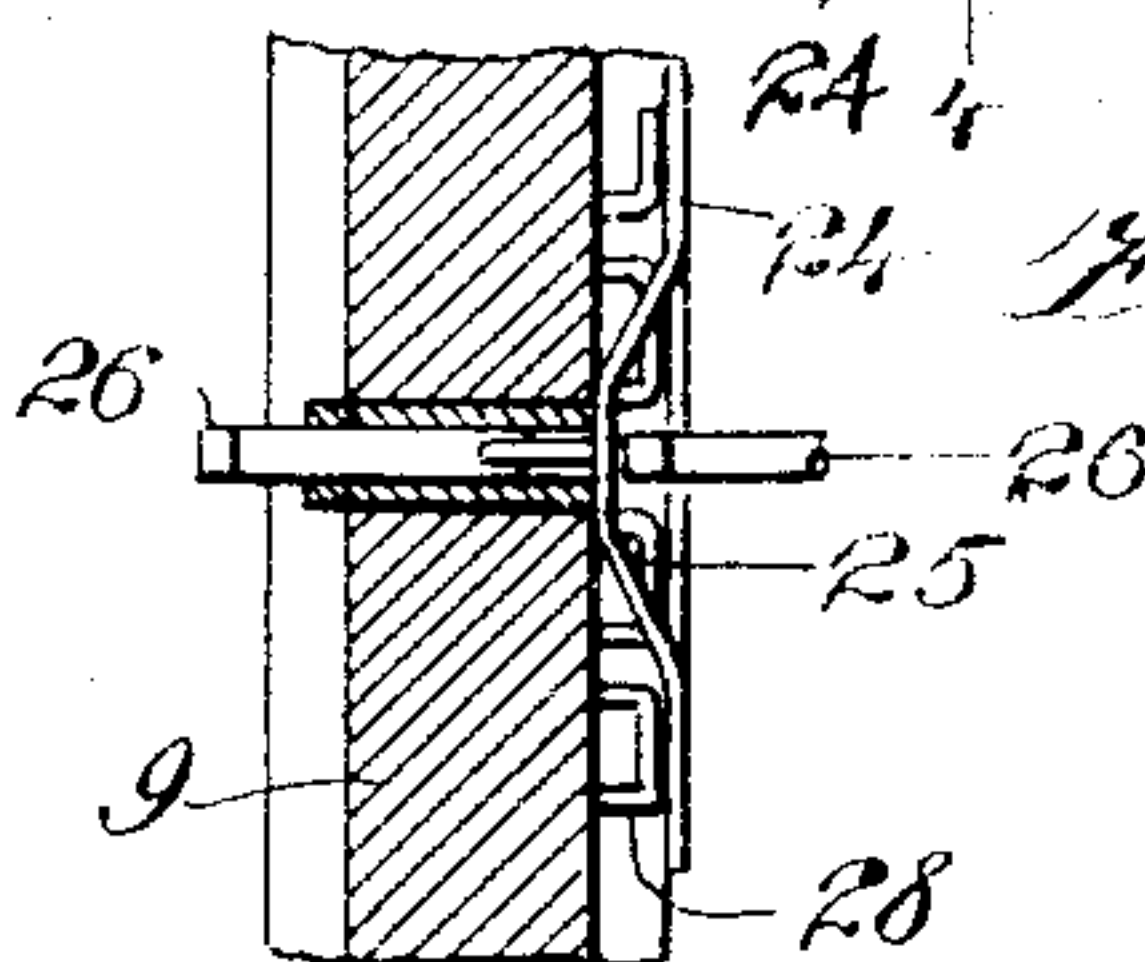


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 3.

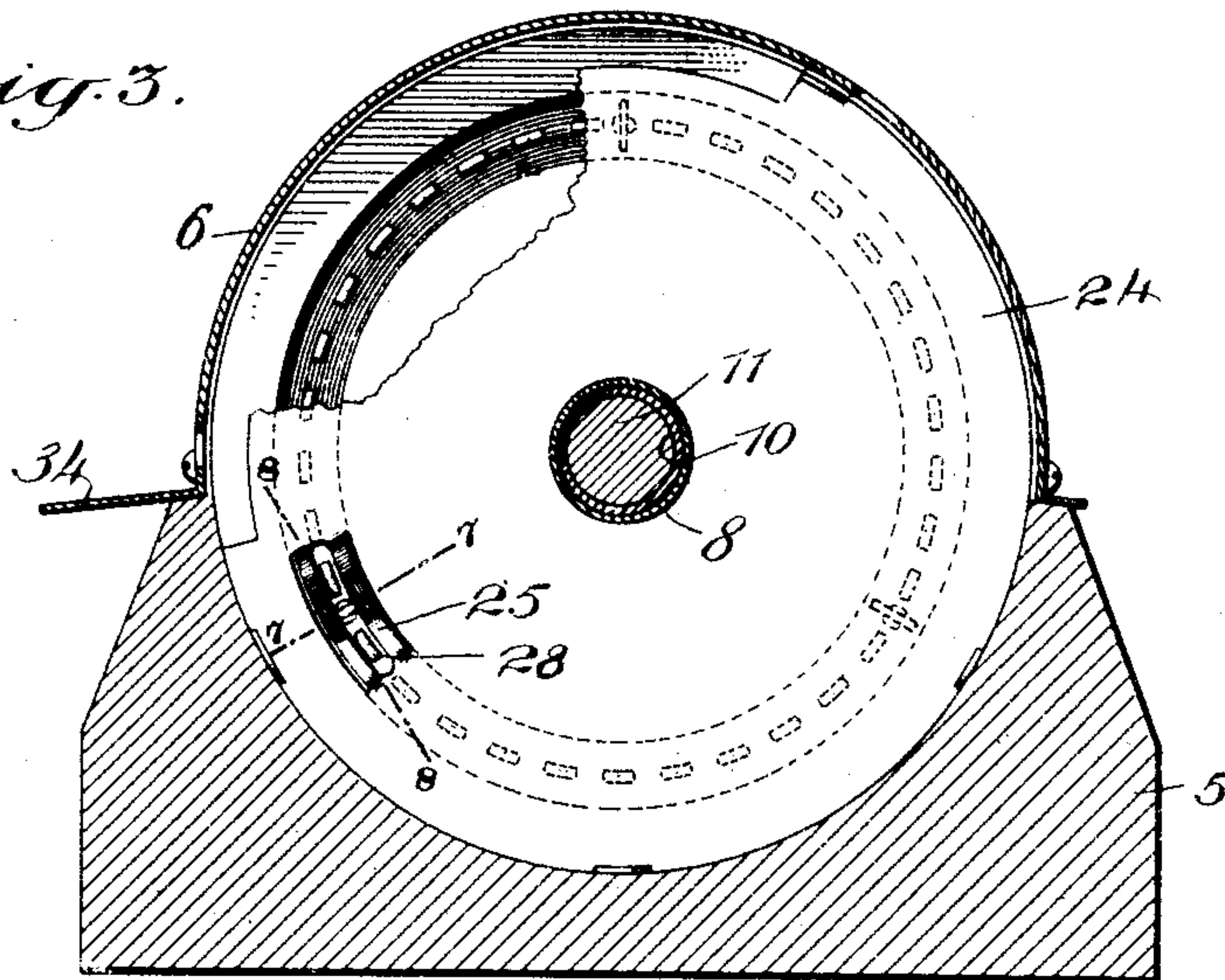


Fig. 5.

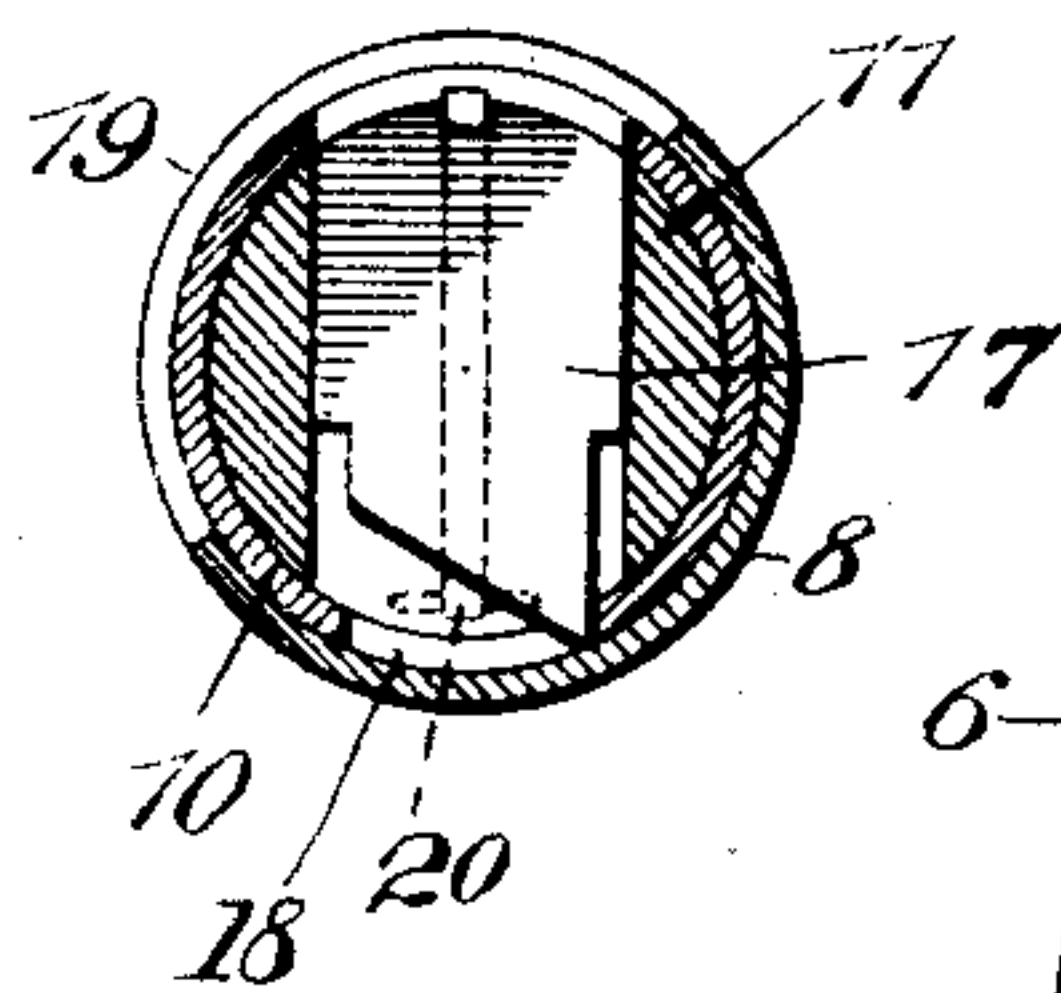


Fig. 4.

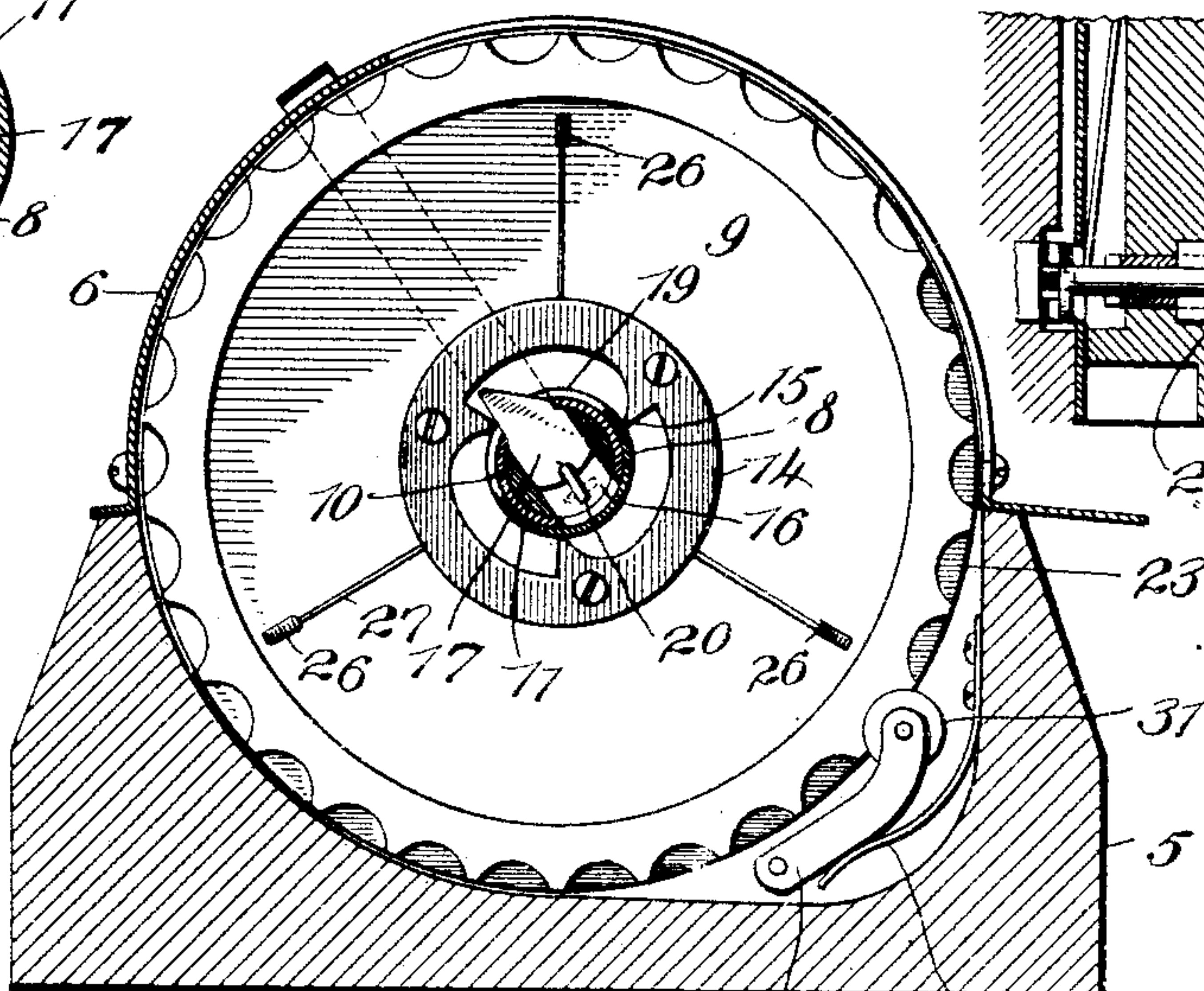


Fig. 7.

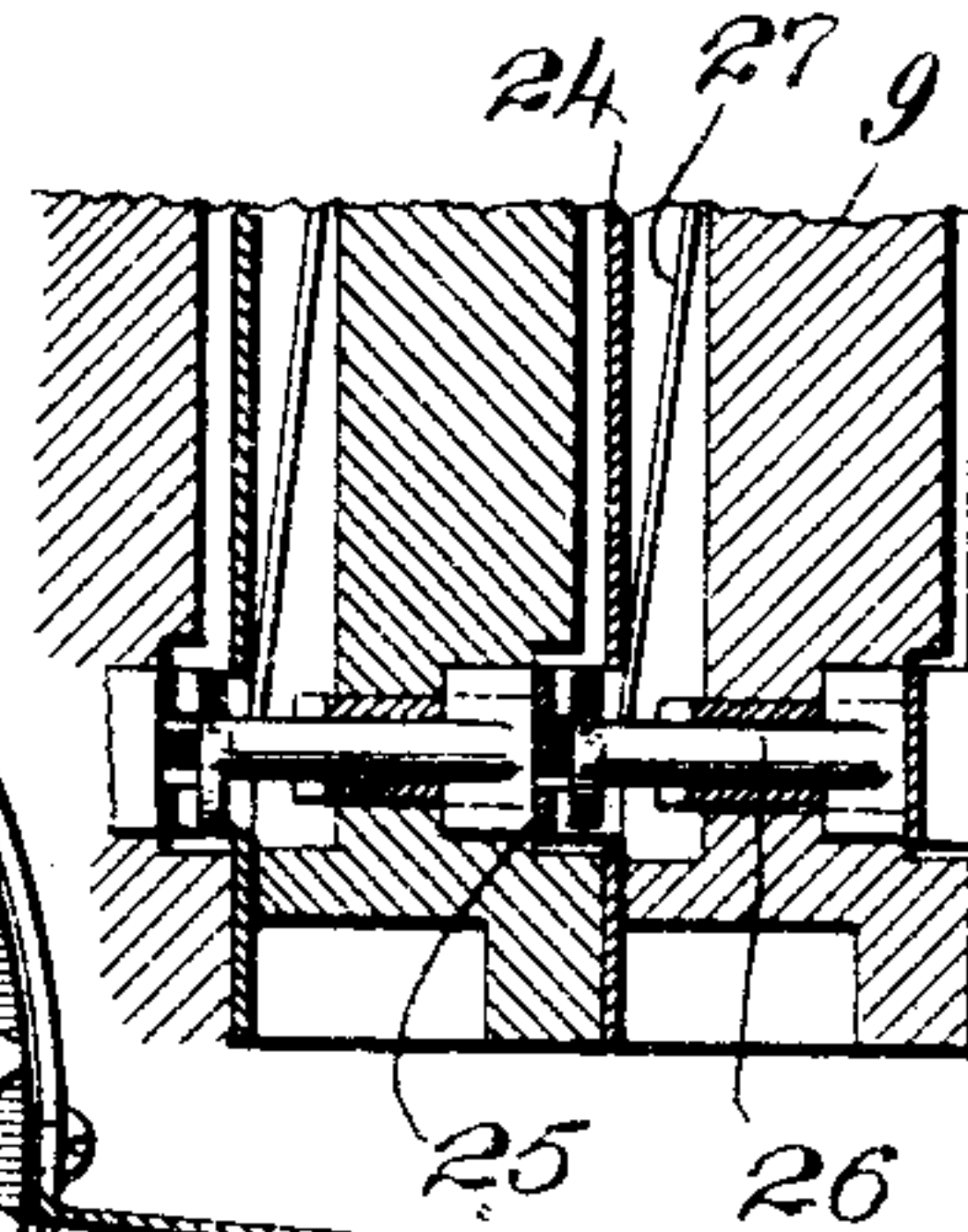
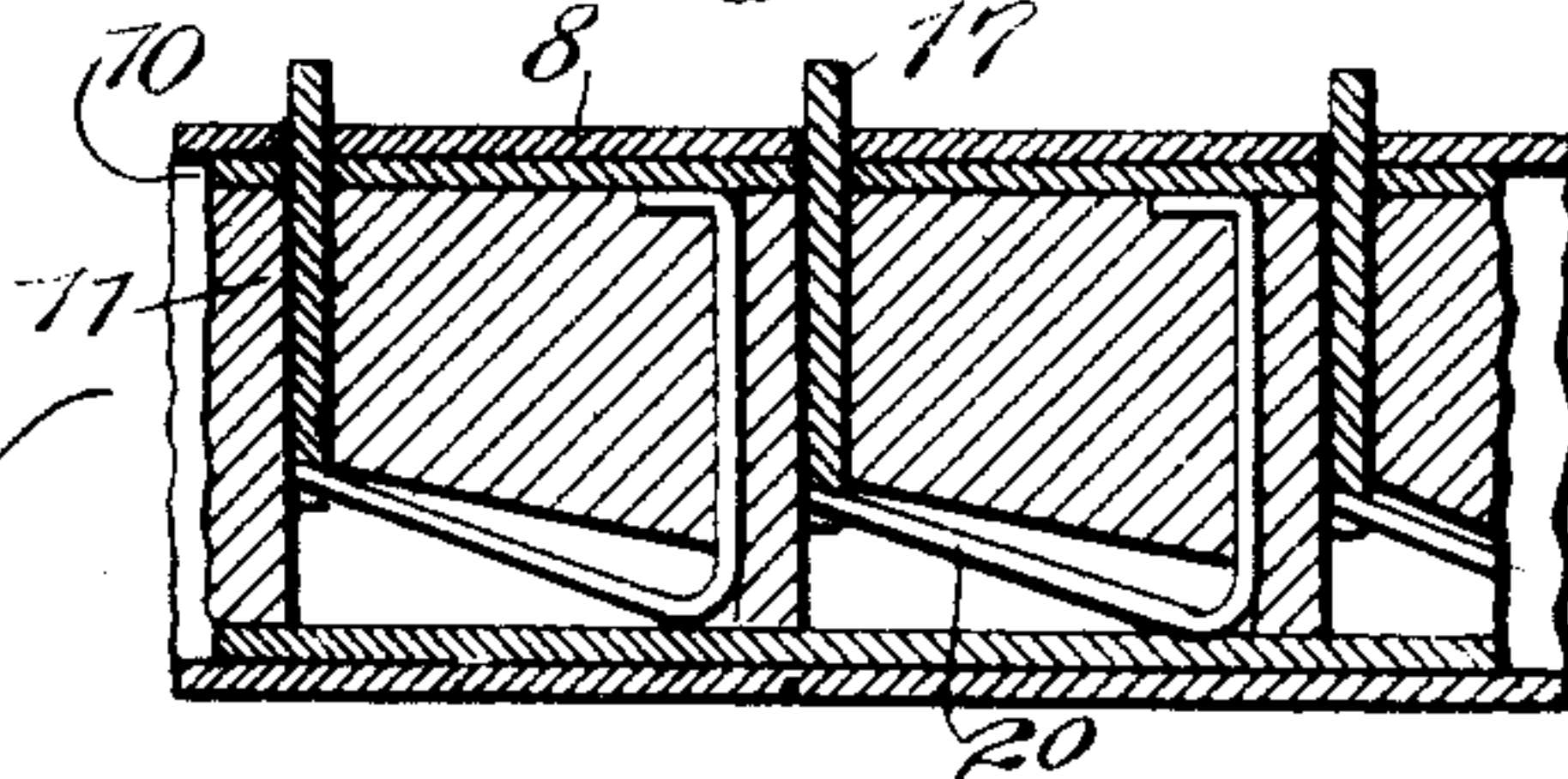


Fig. 6.



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UNITED STATES PATENT OFFICE.

GEORGE OLIVER GILBERT, OF MONTROSE, COLORADO.

COMPUTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 792,410, dated June 13, 1905.

Application filed August 25, 1903. Serial No. 170,716.

To all whom it may concern:

Be it known that I, GEORGE OLIVER GILBERT, a citizen of the United States, and a resident of Montrose, in the county of Montrose and State of Colorado, have invented a new and Improved Computing-Machine, of which the following is a full, clear, and exact description.

This invention relates to improvements in computing-machines, an object being to provide a machine of this character that will be simple in construction and inexpensive and by means of which long columns of figures may be quickly and accurately added, the machine being also adapted for subtracting.

I will describe a computing-machine embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of a computing-machine embodying my invention. Fig. 2 is an elevation thereof, partly in section. Fig. 3 is a section on the line 3 3 of Fig. 2. Fig. 4 is a section on the line 4 4 of Fig. 2. Fig. 5 is a section through the shaft, showing means for resetting the several numeral-disks. Fig. 6 is a longitudinal section thereof, and Figs. 7 and 8 are sectional details showing a means for shifting one numeral-disk from another, Fig. 7 being a section on line 7 7 of Fig. 3.

The casing of the machine comprises a base 5, which may consist of wood or other suitable material, and a top 6, of metal, having a series of slots in its front portion and extended over the top, through which the several numeral-disks, to be hereinafter described, are disclosed. The casing also has end walls 7. Extended through the end walls and held stationary is a sleeve 8, on which the several numeral-disks 9 are designed to rotate. Mounted to rotate in the sleeve 8 is a tubular shaft 10, and in this tubular shaft is a core 11. On one end of the shaft is a turning lever 12, designed to be moved downward and engaged with a clip 13 when the machine is in operation. Secured to one side of each disk is a ring 14, having three inwardly-extended teeth

15, one side of each tooth being curved or made cam-shaped. In line with each ring 14 the shaft-core is provided with chambers or recesses 16, in which dogs 17 are radially movable. The tubular shaft is provided with slots 18, through which the dogs 17 are movable, and the fixed sleeve 8 is also provided with slots 19, permitting the dogs to move outward when the shaft is turned in one direction. The dogs 17 are beveled on one side to engage the cam-shaped surfaces of the teeth 15, and they are held yieldingly outward by means of springs 20, arranged in the shaft 10. When it is desired to operate the disks, the lever 12 is to be moved forward and downward and engaged with the keeper or clip 13. This will cause all of the dogs 17 to move into the recesses, with the ends engaging against the inner surface of the sleeve 8, and then the several disks will be free to rotate. When it is desired to reset the several disks to disclose the ciphers through openings 21 at the upper ends of the slots in the top 6, the lever is to be released from the keeper and moved up until it engages with a stop 22 on the end of the casing. During this rotary movement of the shaft the dogs will be forced out through the slots 18 19, so as to engage with the teeth 15 of the rings 14. I provide three teeth 15 in each ring 14, because the periphery of each disk is divided into three sections, and each section has numerals running from "0" to "9." These numerals are arranged on flanges at one side of the disks, and the periphery of each disk inward of the flange is provided with recesses 23, in which a person may place his finger to rotate the disk.

I will now describe a means for carrying one disk with another to make additions or subtractions.

Arranged in the casing, at one side of each disk, is a plate 24, and each plate is provided at a certain point with a lateral extension or cam-surface 25. This cam-surface is pressed out in the metal, so that a hollow is formed at one side and a projection at the other side, as clearly indicated in Fig. 8. Carried by each disk and movable through the same is a series of three pins 26. These pins are held yieldingly outward by means of springs 27, and

each disk, excepting the units-disk at its side adjacent to the one of the next lower denomination, is provided with an annular series of lugs 28. Each strip between the slots in the top 6 is provided with numerals progressing from "0" to "9," and on the top 6 of the casing, near its ends, are two sets of numerals from "0" to "9," arranged in reverse order. These two sets or lines of numerals are indicated at 29 30. The numerals 29 are preferably of a different color from the numerals 30. The several disks are held from accidental back movement by means of rollers 31, mounted in pivoted arms 32 and held yieldingly against the disks by springs 33.

In the operation of addition the operator places his finger in the depression 23 opposite the number on the casing, the said number of course corresponding to the numeral in the column of figures first struck. The disk is to be turned until the operator's finger comes to a stop against a plate 34 at the front of the casing, and at this time the numeral will be disclosed through one of the openings 21. If this numeral—say, for instance, "9"—and the next figure to be added is "5," the operator places his finger in the recess opposite the "5" in the row of figures on the casing extending progressively from the upper portion of the casing downward, and then the disk is to be rotated as before described, and during this rotation one of the pins 26, carried by the units-wheel, will be pressed outward by the projecting cam-surfaces on the plate at the right-hand side of said units-wheel, and the end of the pin will be forced into the depressed side of the cam adjacent to the tens-disk, permitting the said pin to engage with one of the lugs 28, and thus the said tens-wheel will be carried through one space, disclosing the numeral "1" through its opening 21, and through the two openings, of course, the addition will appear. In subtracting the disks are to be rotated in the reverse direction—that is, from

the front backward—and the figures on the end of the casing will serve as guides for the operator's placing his finger in the necessary depression. As before stated, after making calculations the several disks which may have been turned are carried back to zero by manipulating the lever 12.

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

1. A computing-machine comprising a slotted casing, a fixed sleeve extended through the casing and having circumferentially-disposed slots, dogs movable through said slots, numeral-disks mounted to rotate on the sleeve, devices carried by the disk for engaging with said dogs, and a rotary part in the sleeve for carrying the dogs.

2. A computing-machine comprising a casing, having slots, a fixed sleeve extended through the casing, the said fixed sleeve having circumferentially-disposed slots, numeral-disks mounted to rotate on the sleeve, a shaft arranged to rotate in the sleeve and having radial or outward openings, dogs movable into and out of said openings and through the slots of the sleeve, and teeth on the disks adapted to be engaged by said dogs.

3. A computing-machine comprising a casing having slots, numeral-indices on said casing, a fixed sleeve extended through the casing, said sleeve having circumferentially-disposed slots, a shaft mounted to rotate in the sleeve and having openings, spring-pressed pawls movable in said openings and through said slots, numeral-disks mounted to rotate on the sleeve, rings attached to the disks, and a plurality of teeth formed in each ring for engagement with the dogs.

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

GEORGE OLIVER GILBERT.

Witnesses:

J. W. TRIPLER,
ELLA E. ALDERSON.