No. 845,276. PATENTED FEB. 26, 1907.

J. SWART.

ADDING MACHINE.

APPLICATION FILED APR. 9, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

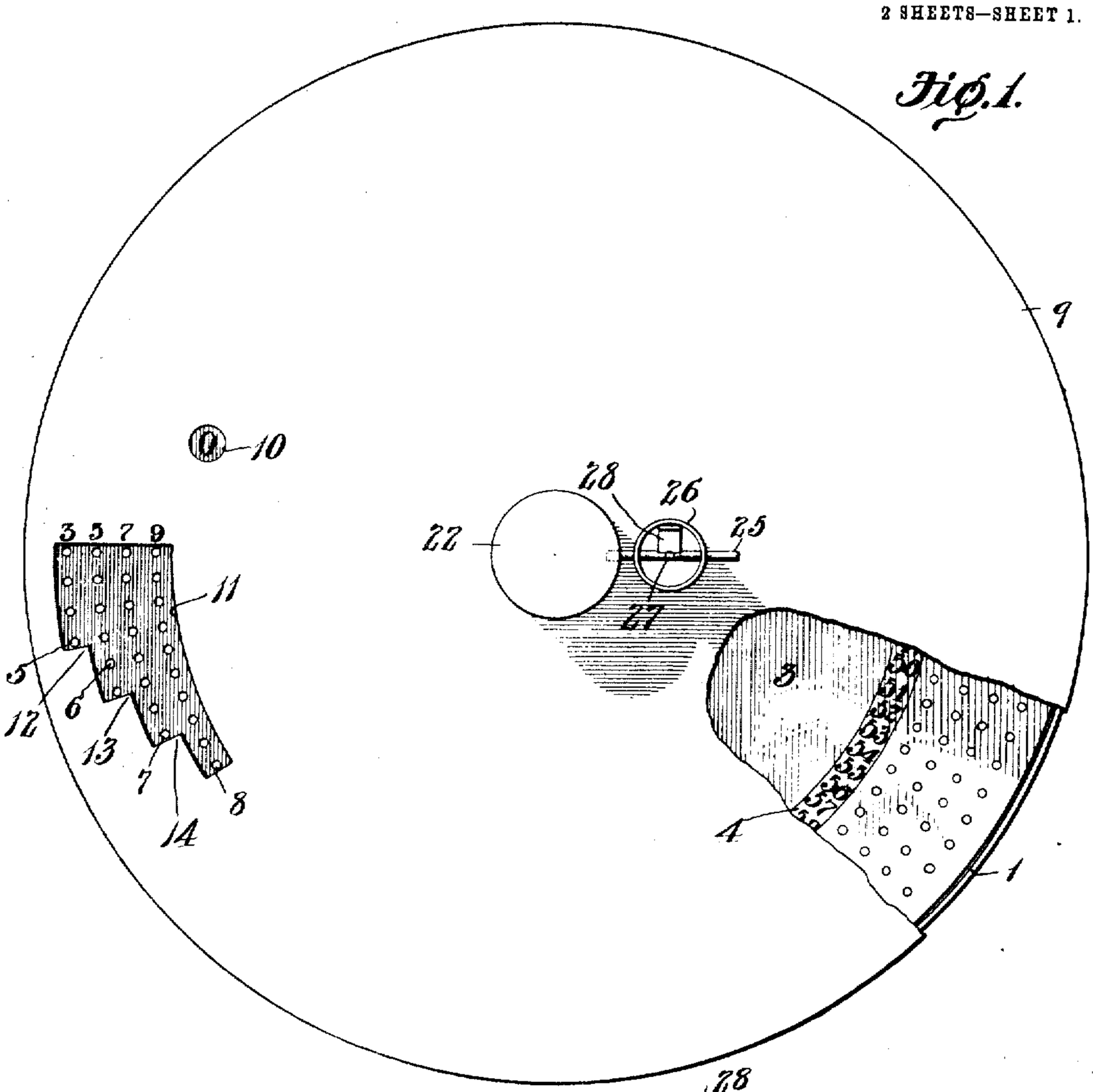
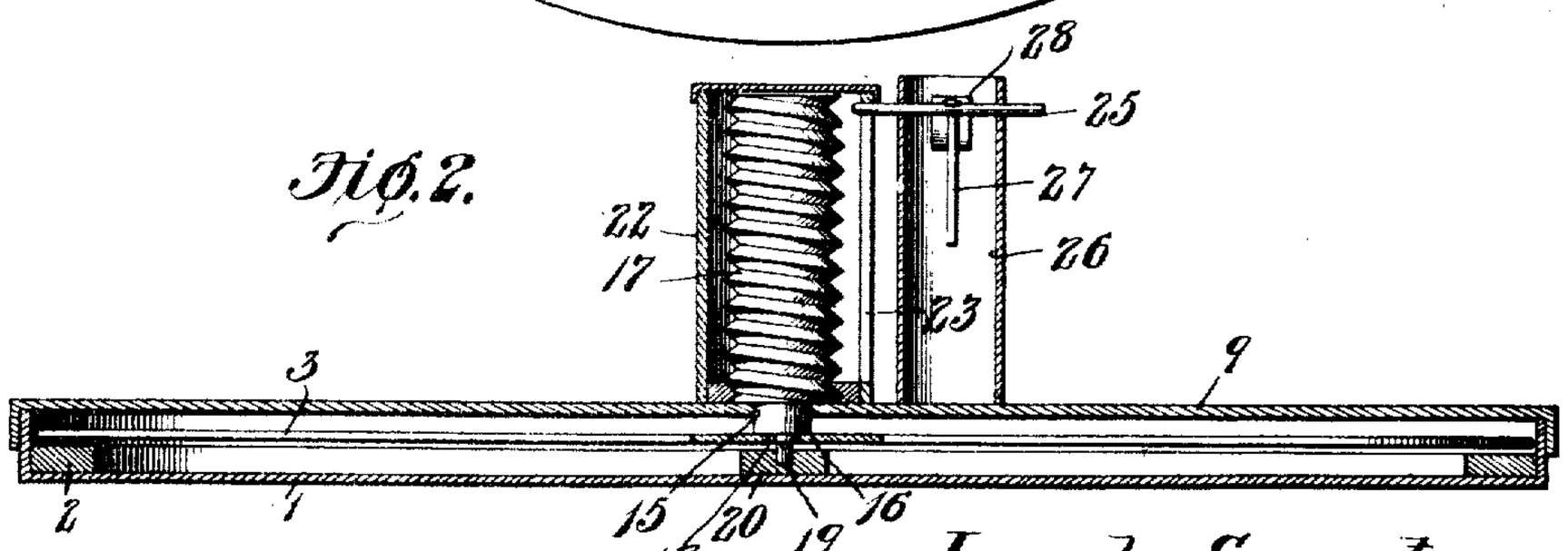


Fig. 2.



WITNESSES:

E. F. Clement

Herbert D. Lawson.

Joseph Swart,

INVENTOR

By Church & Co

ATTORNEYS

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2 SHEETS—SHEET 2.

Fig. 3.

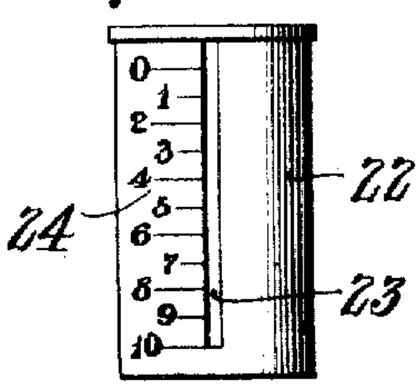


Fig. 4.

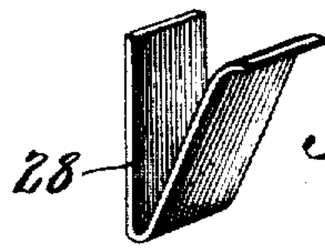
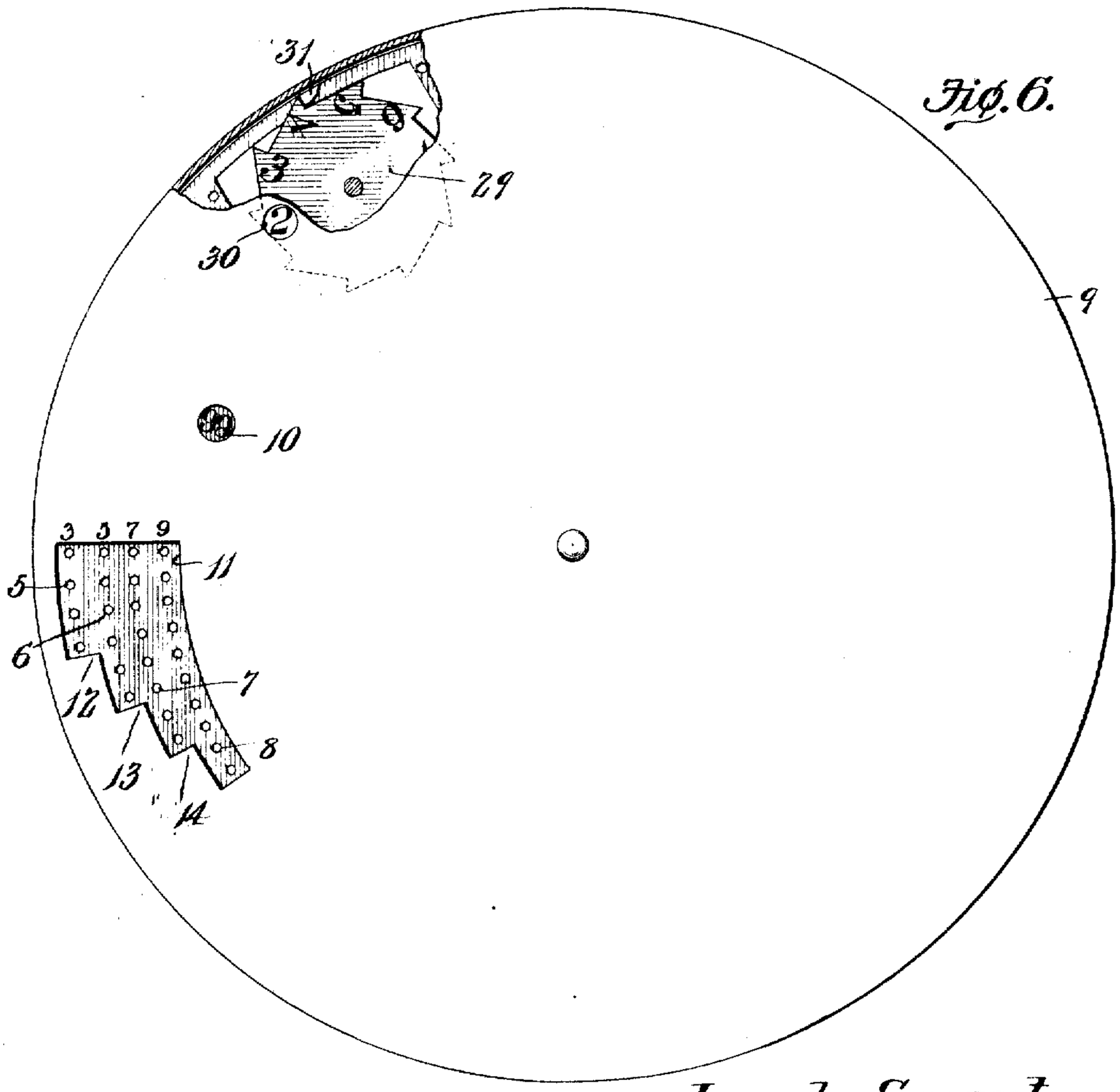


Fig. 5.

Fig. 6.



WITNESSES:

E. F. Stewart

Hubert D. Lawson.

Joseph Swart,
INVENTOR

By Cushman & Co
ATTORNEYS

UNITED STATES PATENT OFFICE.

JOSEPH SWART, OF FORT SCOTT, KANSAS.

ADDING-MACHINE.

No. 845,276. Specification of Letters Patent. Patented Feb. 26, 1907.

Application filed April 9, 1906. Serial No. 310,809.

To all whom it may concern:

Be it known that I, JOSEPH SWART, a citizen of the United States, residing at Fort Scott, in the county of Bourbon and State of Kansas, have invented a new and useful Adding-Machine, of which the following is a specification.

This invention relates to adding-machines; and its object is to provide a simple, durable, and compact device of this character whereby various sums can be added and the result accurately indicated.

The invention consists of a casing having a wheel rotatably mounted therein and provided with a series of numerals disposed in a circle and adapted to be successively exposed through an opening in the casing. The disk has concentric series of apertures within it adapted to be engaged by a pencil or other pointed object, so as to rotate the disk a desired distance in order to bring the proper numeral in position beneath the opening. An indicator is actuated by the rotation of the disk for designating "hundreds," while the disk is utilized for designating "tens" and "units."

The invention also consists of certain other novel features of construction and combinations of parts, which will be hereinafter more fully described, and pointed out in the claims.

In the accompanying drawings is shown the preferred form of the invention.

In said drawings, Figure 1 is a plan view of the device, a portion of the cover being broken away. Fig. 2 is a section therethrough. Fig. 3 is an elevation of the sleeve. Fig. 4 is a detail view showing the opening in the disk and which is adapted to receive the stem of the screw. Fig. 5 is a detail view of the clip used in connection with the index; and Fig. 6 is a plan view of a modified form of device, the cover being partly broken away.

Referring to the figures by numerals of reference, 1 is a circular casing, on the bottom of which is disposed a ring 2, which fits snugly against the side of the casing and constitutes a support for a rotatable disk 3. This disk has a series of numerals ranging from "0" to "99," said numerals being arranged in a circle and concentric with the disk, as shown at 4. Concentric series of perforations 5, 6, 7, and 8 are formed within the disk between the series of numerals and the periphery, and these apertures or perforations are disposed along imaginary lines radiating from the center of the disk and extending through the numerals, there being the same number of apertures in each series as there are numerals on the disk. A cover 9 fits upon the box or casing 1 and is provided with a small opening 10, in which the numerals in the series 4 are adapted to successively appear when the disk is rotated. Another opening 11 is formed close to and concentric with the edge thereof, and this opening is of sufficient width to permit the apertures 5, 6, 7, and 8 to successively appear therein. One end of the opening 11 is stepped to form, preferably, three shoulders 12, 13, and 14, and the distance between the shoulders and the opposite end of the opening 11 is such as to permit the simultaneous exposure within the opening of three spaces between four apertures 5, five spaces between six apertures 6, seven spaces between eight apertures 7, and nine spaces between ten apertures 8.

An opening 15 is formed in the center of the cover 9, and rotatably mounted therein is a stem 16, formed at one end of an upstanding screw 17. This stem has a flattened or angular portion 18, which extends through and is secured in any suitable manner to the center of disk 3, and a lug 19 is located at the lower end of the stem 16 and bears within a block 20, located upon the center of the bottom of casing 1. A sleeve having an internally-threaded end is arranged on the screw 17 and has a slot 23 extending longitudinally thereof. Graduations are arranged along the edges of the slot, as shown at 24, and are designated by characters indicating "hundreds." Into the slot 23 projects an index in the form of a pin 25, which is supported parallel with the cover 9 by a standard 26, fixedly secured on the cover, said standard having apertures in which the pin is mounted to slide. A stop-pin 27 extends through pin 25 and hangs down within the standard 26, so as to positively limit the longitudinal movement of the pin 25 and prevent it from being withdrawn from the standard 26, and a U-shaped spring 28 is interposed between the pin 25 and the standard to exert a constant pressure on said pin and to hold it in any position to which it may be adjusted. The rows of apertures 5, 6, 7, and 8 are designated on the cover by indicating-numerals 3, 5, 7, and 9, respectively.

It is to be understood that when the parts

of this device are in their normal positions the character "0" will appear in the opening 10 and the sleeve 22 will rest upon the cover 9 and with the index 25 opposite the first or "0" graduation on the sleeve. Should it be desired to add together the numerals "9" and "6," a pencil-point is placed in next to the last aperture in the column indicated by the numeral 7 on cover 9, so that there will be six spaces in said column between the pencil-point and the front or straight end of the opening 11. The disk 3 is then rotated until said pencil comes into contact with said straight end of the opening 11, whereupon the disk will be rotated six spaces and the numeral "6" will appear in the opening 10. The pencil-point is then placed in the end aperture in the column designated by the numeral 9 on the cover, and the disk is again rotated in the manner described until the pencil comes into contact with the end wall of the opening 11, thereby rotating the disk nine spaces, whereupon the numeral "15" will appear in opening 10. This operation can be continued throughout a long column of figures, and the rotation of the disk 3 will cause the screw 17 to rotate in sleeve 22, and as said sleeve cannot revolve with the screw, because of the index 25, it will move longitudinally thereon, and when the disk makes one complete revolution the index 25 will arrive in position beside the graduation on sleeve 22, which indicates "100." A column of figures totaling several "hundreds" or "thousands," according to the capacity of the machine, can thus be accurately totaled without any confusion resulting to the operator. The "units," "tens," and "hundreds" columns can all be added in the same manner, it being merely necessary to first shift the disk so as to indicate any number which may be carried forward from the preceding column. After the addition of a column of figures has been completed the disk can be returned to its original position and the index 25 can then be pulled longitudinally from engagement with the sleeve, so as to permit said sleeve to be screwed downward into its original position in contact with the cover, whereupon the index can be reinserted into slot 23.

Instead of utilizing the "hundreds" indicating means, such as hereinbefore described, an indicator such as illustrated in Fig. 6 may be provided. This consists of a toothed wheel 29, which is rotatably connected to the cover and has numerals arranged successively thereon from "0" to "9" and adapted to successively appear through an opening 30 in the cover. The teeth of the wheel 29 are adapted to be successively contacted by a lug 31 on the periphery of the disk, so that each time the disk is rotated once the wheel 29 will be rotated one tooth, so as to bring another figure into the opening 30. In other respects the construction of this modified form is the same as that hereinbefore described.

It is thought that the advantage in having several rows of apertures exposed through the opening 11 will be apparent from the foregoing description. The aperture serves as a guide for limiting the movement of the inserted pencil and the disk, and therefore by placing the pencil against one end of the opening 11 and within the last aperture in the "3" column the disk can only be rotated three spaces. By placing the pencil in the end aperture in the "5" column the disk can only be rotated five spaces, &c. While only four series of apertures have been designated, the same appearing in the "3," "5," "7," and "9" columns, it is to be understood that, if desired, a number of series of openings may be employed sufficient to provide nine rows instead of four, as above designated. By providing an irregular opening for limiting the movement of the pencil no particular skill must be exercised in rotating the disk a predetermined distance to cause the proper number to be indicated. It is merely necessary to move the pencil as far as it will go, whereupon a correct number will appear in the opening 10.

What is claimed is—

1. In a device of the character described the combination with a casing; of a rotatable disk therein having a plurality of successively-arranged characters disposed in a circle concentric with the center of the disk, said disk having concentric series of apertures therein, there being in each series a number of apertures equal to the characters upon the disk, and a cover on the disk having an opening in which appear apertures of each series, said opening adapted to disclose a different number of apertures of each series, and said cover having characters thereon designating the number of spaces disclosed between the apertures in each series and an aperture for successively disclosing the characters upon one disk, the walls of the opening in the cover constituting stops for a disk-operating device.

2. In a device of the character described the combination with a casing; of a rotatable disk therein having a plurality of successively-arranged characters disposed in a circle concentric with the center of the disk, said disk having concentric series of apertures therein, there being in each series a number of apertures equal to the characters upon the disk, and a cover on the disk having an opening in which appear apertures of each series, said opening adapted to disclose a different number of apertures of each series, said cover having characters thereon designating the number of spaces disclosed between the apertures in each series and an aperture for successively disclosing the charac-

ters upon the disk, and means carried by the casing for indicating the number of rotations of the disk, the walls of the opening in the cover constituting stops for a disk-operating device.

3. The combination with a casing having an aperture therein; of a numeral-carrying disk rotatably mounted within the casing, said numerals adapted to successively appear within the aperture, a screw fixed to and rotatable with the disk, a graduated sleeve engaging and movably mounted on the screw, and an index for holding the sleeve against rotation, said index adapted to coöperate with the graduations to indicate the rotations of the disk.

4. The combination with a casing having an aperture; of a disk rotatably mounted within the casing and having characters adapted to successively appear within the aperture, a screw fixed to and rotatable with the disk, a slotted sleeve threaded upon and movable longitudinally of the screw and externally graduated, and a longitudinally-movable index projecting into the slot for holding the sleeve against rotation and cooperating with the graduations on the sleeve to indicate the number of rotations of the disk.

5. The combination with a casing having an aperture; of a disk rotatably mounted within the casing and having characters adapted to successively appear within the aperture, a screw fixed upon and rotatable with the disk, a slotted sleeve threaded upon and movable longitudinally of the screw and externally graduated, a longitudinally-movable index projecting into the slot for holding the sleeve against rotation and coöperating with the graduations on the sleeve to indicate the number of rotations of the disk, and means for holding the index against displacement within the slot.

6. In a device of the character described the combination with a casing having openings therein; of a disk rotatably mounted within the casing and having characters adapted to successively appear in one of the openings, a series of apertures adapted to appear in the other opening, said last-mentioned opening being shaped to disclose a different number of apertures in each series, a screw rotatable with the disk, a sleeve threaded upon the screw and externally graduated, said sleeve having a longitudinal slot therein, a standard upon the casing, and an index longitudinally movable within the standard and normally projecting into the slotted sleeve said index adapted to prevent rotation of the sleeve and to coöperate with its graduations to indicate the number of revolutions of the disk.

7. The combination with a casing having an aperture therein; of a numeral-carrying disk rotatably mounted within the casing, said numerals adapted to successively appear within the aperture, a screw fixed to and rotatable with the disk, a graduated sleeve engaging and movably mounted on the screw, and an index outside of and detachably engaging the sleeve for holding said sleeve against rotation, said index adapted to coöperate with the graduation to indicate the rotations of the disk.

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

JOSEPH SWART.

Witnesses:
E. J. CHAPIN,
S. K. BROWN.