

No. 776,582.

PATENTED DEC. 6, 1904.

F. T. BETTS.
ADDING MACHINE.

APPLICATION FILED AUG. 1, 1904.

NO MODEL.

2 SHEETS—SHEET 1.

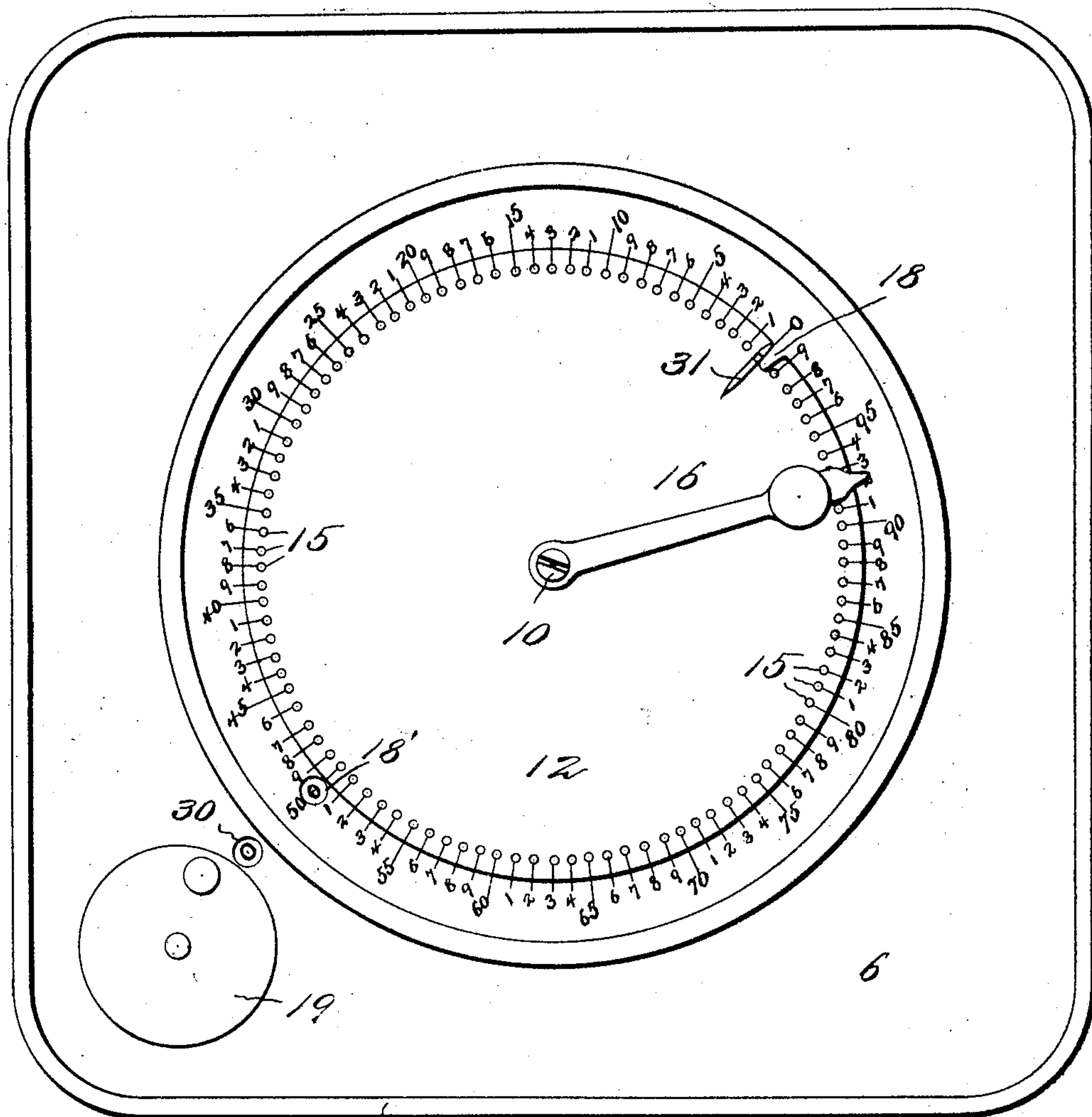


FIG. 1.

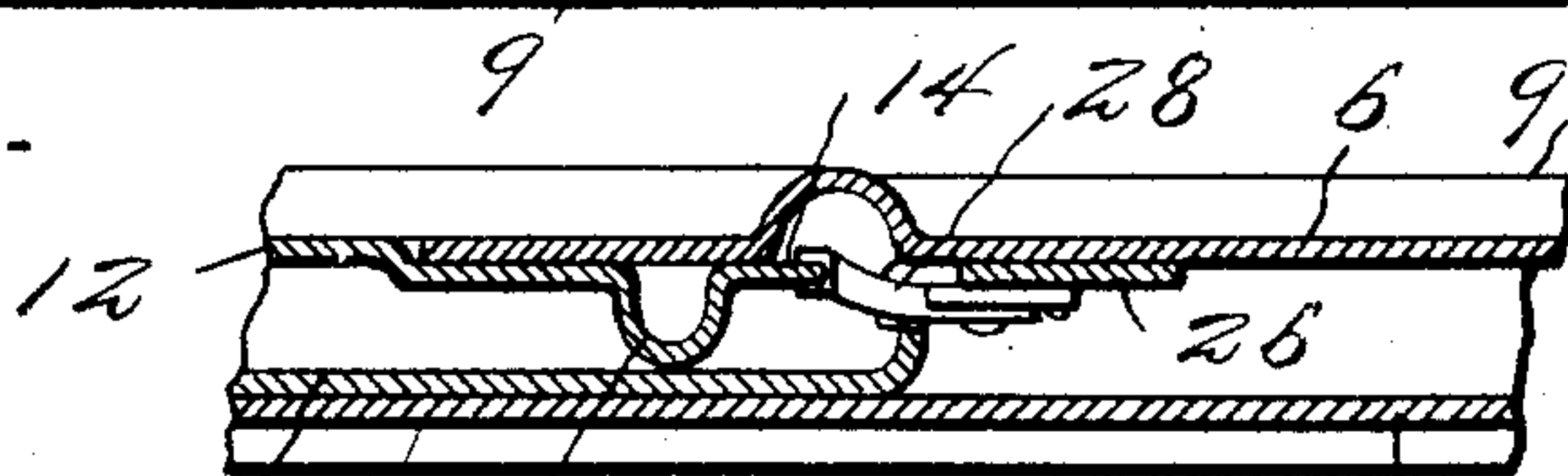


FIG. 4.

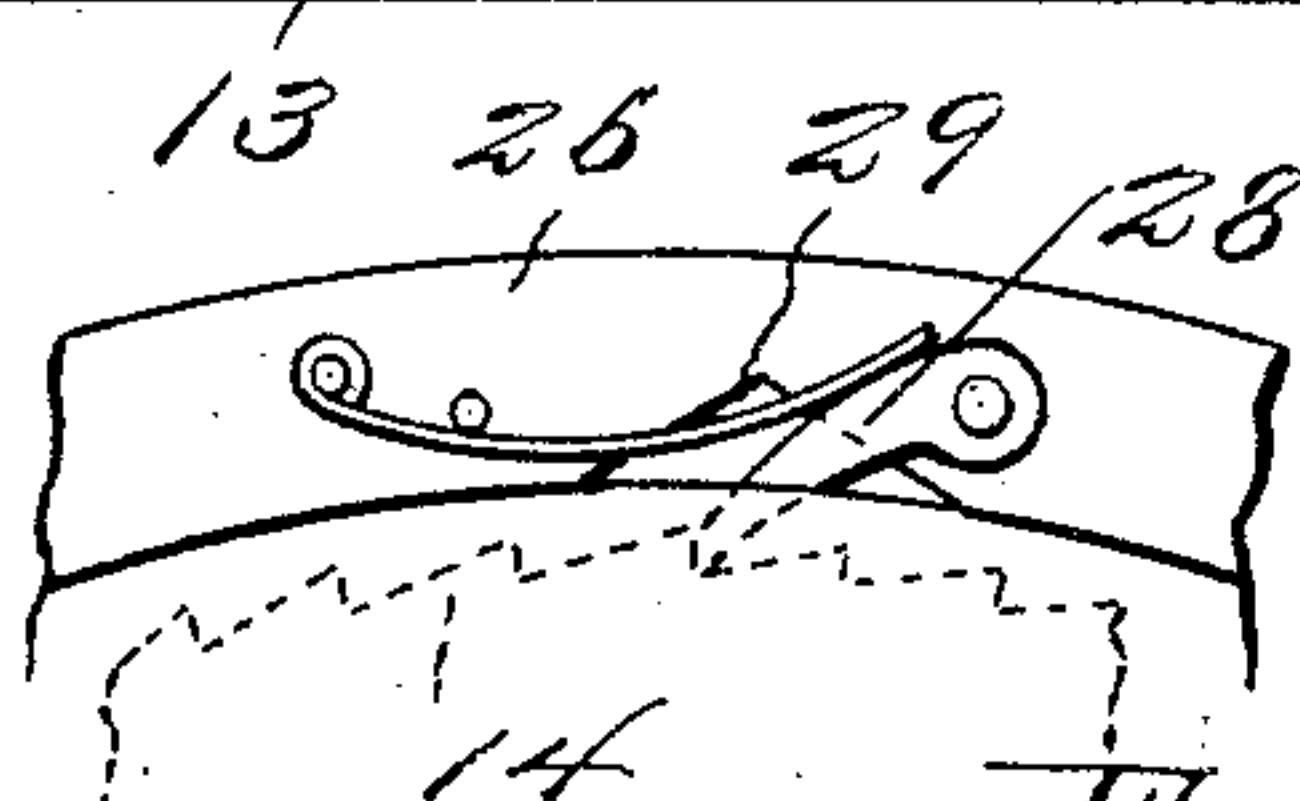


FIG. 5.

Witnesses

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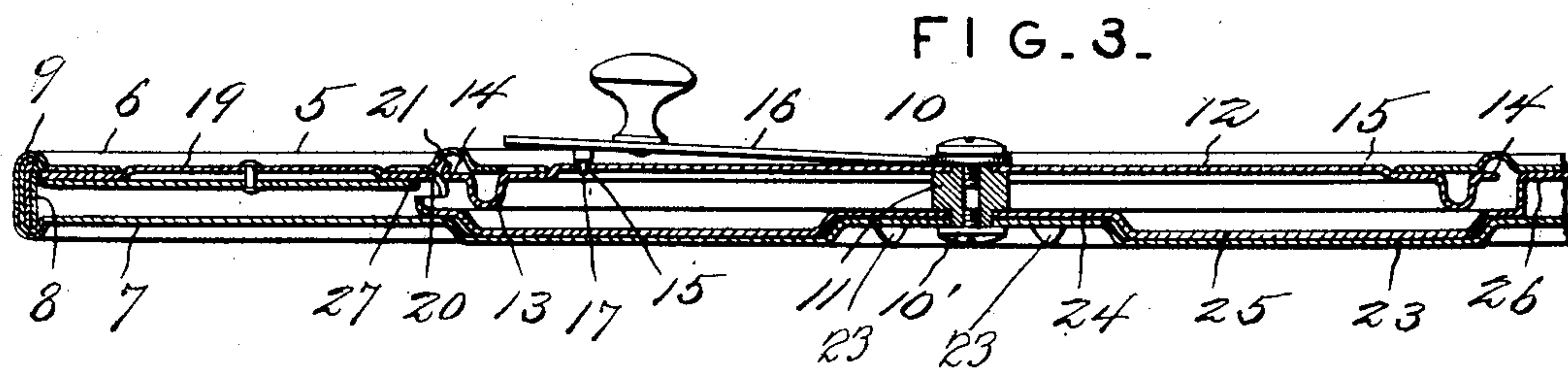
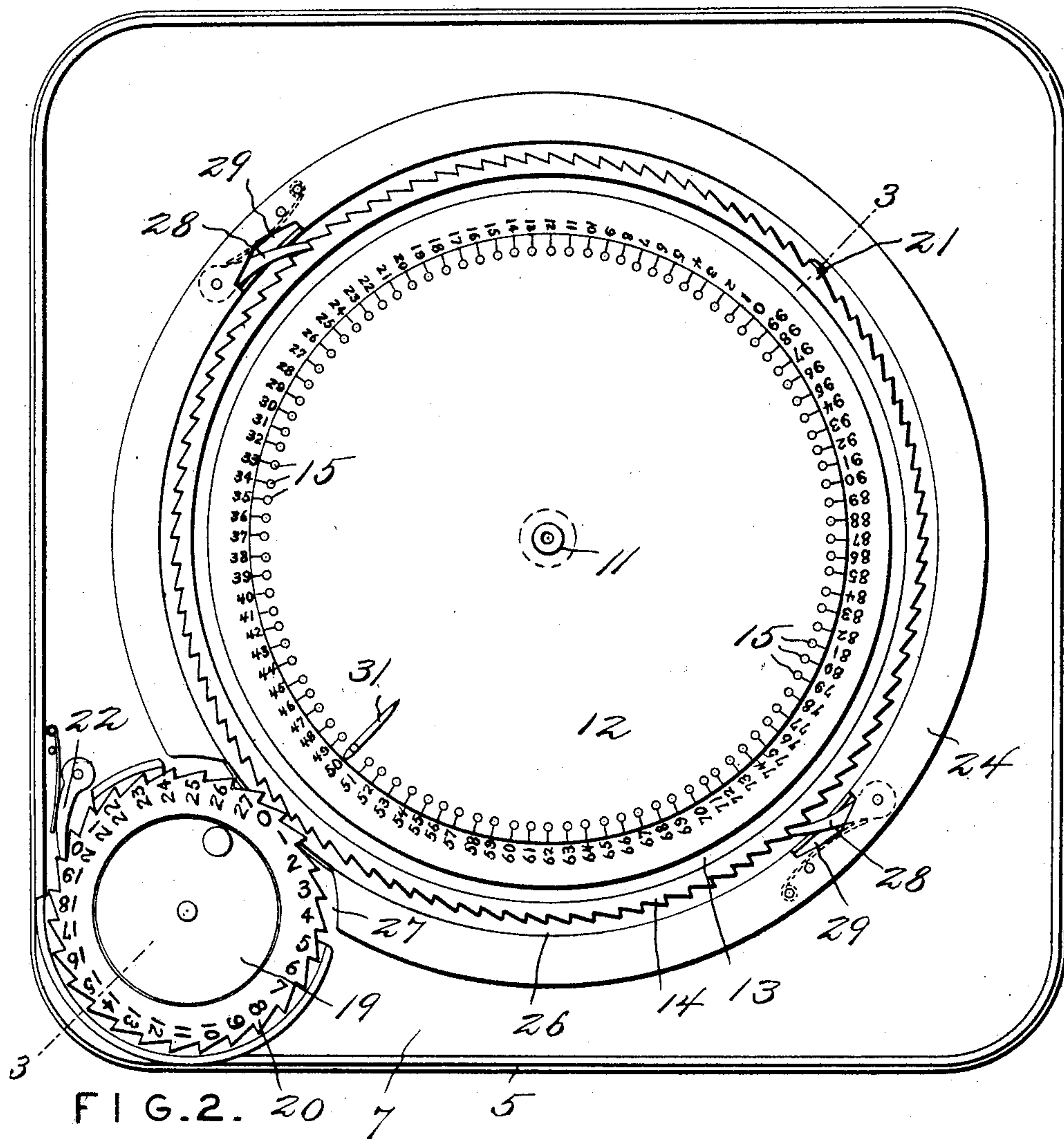
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UNITED STATES PATENT OFFICE.

FRANKLIN T. BETTS, OF DEFIANCE, OHIO.

ADDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 776,582, dated December 6, 1904.

Application filed August 1, 1904. Serial No. 219,109. (No model.)

To all whom it may concern:

Be it known that I, FRANKLIN T. BETTS, a citizen of the United States, residing at Defiance, in the county of Defiance and State of Ohio, have invented a new and useful Adding-Machine, of which the following is a specification.

This invention relates to certain improvements in adding-machines of that general class shown and described in United States Letters Patent granted to Stephen N. Betts on the 7th day of April, 1903, under No. 724,424.

The primary object of the invention is to improve, simplify, and cheapen the construction of the machine and to render the latter more accurate by providing means for preventing backward movement of the computing-wheel when performing mathematical calculations.

A further object of the invention is to provide a sheet-metal frame formed in two sections, one of which is provided with a plurality of radiating ribs and the other with an opening for the computing-wheel, said wheel being mounted for rotation on an intermediate reinforcing-plate provided with corresponding radiating ribs adapted to engage the ribs on the lower section of the frame, so that said plate will be retained in position without the use of screws, rivets, and similar fastening devices.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the drawings, and pointed out in the claims hereto appended, it being understood that various changes in form, proportion, and minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

In the accompanying drawings, forming a part of this specification, Figure 1 is a front elevation of an adding-machine constructed in accordance with my invention. Fig. 2 is a similar view with the top section of the frame removed. Fig. 3 is a transverse sectional view taken on the line 3 3 of Fig. 2 with the parts assembled. Fig. 4 is an enlarged detail sectional view showing the arrangement of

reinforcing-plates and spring-pawls. Fig. 5 is a detail view of one of the pawls.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

The device consists of a box or casing 5, preferably rectangular in shape, as shown, and stamped from sheet metal or other suitable material, said casing being preferably formed in two sections 6 and 7, spaced apart by a vertical strip 8 and having their overlapping edges bent inwardly and detachably secured together by a clamping-band 9. Rigidly secured between the sections 6 and 7 of the casing, as by screws 10 and 10', is a centrally-disposed hub or barrel 11, upon which is mounted for rotation the computing-wheel 12, said wheel being preferably stamped from a single piece of metal and formed with a depending rib or bead 13 and a series of peripheral teeth 14. The wheel 12 is provided with an annular row of perforations 15, corresponding in number to the teeth 14, and stamped or otherwise imprinted on said wheel opposite the perforations are a scale of numbers ranging, preferably, from "0" to "99," as shown. The wheel 12 normally closes an opening in the upper section of the casing and around which are arranged at uniform distances a series of numerals ranging in like manner from "0" to "99," said wheel being traversed by a pointer 16, pivotally mounted on the hub or barrel 11.

The numerals on the casing and computing-wheel are so arranged with relation to each other that when the computing-wheel is operated by inserting the depending lug 17 of the pointer in the perforation opposite the numeral "50" and turning said wheel until the pointer engages a stop 18 on the casing "0" will appear at an opening 18' in the casing and the device will be set for operation. Mounted for rotation on the upper section of the casing is a registering or hundreds disk 19, provided with a peripheral series of teeth or spurs 20 for successive engagement by an upwardly-extending spur or lip 21 on the periphery of the units-disk or computing-wheel 14, said registering-disk being held from backward movement by a dog 22, pivoted to the

casing, as shown. The lower section 7 of the casing is stamped or otherwise formed with a series of radiating ribs or depressions 23, two of which are shown in cross-section and two in full lines in Fig. 3 of the drawings, and supported on said section is an intermediate reinforcing-plate 24, provided with corresponding ribs or depressions 25, which engage the ribs 23 and retain said plate in position without the employment of screws, rivets, or similar auxiliary fastening devices. The plate 24 is provided with an upstruck annular flange 26, a portion of which is cut away, as indicated at 27, to accommodate the registering-wheel 19. Pivoted to the flange 26 are a pair of oppositely-disposed spring-pawls 28, which pass through openings 29 in said flange and engage the teeth on the computing-wheel 14. The distance between the end of the lip 21 and the adjacent tooth on the wheel 12 is equal to the distance between two of the teeth on said wheel, and the object of the pawls 28 is to prevent the wheel from turning more than the distance of one tooth in either direction when the lip is opposite either pawl.

To set the machine, turn the registering-disk until the numeral "24" appears in the opening 30, and then insert the pointer in the perforation opposite the mark 31 and turn said wheel until the pointer engages the stop 18, which operation will cause "0" to appear at both openings in the casing.

In adding two or more columns the pointer is inserted in the perforation opposite the number on the casing to be added and said wheel turned until the pointer engages the stop, after which said pointer is removed and inserted in the perforation corresponding to the next number to be added, the total appearing at the openings in the casing after each operation, as will be readily understood.

The plate 24 not only reinforces the casing, but also forms a support for the pivoted pawls and acts as a guide or wear-plate for the depending rib of the computing-wheel, while said plate and casing being provided with interlocking parts the use of auxiliary fastening devices is entirely dispensed with.

The device is extremely simple in construction and being formed entirely of sheet metal will withstand very rough usage and may be manufactured at a small cost.

Having thus described the invention, what is claimed is—

1. In a device of the class described, a casing, a toothed computing-wheel rotatably mounted therein, a reinforcing-plate locked in position by engagement with the casing, and provided with an annular flange having oppositely-disposed openings formed therein, pawls pivoted to said flange and extending through the openings for engagement with the teeth on the computing-wheel, and means for rotating said wheel.

2. In a device of the class described, a cas-

ing provided with a plurality of ribs or depressions, a toothed computing-wheel provided with a depending bead rotatably mounted in said casing, an intermediate reinforcing-plate engaging said bead and provided with a plurality of corresponding ribs or depressions adapted to receive the ribs on the casing, a pawl carried by the plate and adapted to engage the teeth on the computing-wheel, and means for rotating said wheel.

3. In a device of the class described, a casing formed in two sections, one of which is provided with a plurality of ribs or depressions, a toothed computing-wheel mounted for rotation in said casing, an intermediate reinforcing-plate provided with corresponding ribs or depressions adapted to engage the ribs on the casing, a pawl carried by the plate and adapted to engage the teeth on the computing-wheel, means for rotating the wheel, and means for securing the two sections of the casing together.

4. In a device of the class described, a casing provided with a plurality of depending ribs or depressions, a toothed computing-wheel mounted for rotation in said casing, an intermediate reinforcing-plate provided with corresponding ribs or depressions adapted to engage the ribs on the casing, a flange formed integral with the plate and provided with oppositely-disposed openings, pawls pivoted to the flanges and extending through said openings for engagement with the teeth of the computing-wheel, and means for rotating said wheel.

5. In a device of the class described, a casing formed in two sections the lower one of which is provided with a plurality of ribs or depressions, a toothed computing-wheel mounted for rotation in said casing, an intermediate reinforcing-plate provided with corresponding ribs adapted to engage the ribs on the lower section of the casing, a flange formed integral with the plate and adapted to engage the upper section of the casing, oppositely-disposed openings formed in said flange, pawls pivoted to the flange and extending through said openings for engagement with the teeth on the computing-wheel, means for rotating the wheel, and means for clamping the two sections of the casing together.

6. In a device of the class described, a casing comprising a pair of spaced sections one of which is provided with a plurality of ribs or depressions, a toothed computing-wheel provided with a depending bead mounted for rotation in said casing, an intermediate reinforcing-plate engaging the bead on the computing-wheel and provided with corresponding ribs or depressions fitting within the ribs on the casing, a flange formed on said plate and engaging the upper section of the casing, oppositely-disposed openings formed in said flange, spring-pressed pawls pivoted to the flange and extending through said openings

for engagement with the teeth on the computing-wheel, means for rotating the wheel, and a clamping-band for securing the two sections of the casing together.

- 5 7. In a device of the class described, a casing comprising a pair of spaced plates one of which is provided with a plurality of ribs or depressions, a centrally-disposed hub connecting said plates, a toothed computing-wheel
10 mounted for rotation on said hub, an intermediate reinforcing-plate provided with corresponding ribs or depressions fitting within the ribs on the casing, a flange on the rein-

forcing-plate and engaging the upper plate of the casing, openings formed in said flange, 15
pawls pivoted to the flange and extending through said openings for engagement with the teeth on the computing-wheel, and a lever fulcrumed on the hub for rotating said wheel.

In testimony that I claim the foregoing as 20
my own I have hereto affixed my signature in the presence of two witnesses.

FRANKLIN T. BETTS.

Witnesses:

GRACE L. BAILEY,
K. V. HAYMAKER.