

No. 768,097.

PATENTED AUG. 23, 1904.

C. WALES.
CORRECTING MECHANISM FOR ADDING MACHINES.

APPLICATION FILED SEPT. 15, 1903.

NO MODEL.

Fig. 1.

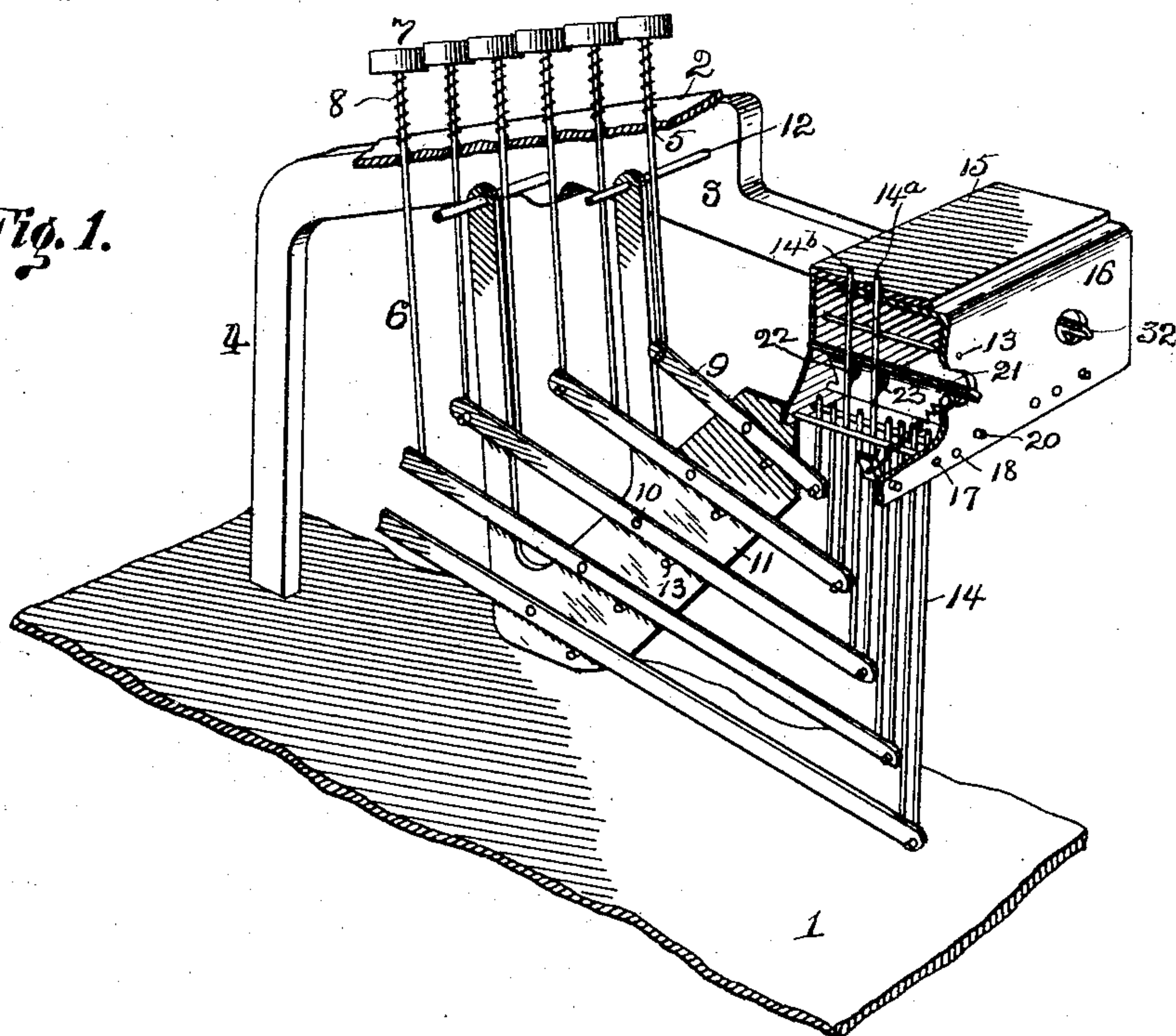


Fig. 2.

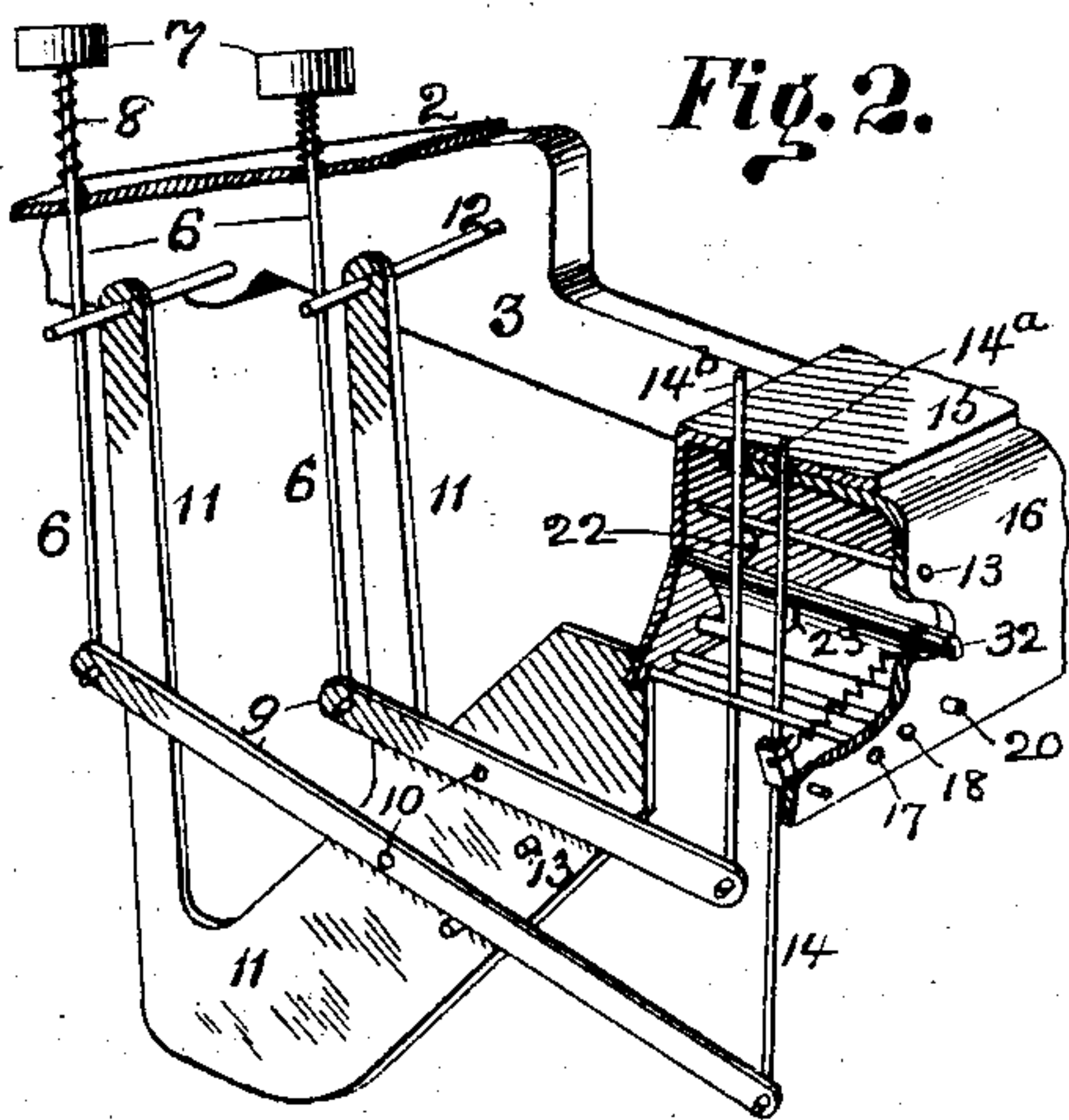


Fig. 3.

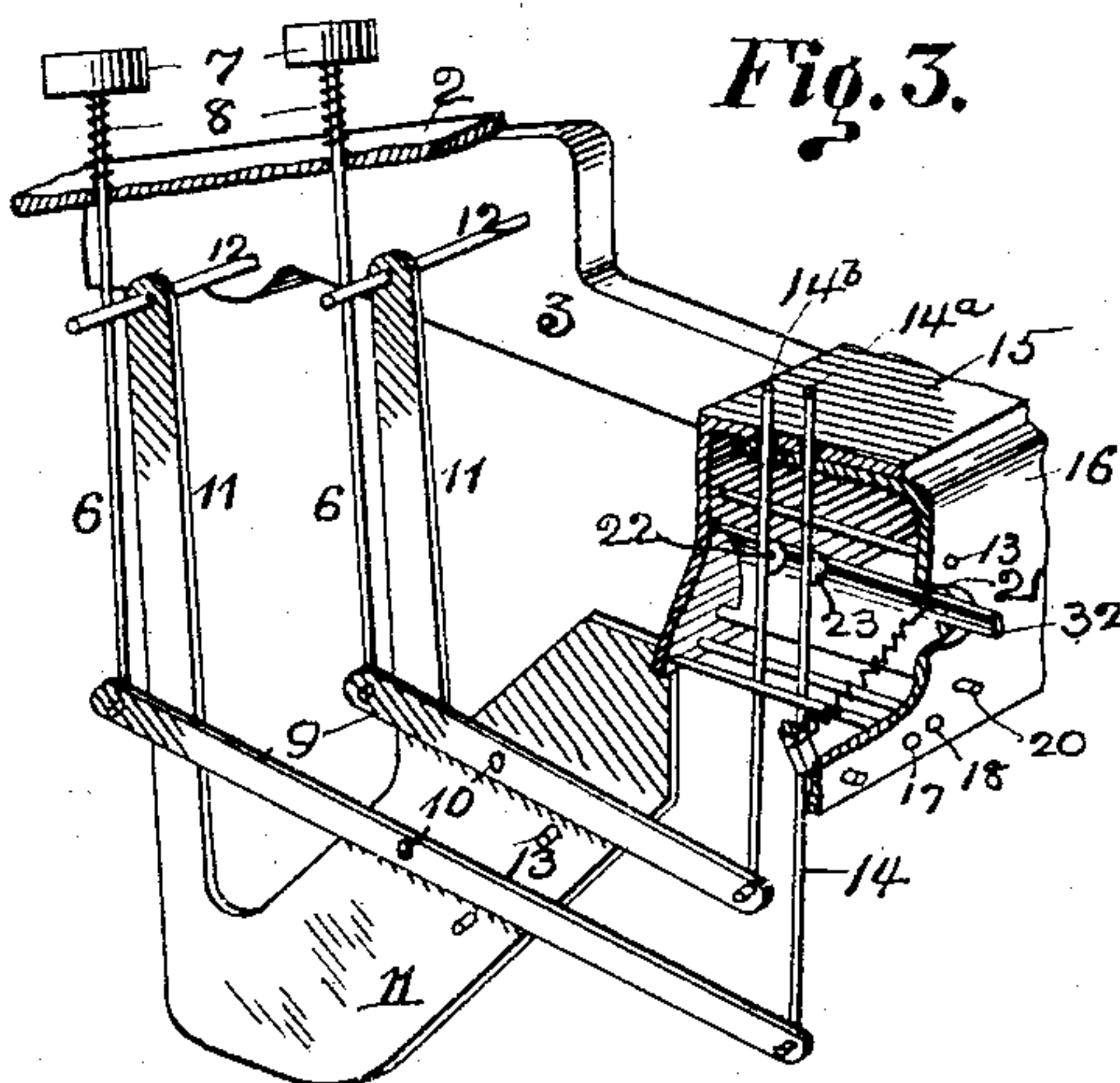
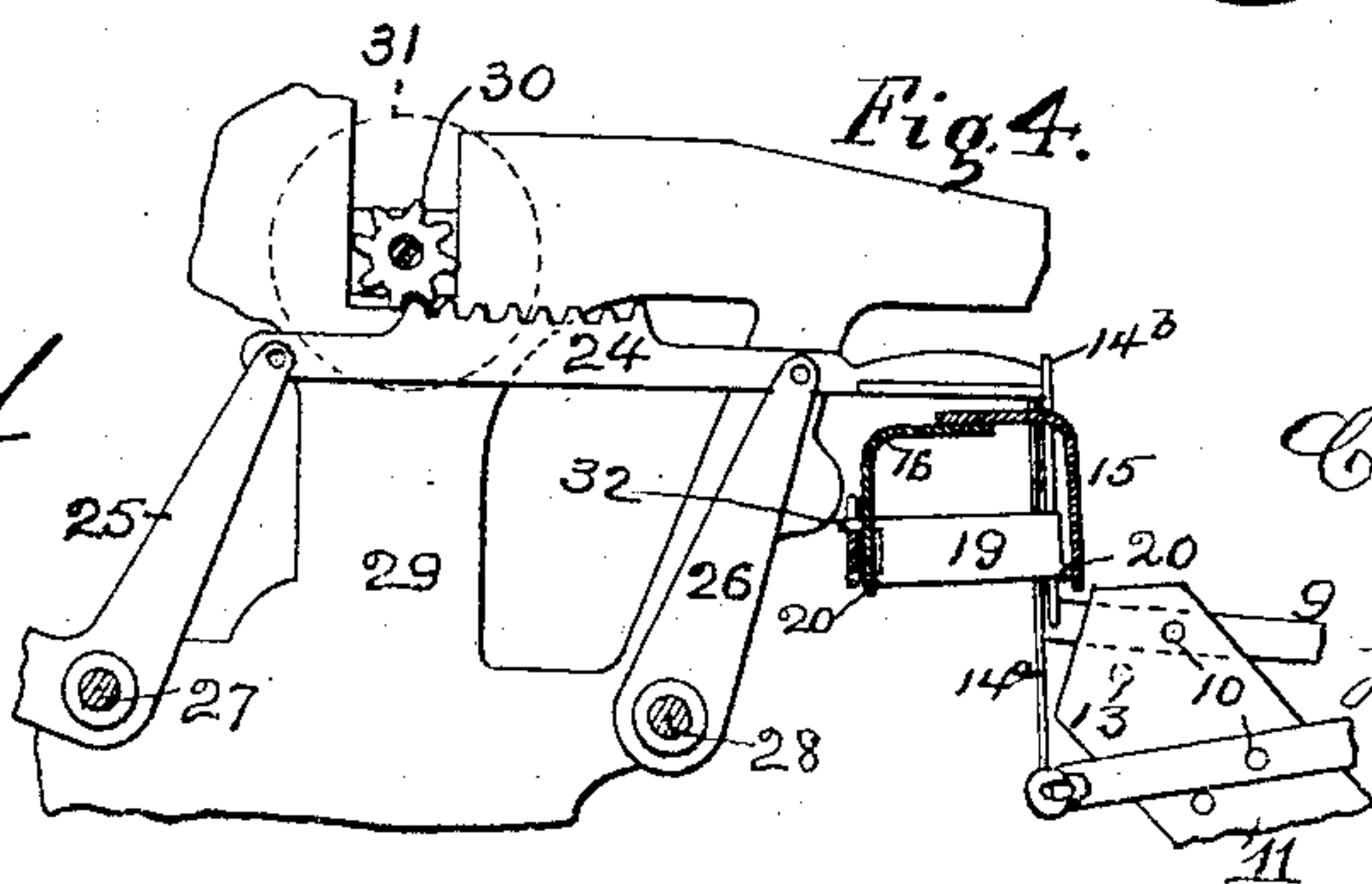


Fig. 4.



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CHARLES WALES, OF DETROIT, MICHIGAN, ASSIGNOR TO THE ADDER MACHINE COMPANY, A CORPORATION OF NEW JERSEY.

CORRECTING MECHANISM FOR ADDING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 768,097, dated August 23, 1904.

Application filed September 15, 1903. Serial No. 173,317. (No model.)

To all whom it may concern:

Be it known that I, CHARLES WALES, a citizen of the United States, and a resident of Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Correcting Mechanism for Adding-Machines, of which the following is a specification.

This invention relates to machines for adding and registering, but has particular reference to mechanism included in such machines for correcting errors in depressing the keys.

In the class of adding-machines to which this invention appertains the result of each operation is exhibited upon numeral-wheels which are rotated by means of reciprocating racks engaging pinions on the wheels, the racks being actuated on their return or active movements by means of a main operating-handle through the medium of suitable connections and set into operative position by their first or preparatory movements, such first movements being limited in extent by stops arranged in series—one series for each rack and numeral-wheel—which stops are set in the path of the racks by the depression of keys likewise arranged in corresponding series. In such machines, an example of which is fully described and illustrated in an application for United States Letters Patent of even date herewith and to which application reference is hereby made for a fuller explanation than is necessary herein, the depressed keys remain down until the operation of adding and registering is completed, when they are restored to or reset in normal or raised position by suitable devices forming part of the regular operating mechanism. Means are also provided for raising or restoring depressed keys to their normal positions independent of the regular operating mechanism, whereby any error made by depressing wrong keys may be corrected, and such correcting mechanism forms the subject-matter of the present application.

The present invention therefore consists in the improved construction, arrangement, and combination of the parts of such a correcting

mechanism, as will be hereinafter fully described and afterward specifically claimed. 50

In order that my invention may be readily understood, I have illustrated it in the accompanying drawings with such connecting parts of the general machine as are necessary to a full understanding thereof, and while I show and describe my present mechanism as applied to my construction of adding-machines it will be obvious to those skilled in the art that the invention is readily adaptable to other forms of adding-machines. 60

Referring particularly to the drawings, Figure 1 represents my invention in perspective view, the parts being shown in their normal or rest positions, parts being broken away. Fig. 2 represents a similar view with some of the parts shown in Fig. 1 omitted, showing the parts in the positions assumed when a key is depressed and a stop raised. Fig. 3 represents a view similar to that of Fig. 2, showing the parts in the positions assumed at the moment a stop has reached the releasing position during its upward movement. Fig. 4 represents in side elevation part of the key mechanism in connection with a rack and numeral-wheel, with the rack in its forward position against a raised stop. 75

Like reference characters mark the same parts in all of the figures of the drawings.

1 indicates a part of the base of the machine, which may be of any desired material and form, preferably rectangular, which supports all the mechanism. 80

2 indicates a portion of the keyboard, to the under side of which are secured frame-pieces 3, only one of which is shown, there being one on each side of the machine, from the forward ends of which depend vertical supports or legs 4, which rest upon the base of the machine and serve to support that end of the keyboard in operative position. The keyboard is perforated with longitudinal rows of holes 5 in series side by side, only one series being shown, in which holes are slidably mounted key-rods 6, upon the upper ends of which are keys 7, held normally in their raised position by means of springs 8, coiled around 95

the rods between the keys and the keyboard. At the lower ends of the keys are pivoted together levers 9, which are themselves pivotally connected, as at 10, to frame-pieces 11, depending from rods 12, secured in the frame-pieces 3, the upward movement of the keys under the influence of the springs 8 being limited by pins 13, secured in the frame-pieces 11 below the key-levers. At the forward ends of the key-levers are pivotally connected vertical stop-rods 14, which pass upward through suitable perforations in angle-plates 15 and 16, each series of stops being guided between pins 17 and 18.

19 indicates a broad pawl or shutter pivotally mounted on pintles 20 in the angle-plates 15 and 16 and normally held in engagement with all the stops of a series by means of a spring 21. On each of the stops is provided a lobe or lug 22 and 23, the lobes or lugs of the whole series being in the same horizontal position—their normal position—when the stops are lowered, being just below the point where the edge of the shutter rests against the stop, so that in such normal position the shutter rests on top of the lobes. For the purpose of clearness of description I have indicated two of these stops by the numerals 14^a and 14^b.

When a key is depressed—as, for instance, as shown in Fig. 2—its stop (in this instance the stop 14^b) is raised in the path of a rack 24, (see Fig. 4,) mounted upon swinging arms 25 and 26, pivoted on rods 27 and 28, secured in the main side frame-pieces 29 of the machine and adapted to mesh with a pinion 30, secured to a numeral-wheel 31. (Indicated in dotted lines in Fig. 4.) In rising, the lobe 23 of stop 14^b presses the edge of the shaft back and passes above it, its normal position when raised being such that it rests upon the top of the shutter, as shown in Fig. 2. The shutter holds the raised stop in position until moved away from the stop, when by reason of the action of the spring 8 the key will be raised and the stop lowered into position. In the regular operation of the machine this occurs after each adding operation, being effected through mechanisms not shown, but connected with projecting ends 32 of the shutter, but which forms no part of this invention. In setting up the stops, however, errors may occur by depressing the wrong key.

Supposing an error should have been made in depressing the key illustrated, and thereby raising the stop 14^b, the error may be corrected by depressing the correct key, which will raise its stop—as, for instance, the stop 14^a. During the upper movement of the stop 14^a its lobe 23 presses back the shutter, and as soon as the shutter is pushed away to its fullest extent and rests against the outside of the lobe 23 the lobe 22 of stop 14^b will be free to drop

and the stop, under the influence of spring 8, will be carried down to its normal position. The correct stop 14^a being raised to the limit of its upward movement will be held in such raised position by the shutter engaging under lobe 23.

It will be apparent from the foregoing description that all that is necessary to correct an error in depressing the wrong key is to depress the right key, which will remain depressed, while the wrong key will be raised to its normal position.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In an adding-machine provided with a series of keys arranged in a bank, a numeral-wheel cooperating with said keys, a rack for operating the numeral-wheel, and a row of stops in the line of movement of the rack, the combination of connections between each key of the bank and its respective stop whereby said stop may be raised by depressing said key, means for automatically retaining any stop of the bank in its raised position, and means operated by the depression of another key of the bank for releasing any stop which may have been raised.

2. In an adding-machine provided with a series of keys arranged in a bank, a numeral-wheel cooperating with said keys, a rack for operating the numeral-wheel, and a row of stops in the line of movement of the rack, the combination of connections between each key of the bank and its respective stop whereby said stop may be raised by depressing said key, a broad pawl or shutter for automatically engaging and retaining any stop of the row in its raised position, and means on each stop for releasing all raised stops of the row upon the depression of the key.

3. In an adding-machine provided with a series of keys arranged in a bank, a numeral-wheel cooperating with the keys, a rack for operating the numeral-wheel, and a row of stops in the line of movement of the rack, the combination of connections between each key of the bank and the respective stop of its row whereby said stop may be raised by depressing said key, a broad pawl or shutter yieldingly pressed against all of the stops of the row, and a lobe on each stop which, when the stop is raised, passes under the shutter, presses it away from all of the stops, and is engaged by the shutter to hold the stop up.

Witness my hand this 10th day of September, 1903, at the city of New York, in the county and State of New York.

CHARLES WALES.

Witnesses:

HERMAN MEYER,
S. BRASHEARS.