(No Model.) 3 Sheets—Sheet 1.

H. G. O'NEILL.

CASH REGISTER AND INDICATOR.

No. 480,123. Patented Aug. 2, 1892.

Fig. 4.

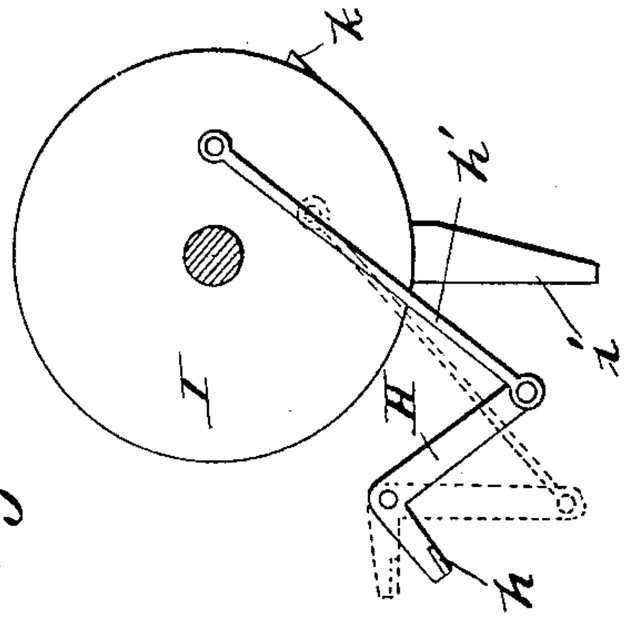

Fig. 1.

WITNESSES:

Samuel Ker

Philip B. Wells.

INVENTOR

Henry G. O'Neill

BY Edw. Gudnow

his ATTORNEY.

(No Model.) 3 Sheets—Sheet 2.

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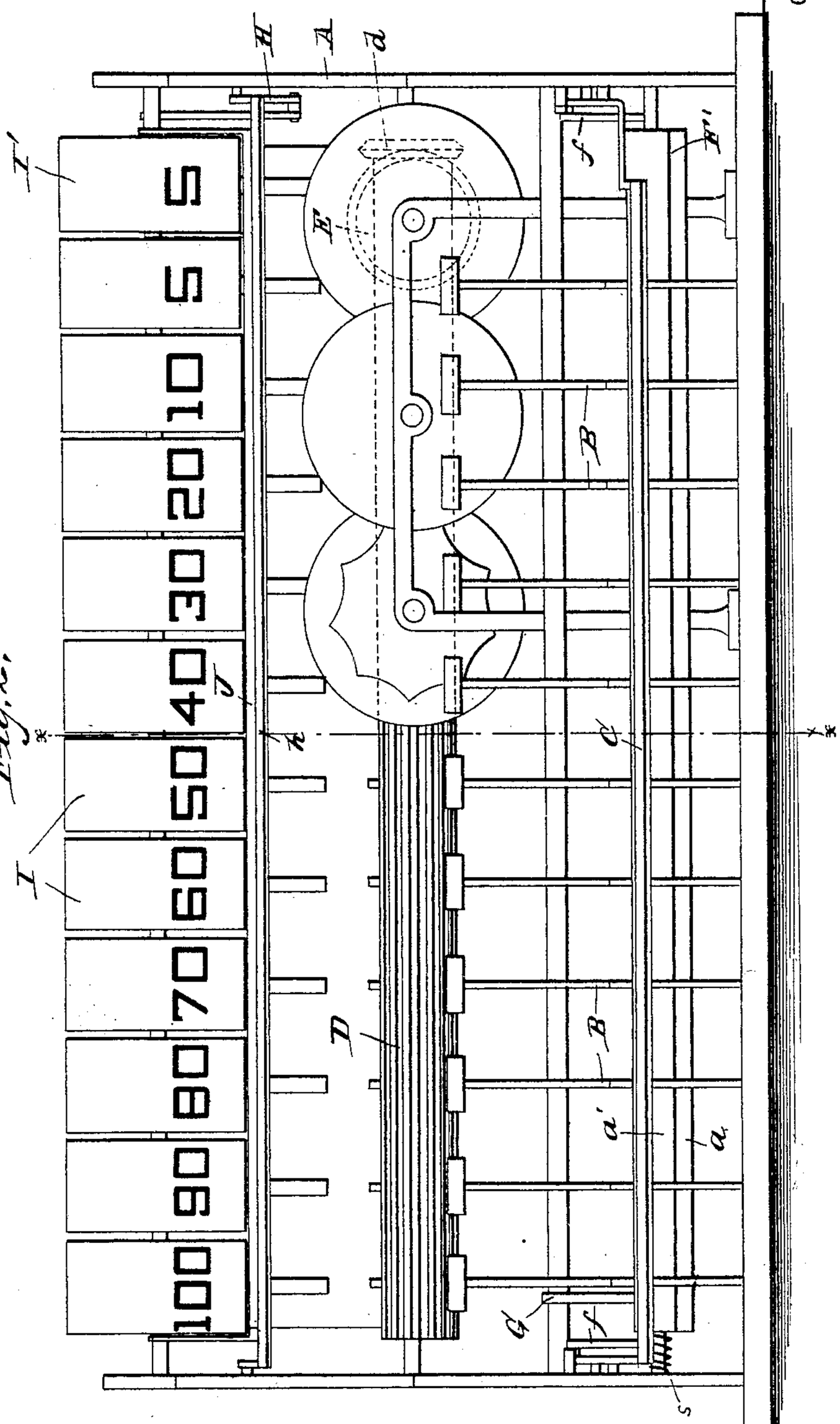

Fig. 2.

WITNESSES:
Samuel Ker
Philip L. Masi.

INVENTOR
Henry G. O'Neill
BY E. W. Anderson
his ATTORNEY.

(No Model.)

3 Sheets—Sheet 3.

H. G. O'NEILL.

CASH REGISTER AND INDICATOR.

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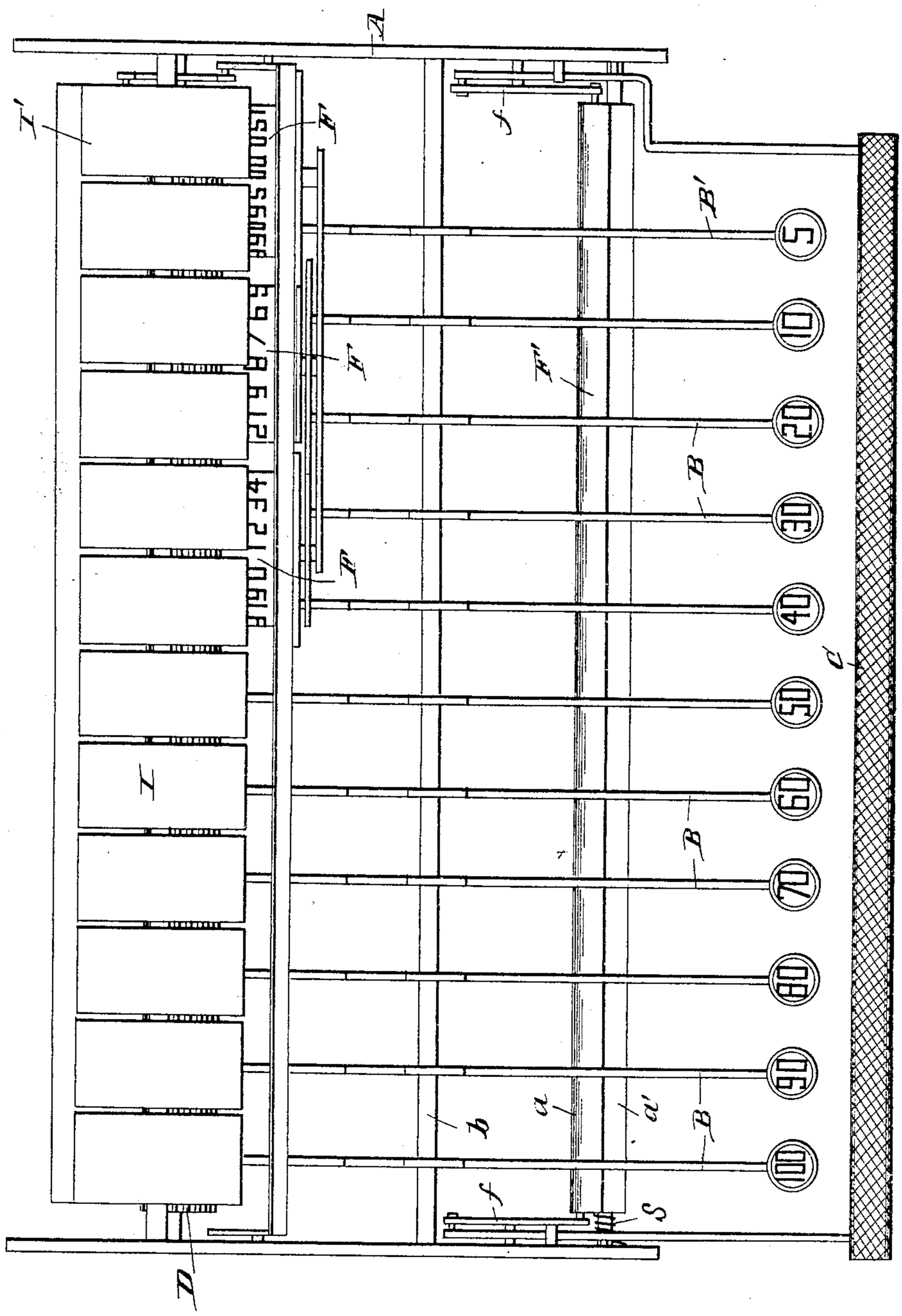

Fig. 3.

WITNESSES:

Samuel Ker.

Philip Allasi.

INVENTOR

Henry G. O'Neill.

BY Edwin Lindsay

his ATTORNEY.

UNITED STATES PATENT OFFICE.

HENRY G. O'NEILL, OF LOUISVILLE, KENTUCKY, ASSIGNOR TO THE STANDARD REGISTER COMPANY, OF BOSTON, MASSACHUSETTS.

CASH REGISTER AND INDICATOR.

SPECIFICATION forming part of Letters Patent No. 480,123, dated August 2, 1892.

Application filed November 4, 1891. Serial No. 410,866. (No model.)

To all whom it may concern:

Be it known that I, HENRY G. O'NEILL, a subject of the Queen of Great Britain, and a resident of Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Cash-Registers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a vertical transverse section taken on line *x x*, Fig. 2. Fig. 2 is a front elevation. Fig. 3 is a top plan view, and Fig. 4 is a detail view of the indicators and attachments.

This invention has relation to cash-registers, and refers more particularly to novel devices and constructions designed to lessen the number of key levers and indicators usually employed for a similar number of values, all as hereinafter set forth.

In the accompanying drawings the letter A designates the framework of the machine.

B B′ represent the key-levers, whose finger-pieces may be marked as desired. In the construction shown the keys are marked for five cents, ten cents, twenty cents, and so on, in multiples of ten up to one dollar. This provides for ten keys B, and in addition a five-cent key B′—eleven keys in all. Transactions relating to odd values, relating to the multiples of five, are effected by means of the ten keys first referred to and an adjustable device F′, common to all said ten keys and operated by an independent key or bar lever. (Indicated at C.) By the means hereinafter shown the machine may be worked for any value from five cents, ten cents, fifteen cents, and so on in multiples of five up to one dollar with a small number of keys, and thereby the machine can be made very compact and light. The key-levers are pivoted at *b* and may be provided with arc ratchet-arms B″, extending from their inner ends to actuate a toothed roller or shaft D, carrying at its end a reversible pinion *d*, engaging the first toothed wheel E of the adding-gear.

The adding-wheels are indicated at F, and as such wheels have been fully described in other pending applications of mine, and as other adding-wheels which I have described in former patents may be used, it is not necessary to enter into the details of their construction further than to explain that the first toothed wheel E is carried by the action of a key and the movement of the toothed shaft D thereby through an arc of sufficient extent to turn the first adding-wheel the proper distance to add the value of the key operated.

The downward movement of the keys B is limited by an adjustable stop-bar or cam-bar F′, which is pivoted at its ends to the framework and is provided with two bearings *a* and *a′*, the latter having a shorter radial distance from the axes of the bar than the former. Normally the bearing *a* is presented upward to receive the impact of the key-levers and limit their downward movements, and when this bearing is presented the key-levers will operate the mechanism for their marked values—to wit, ten and multiples of ten. This position of the stop-bar is maintained by means of the spring *c* and stop *c′*; but when it is necessary to operate the machine for a multiple of five the stop-bar is turned a little on its axis by means of the five-cent bail or key-bar C, which actuates a compound lever *f* at the end of the stop-bar. For instance, when the value sixty cents is to be worked and indicated, the key marked "60" is depressed, and its movement being limited by the bearing *a* of the stop-bar its value is added and indicated; but when the value sixty-five cents is to be worked the five-cent stop-bar is turned by the five-cent bail C and held down while the sixty-cent key is operated, this action allowing this key to be depressed an extra distance sufficient to move its ratchet-arm a little farther in order to add the five cents and to move on the extra five-cent indicator I′ sufficiently to display its value-figure in reading position, and as the sixty-cent indicator I has already been moved by the ratchet-arm to reading position it is evident that the indicators for sixty cents and five cents will both be displayed at the same time, and these indicators will be held in displayed position until the next key is operated.

The key-levers are retracted or returned to normal position by a spring retractor-bar G, which is common to all said levers, and the

adjustable stop-bar F is held in normal position with its bearing *a* presented by means of a spring *s*, as shown in Figs. 2 and 3. This spring is shown as connected at one end to the bar and at the other end to the frame in such a manner that its tension normally holds the bearing *a* presented to the action of the key, as stated.

The indicators shown in the construction are rollers arranged side by side, and are of sufficiently-large diameter and width to display thereupon large figures or symbols, which can be readily seen at some distance. The series of indicators comprises eleven, as at I, which are turned by similar devices, and one, as at I′, which is turned by means of an independent connection, which is operated in common by all the keys B. Each indicator I is provided with a depending arm *i*, which is engaged by the end of the ratchet-arm of the key corresponding to said indicator when said key is operated, and thereby the indicator is turned sufficiently to display its figure in reading position, the spring-actuated retraction-bar J, which is common to all said indicators, being at the same time moved from its normal position. When the indicator I reaches its normal position, it is held thereto until the next key is operated by the pawl-bar K, which engages the tooth *k* of the indicator. The pawl-bar K has a depending flange or series of depending arms, (indicated at *k*′,) which is operated by a vibratory or releasing pawl *l* on the ratchet-arm of the key-lever, and when any of the indicators are in reading position and held thereto by the pawl-bar they will be returned to normal position by the action of the returning-bar J when the next key is operated, as this action will at once move the pawl-bar and release the indicators—that is to say, when a subsequent key is depressed its releasing-pawl *l*, by its action on the respective arm *k*′ of the pawl-bar, will release the pawl from engagement with the tooth *k*, and the bar I, which is spring-actuated, will be drawn by the springs to its normal position, carrying with it the indicators by its engagement with the arm *i* thereof. This mechanism is sufficient for the operation of any of the indicators I; but when the extra five-cent indicator I′ is to be actuated by the extra or additional movement of any of the keys B of the ten-cent or multiple-of-ten-cent series, a bail-lever connection H to said indicator I is brought into play. The bail or transverse bar *h* of said bail-lever connection extends transversely of the indicators in position just beyond the upper limit of the movement of the ends of the ratchet-arms of the keys B, when said keys are stopped by the higher bearing *a* of the stop-bar F; but when this stop-bar is turned by depressing the five-cent-bail lever and presents its lower bearing *a*′ the end of the ratchet-arm will move an additional distance, and in so doing will engage the transverse bar *h* of the bail-lever H, and by means of the link *h*′, connecting the same to the indicator I′, will turn the same sufficiently to bring its 5-mark in reading position. This indicator I′ will be held to reading position by the common pawl-bar and released by the operation of any key of the series, as hereinbefore described in reference to the indicators I.

What I claim, and desire to secure by Letters Patent, is—

1. In a cash-register, the combination, with a series of keys marked with multiples of ten, a five-cent-key lever, and an independent bail or key lever representing five cents, common to all said keys and adapted to be operated in connection therewith, of a series of adding-wheels, connecting mechanism, and an adjustable stop-bar having stop-bearings of varying radial distances from the axis of said stop-bar, substantially as specified.

2. In a cash-register, the combination, with a series of keys marked with multiples of ten, and a five-cent-key lever, all in connection with adding mechanism, of an additional five-cent bail or key lever, an adjustable stop-bar having stop-bearings of varying radial distances from its axis, and a series of indicators, substantially as specified.

3. In a cash-register, the combination, with a series of keys marked with multiples of ten, and a five-cent-key lever, of an additional five-cent bail or key lever, an adjustable stop-bar having stop-bearings of varying radial distances from its axis, a series of indicators marked with multiples of ten, and two five-cent indicators, substantially as specified.

4. In a cash-register, the combination, with a series of keys marked with multiples of ten, and a five-cent-key lever, all in connection with adding mechanism, of an additional five-cent bail or key lever, an adjustable stop-bar having stop-bearings of varying radial distances from its axis, a series of indicators marked with multiples of ten, and two five-cent indicators, substantially as specified.

5. In a cash-register, the combination, with a series of keys marked with multiples of ten and a five-cent lever, all in connection with adding mechanism, of an additional five-cent bail or key lever, an adjustable stop-bar having stop-bearings at varying radial distances from its axis, the series of indicators operated each by its respective key, and the independent indicator arranged to be operated in common by all the keys, and the necessary releasing and actuating mechanism for said indicators, substantially as specified.

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

HENRY G. O'NEILL.

Witnesses:
PHILIP C. MASI,
CHAS. L. TAYLOR.