Dec. 30, 1924.

1,520,727

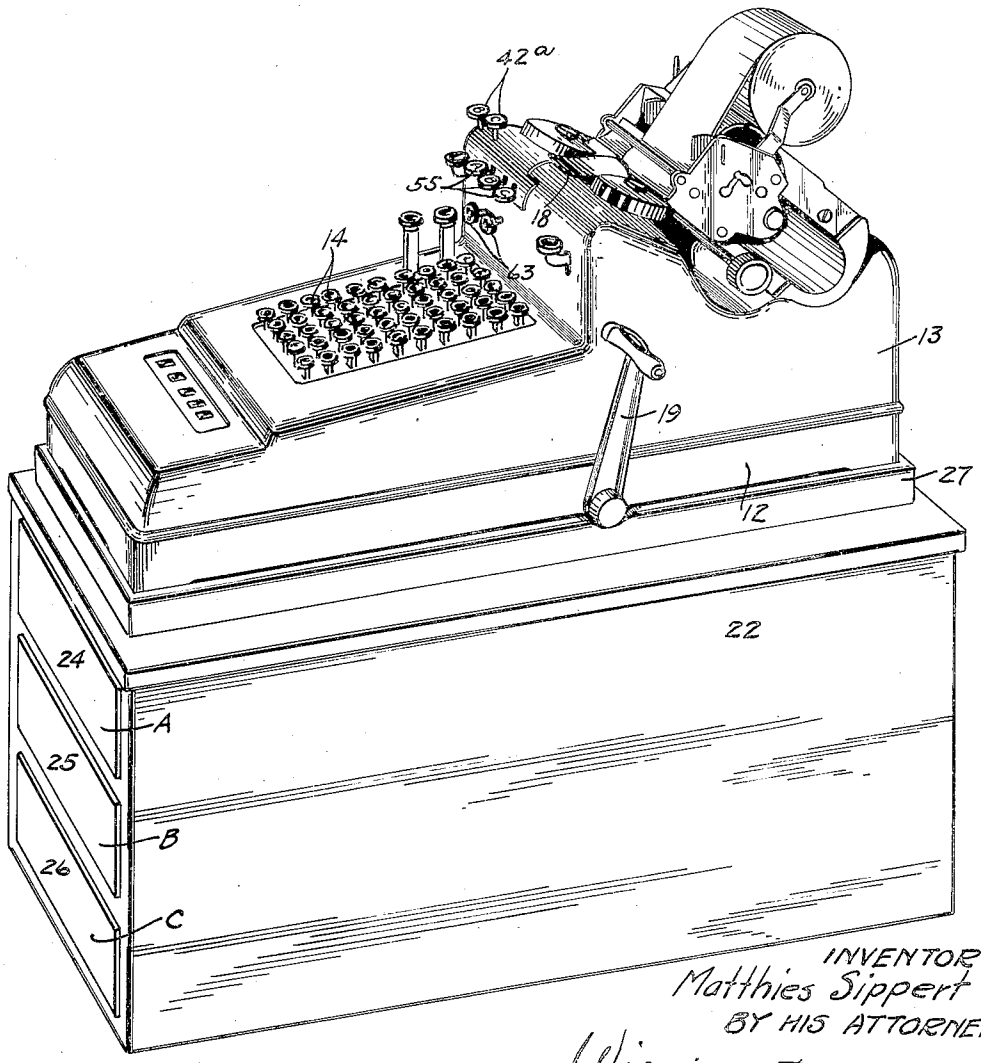
M. SIPPERT

COMPUTING MACHINE

Filed May 19, 1920

4 Sheets-Sheet 1

Fig. 1




INVENTOR
Matthies Sippert
BY HIS ATTORNEYS
Williamson Merchant

Dec. 30, 1924.

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M. SIPPERT

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Fig. 2

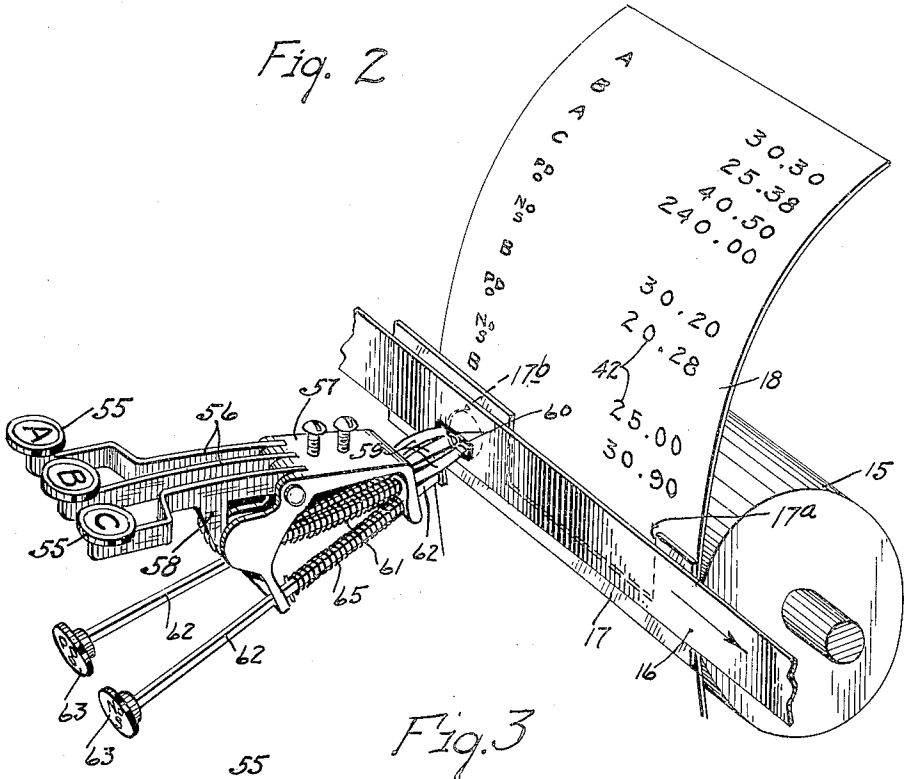



Fig. 3

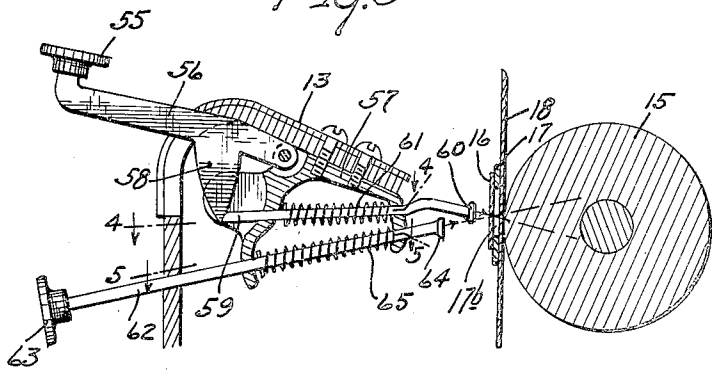



Fig. 5

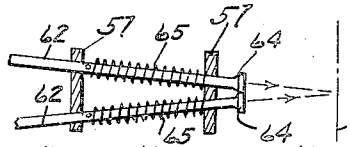
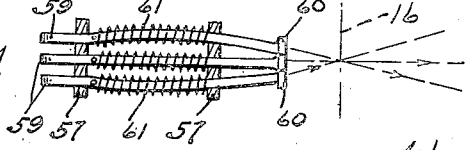



Fig. 4




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Fig. 8

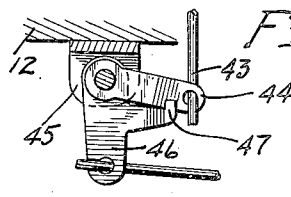



Fig. 7

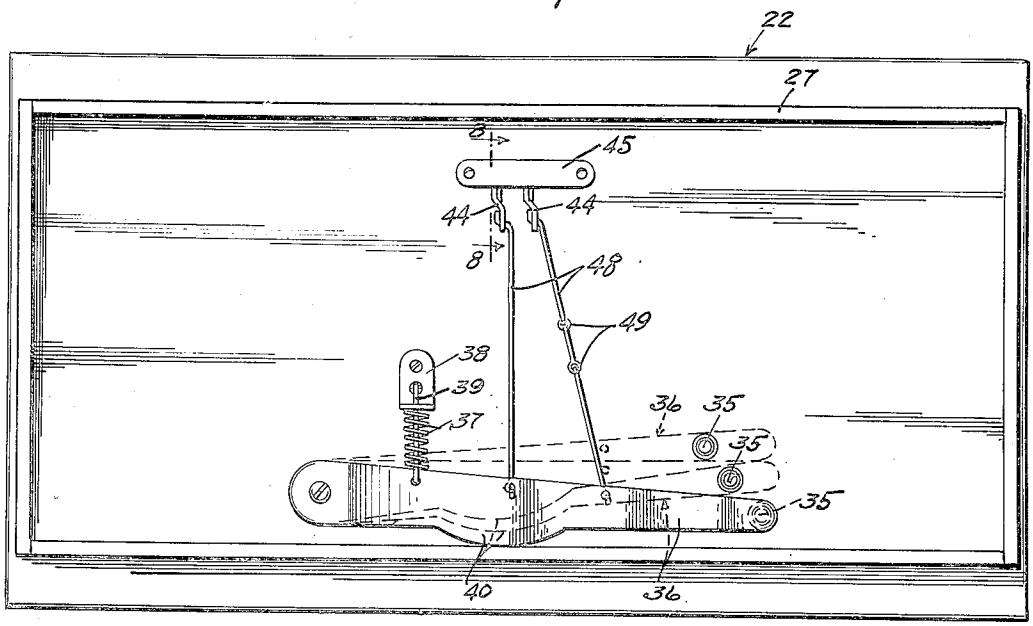
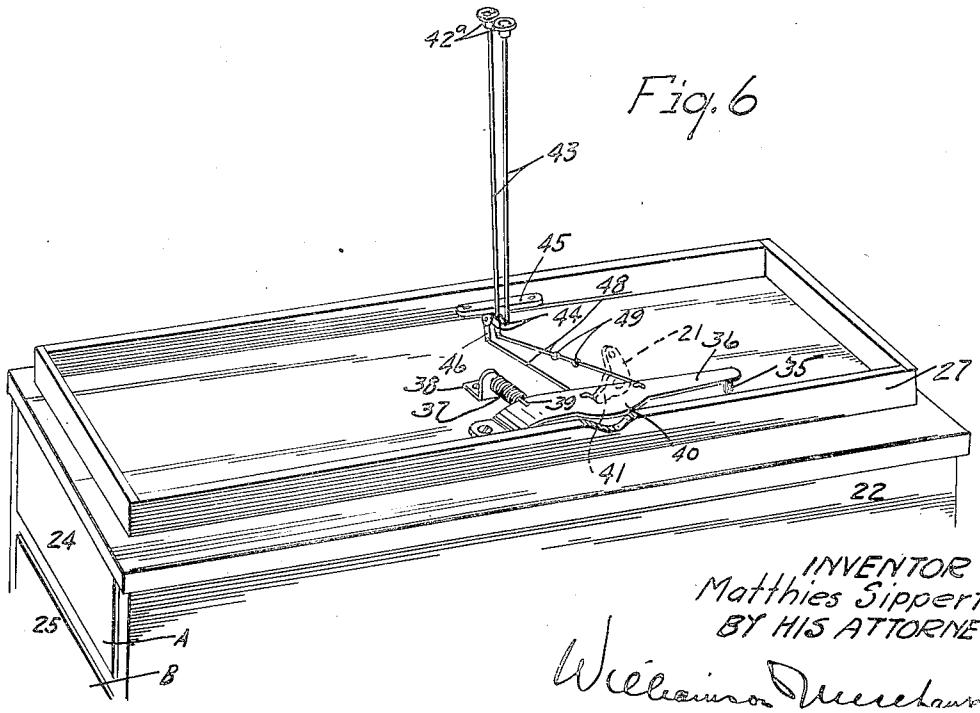



Fig. 6




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M. SIPPERT

COMPUTING MACHINE

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Fig. 9

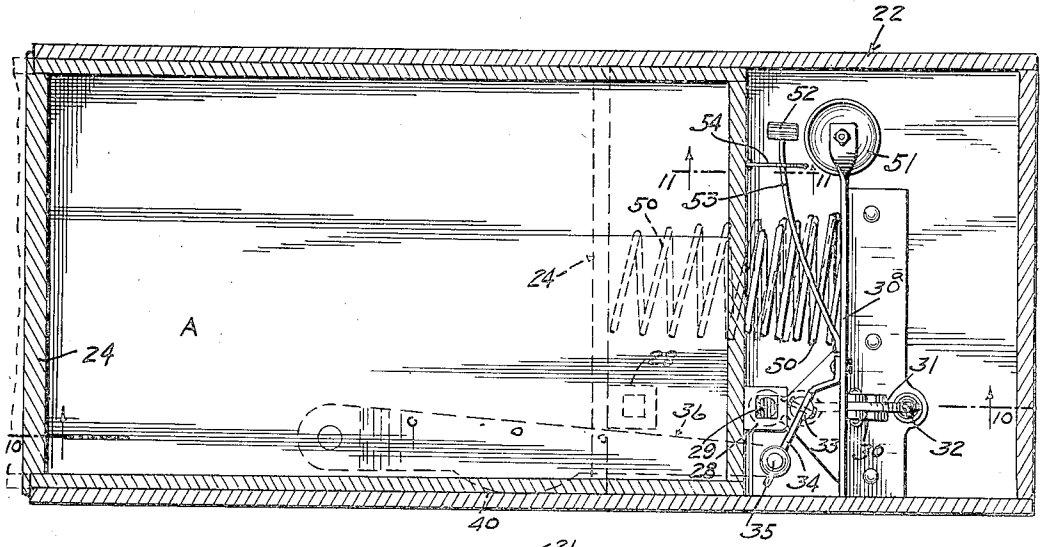
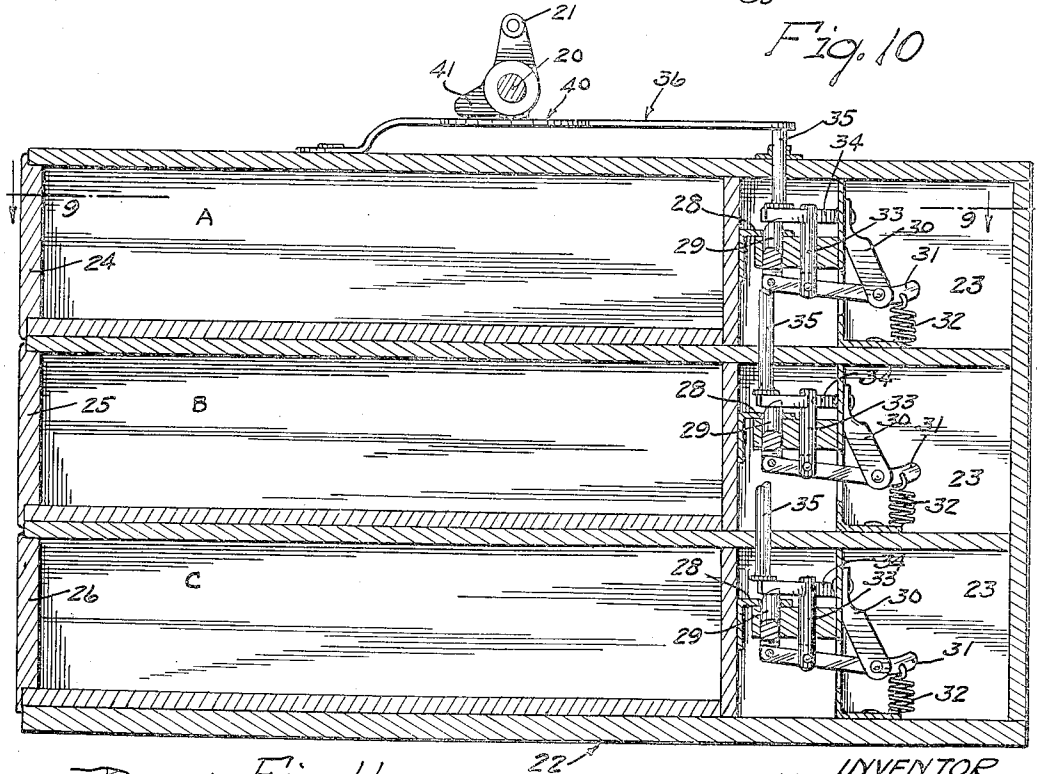



Fig. 10



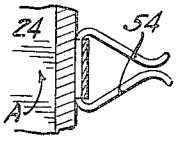




Fig. 11

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William Greenbaum

Patented Dec. 30, 1924. 1,520,727

# UNITED STATES PATENT OFFICE.

MATTHIES SIPPERT, OF BENTLEY, NORTH DAKOTA.

## COMPUTING MACHINE.

Application filed May 19, 1920. Serial No. 382,516.

*To all whom it may concern:*

Be it known that I, MATTHIES SIPPERT, a citizen of the United States, residing at Bentley, in the county of Hettinger and State of North Dakota, have invented certain new and useful Improvements in Computing Machines; and I do hereby 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.

My invention relates to improvements in computing machines and more particularly to that type of machine commercially known as an adding and listing machine, and has for one of its objects to provide a cabinet having a plurality of lock drawers and selective key-actuated mechanism for locking the same, whereby a drawer may be provided for each clerk in which he may keep his cash. A further object of the invention is to provide identifying key-actuated type, preferably arranged for co-operation with the inking ribbon of the machine to print on the record sheet, in the machine on which the sales are listed, a character identifying the clerk making the sale. A still further object of the invention is to provide memorandum key-actuated type, also preferably arranged for co-operation with the inking ribbon of the machine to print on the record sheet such notations as "No sale," "Money paid out," and the like.

To the above end, the invention consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings:

Fig. 1 is a perspective view of an adding and listing machine having the invention embodied therein;

Fig. 2 is a fragmentary perspective view of the identification and memorandum key mechanism, together with the inking ribbon, platen and record sheet;

Fig. 3 is a view partly in side elevation and partly in vertical section illustrating the same parts shown in Fig. 2;

Fig. 4 is a detail view partly in plan and partly in horizontal section, taken on the line 4—4 of Fig. 3;

Fig. 5 is a detail view partly in plan and partly in horizontal section, taken on the line 5—5 of Fig. 3;

Fig. 6 is a perspective view of the cabinet and selective key mechanism;

Fig. 7 is a plan view of the parts shown in Fig. 6, with some parts removed;

Fig. 8 is a detail view with some parts sectioned on the line 8—8 of Fig. 7, on an enlarged scale;

Fig. 9 is a view in horizontal section taken on the line 9—9 of Fig. 10;

Fig. 10 is a longitudinal vertical section taken on the irregular line 10—10 of Fig. 9; and

Fig. 11 is a detail view partly in elevation and partly in vertical section taken on the line 11—11 of Fig. 9.

The invention, as shown, is embodied in a Burroughs computing machine, commercially known as an adding and listing machine, and of the parts thereof, it is important to note the base 12, casing 13, bank of type-setting keys 14, platen roller 15, inking ribbon 16, guard plate 17, roll of paper or record sheet 18, hand crank 19 and operating shaft 20 having an arm 21, to which certain of the operating mechanism, not shown, is attached.

Referring now in detail to the invention, the numeral 22 indicates a cabinet having three vertically spaced compartments 23 in which are mounted upper, intermediate and lower cash drawers 24, 25 and 26, respectively. On top of the cabinet 22 is a rectangular retaining flange 27, within which the base 12, of the machine, rests. Each drawer is held locked by a lock plate 28 and cooperating lock bolt 29 arranged to enter an aperture in said lock plate. The lock plates 28 are secured to the backs of the drawers and the lock bolts 29 are mounted in seats formed in brackets 30, secured in the compartments 23, for vertical endwise sliding movement.

The following mechanism is provided for projecting and retracting each lock bolt 29, towit: Said lock bolts 29 are pivoted at their lower ends to the long ends of the horizontally disposed levers 31 intermediately fulcrumed to the brackets 30. Coiled springs 32, attached to the short ends of the lever 31 and anchored to the brackets 30, yieldingly hold said levers in position to project the lock bolts 29. The upper ends of the lock bolts 29 are beveled and arranged to be

engaged by the lock plates 28 during the closing movement of the drawers to cam said lock bolts out of the paths of movement of said lock plates. Posts 33 work endwise in seats formed in the brackets 30 and have their lower ends pivoted to the lever 31 between the lock bolts 29 and fulcrums for said levers. Levers 34 are intermediately pivoted to the upper ends of the posts 33 and fulcrumed to the brackets 30. Loosely resting on the free end of each lever 34 is a plunger 35, which work in seats formed in the top of the cabinet 22 and said plungers for the two lower drawers work in seats formed in the horizontal partitions between the cabinets 23. These plungers 35 extend through and normally above the top of the cabinet 22 within the flange 27 and are laterally and transversely spaced. To depress any one of the plungers 35 and thereby retract the respective lock bolt 29 and release the held drawer, there is pivoted to the top of the cabinet 22 a finger 36 arranged to swing horizontally with its free end over the plungers 35. The finger 36 is normally and yieldingly held over the plunger 35 for the drawer 24 by a coiled spring 37 compressed between one edge of said finger and a bracket 38 secured to the cabinet 22.

A rod 39, pivoted to the finger 36 and working endwise in a guide opening in the bracket 38, is extended axially through the spring 37 to hold the same in place. The opposite edge of the finger 36, from the spring 37, is intermediately increased in width at 40 for a purpose that will presently appear and to afford a stop arranged to engage the flange 27 and limit the movement of said finger under the action of the spring 37.

To depress the finger 36 and thereby impart a like movement to the plunger 35, over which said finger is positioned, there is formed with the hub of the arm 21 a cam 41. This cam 41 is arranged to engage the portion 40 of the finger 36 when the hand crank 19 is operated to rock the shaft 20 and thereby operate the machine and print the items 42 on the record sheet 18.

To shift and hold the finger 36 over either one of the plungers 35 for the intermediate and lower drawers, there is provided a pair of keys $42^a$ having depending stems 43, which work through the casing 13 and have their lower ends pivoted to horizontally disposed arms 44, which, in turn, are pivoted to a depending bracket 45 secured to the base 12. Also pivoted to the bracket 45 is a pair of depending arms 46 having horizontally offset lugs 47, which support the arms 44 with freedom for lifting movement in respect thereto. Both arms 46 are connected to the fingers 36 by a pair of links 48, one of which is provided with flexible joints 49, for a purpose that will presently appear.

The cash drawers 24, 25 and 26 are further identified by the letters A, B and C, respectively, and the keys that operate the drawers B and C are also identified by corresponding letters. Springs 50, compressed between th rear ends of the drawers and the brackets 30, are under strain to open said drawers when the lock bolts 39 are retracted.

For each drawer, there is an alarm that is sounded when the respective drawer is open. Only one of these alarms is shown and it comprises a bell 51 secured to the respective bracket $30^a$ and a striker 52 having a spring arm 53 also anchored to said bracket. On the rear end of each dawer is a pair of converging spring fingers 54, which embrace the striker arm 53 and when the drawer is open, will first pull said striker arm away from the bell 51 and then release the same to cause the striker 52 to ring the bell. The free ends of the fingers 54 are curved away from each other, and when the drawer is closed, said fingers engage the striker arm 53 and are cammed apart thereby to receive the same.

For each drawer, A, B and C, in the cabinet 22, or in other words, for each clerk, also known by the letters A, B and C, there is an identifying key 55, which carries the same letter as the drawers, towit: A, B and C. These keys 55 are attached to levers 56 fulcrumed to a bracket 57 secured to the casing 13. On lower longitudinal edges of the key levers 56 are depending lugs 58, which bear against the outer ends of bars 59 having on their inner ends type 60 and which type are the letters A, B and C to correspond with identifying characters on the keys 55. The type bars 59 are mounted in aligned seats formed in the bracket 57 and are yieldingly held retracted by coiled springs 61.

Also mounted in the bracket 57, for endwise sliding movement, are two type bars 62 having on their outer ends memorandum keys 63, and on their inner ends type 64. On one of the memorandum keys are characters "P'd O.", which correspond with the respective type 64 and is the abbreviation for "Paid out." The character on the other memorandum key 63 is "No S.", being the abbreviation for "No sale." Coiled springs 65 yieldingly hold the type bars 62 retracted.

By reference to Figs. 2 and 3, it will be noted that the guard plate 17 is interposed between the platen roller 15 and inking ribbon 16 to protect the record sheet 18 from said ribbon, except at $17^a$, where said guard plate is cut away to permit the type set by the bank of keys 14 to strike the inking ribbon 16 and carry the same onto the record sheet 18 to print the numerals 42 thereon. The guard plate 17 is further cut

away at 17b to permit the type 60 and 64 to press the inking ribbon 16 onto the record sheet 18 and print the characters 66 opposite the numerals 42. It is important to note, by reference to Figs. 3, 4 and 5, that the type bars 59 and 62 are arranged on converging lines both horizontally and vertically, so that when projected, they will strike the inking ribbon 16 at the same point.

*Operation.*

From the above description, it is evident that clerks using the same computing machine are each given one of the drawers in the cabinet, in which to keep his cash. In the drawings, the cabinet, as shown, is provided with sufficient drawers for three clerks, known as A, B and C, and the drawers A, B and C are assigned thereto, respectively. If clerk A makes a sale, he depresses the proper keys in the bank 14 to register on the record sheet 18 the amount thereof when the hand crank 19 is operated. He also depresses key A of the selective group 55 to print on the record sheet 18, opposite the amount of the sale, the letter A, thus identifying the sale made by him. Clerk A then operates the hand crank 19 to register the amount of his sale on the record sheet 18 and this movement of the hand crank 19 moves the cam 41 and depresses the finger 36, which, as previously stated, normally overlies the plunger 35 for the drawer A and thereby unlocks said drawer by retracting its locked plunger 35. In case clerk B makes a sale, the machine is operated the same as when clerk A makes a sale, except that he depresses the selective key B to shift the finger 36 over the plunger 35 for the drawer B. Likewise, when clerk C makes a sale, he depresses the selective key C to shift the finger 36 over the plunger 35 for the drawer C. When either of the keys 42a is released, the spring 37 returns the finger 36 to normal position, in which it overlies the plunger 35 for the drawer A.

In case one of the clerks opens one of drawers to make change, he depresses the key 63, having the abbreviation indicated thereon for "No sale", to print the same on the record sheet 18. Should one of the clerks pay out any money from one of the drawers, he depresses the key 63 having indicated thereon the abbreviation for "Paid out" to make such a notation on the record sheet.

By the use of my invention, each clerk keeps his cash separate, and in case mistakes occur, it is easy to trace the same.

In some instances, it might be desirable to have only a single cash drawer and simply rely on the identifying keys and the keys 63 to keep a record of the clerks making sales, change and paying out money.

What I claim is:

1. A computing machine having in combination, a cabinet having a plurality of drawers each having a locking plate thereon, a lock bolt for each plate, a plunger for each bolt operatively connected thereto to withdraw the same, all of said plungers having free ends disposed substantially in one plane, a movable member adapted to aline with any one of said plungers, and an operating means for depressing said member to depress any one of said plungers and release the corresponding drawer.

2. A computing machine having in combination, an operating shaft, a plurality of drawers, a locking bolt for each drawer, a releasing plunger for each locking bolt, and a movable key positioned member adapted to aline with any one of said plungers and actuated from said operating shaft to operate the plunger with which it is alined.

3. In a computing machine, the combination with an operating shaft, of a cabinet having a plurality of drawers, a lock for each drawer, a depressible plunger for each lock to move the same to releasing position, an element on the operating shaft for actuating any one of said plungers to release the drawers, and key-actuated means for making a connection between said element and any one of the locks.

4. In a computing machine, the combination with an operating shaft, of a cabinet having a plurality of drawers, a lock for each drawer, a depressible plunger for each lock to move the same to releasing position, shiftable means for selectively engaging said plungers, an element on the operating shaft for actuating said shiftable means to operate one of said plungers to release the corresponding drawer, and key-actuated connections for moving said shiftable means.

5. In a computing machine, the combination with an operating shaft, of a cabinet having a plurality of drawers, a lock for each drawer including a plunger, a movable finger arranged to be positioned over any one of said plungers, key-actuated connections for moving said finger, and an element on the operating shaft arranged to engage the finger to depress the plunger engaged by the finger.

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

MATTHIES SIPPERT.

Witnesses:

KARL SCHAFER,

O. W. MEYER.