June 17, 1924.

1,497,918

H. LANDSIEDEL

ADDING MACHINE

Filed Jan. 10, 1921

4 Sheets-Sheet 1

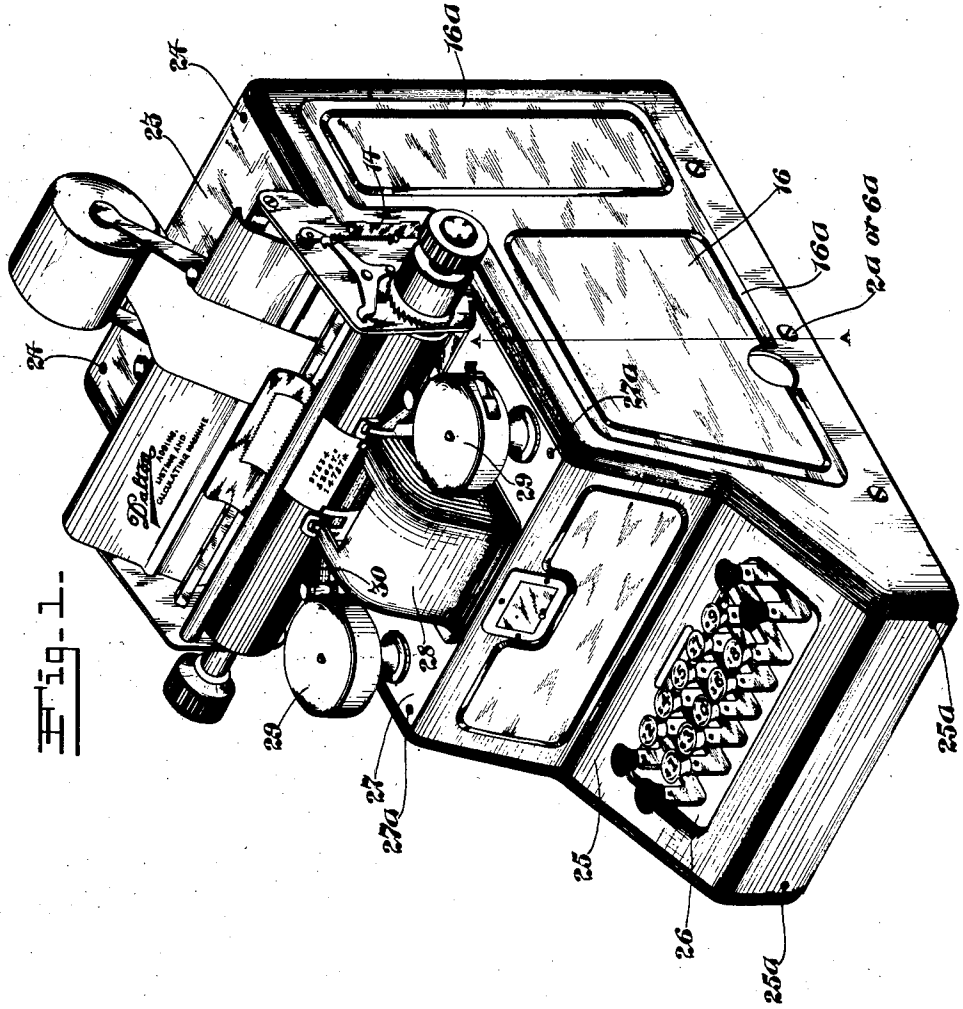


Fig. 1.

INVENTOR.

HARRY LANDSIEDEL,

BY

Rippey & Kingsland,

HIS ATTORNEYS.

June 17, 1924. 1,497,918

H. LANDSIEDEL

ADDING MACHINE

Filed Jan. 10, 1921 4 Sheets-Sheet 2

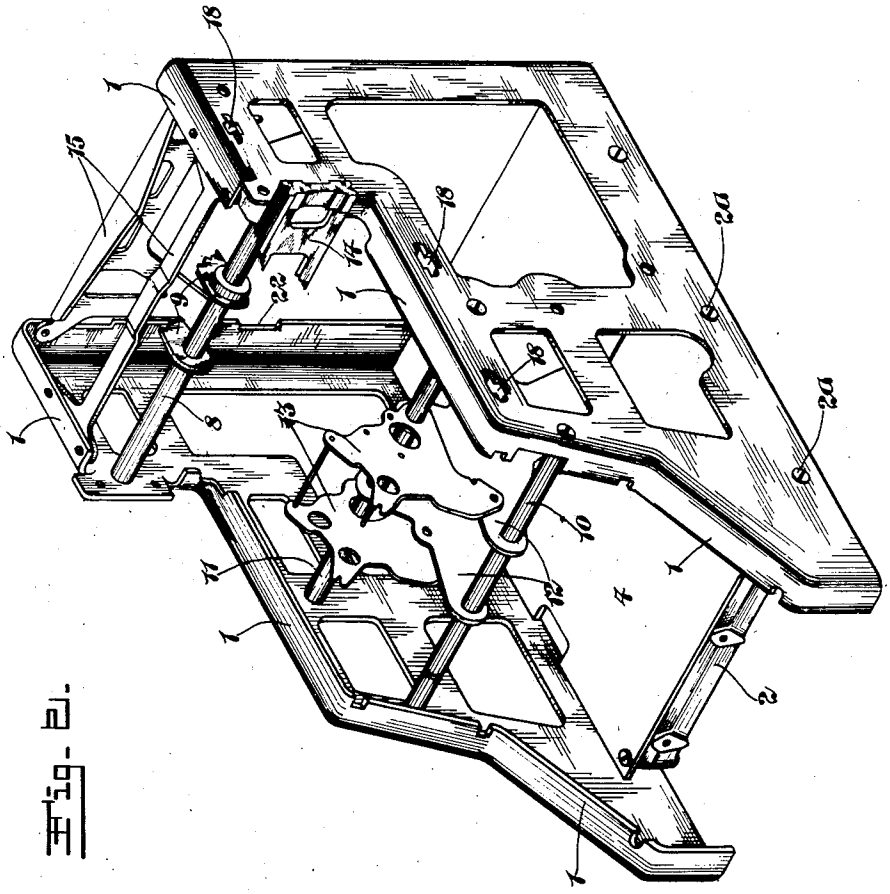


Fig. 2.

INVENTOR.
HARRY LANDSIEDEL,
BY
Rippey & Kingsland,
HIS ATTORNEYS.

June 17, 1924. 1,497,918

H. LANDSIEDEL

ADDING MACHINE

Filed Jan. 10, 1921 4 Sheets-Sheet 3

Fig. 3.

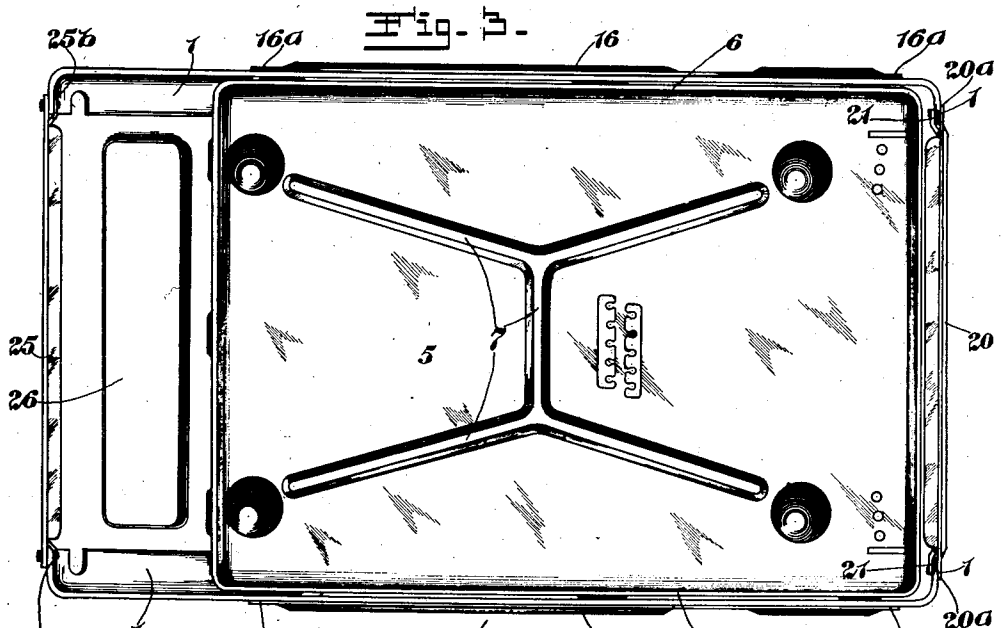
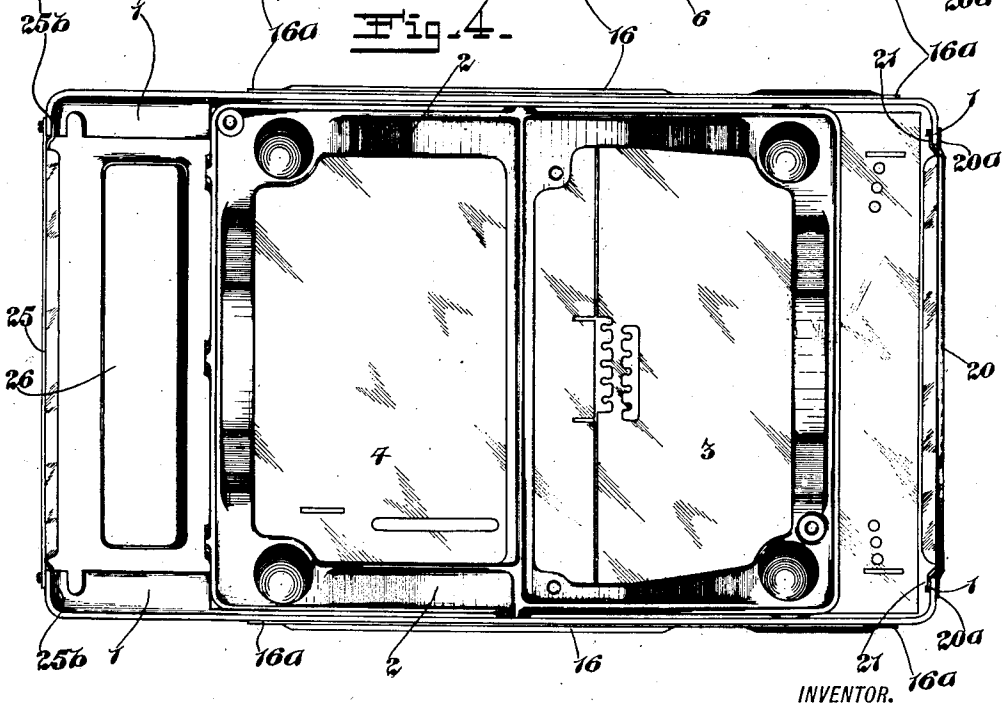


Fig. 4.



INVENTOR.

HARRY LANDSIEDEL,

BY

Pippey & Knipland,

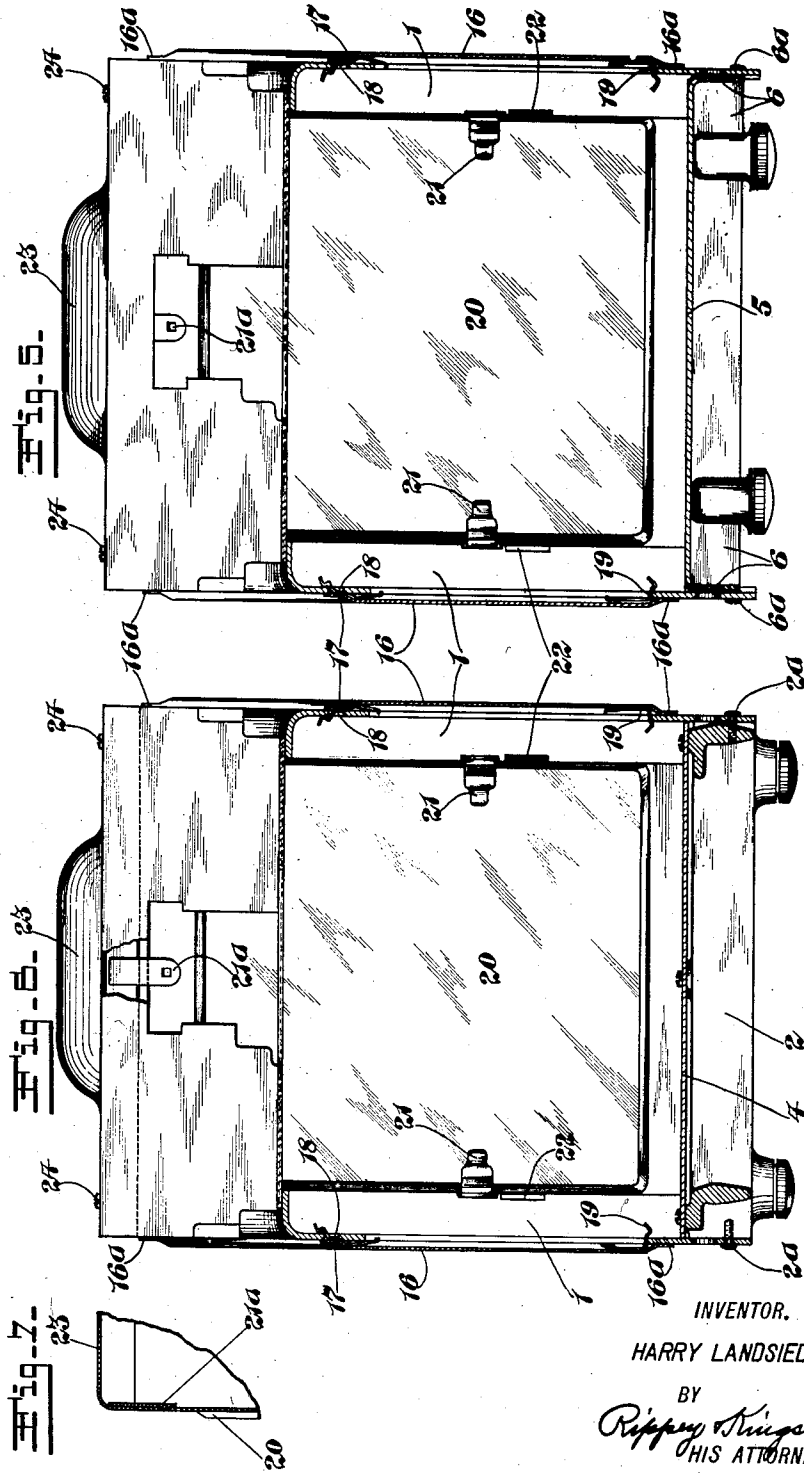
HIS ATTORNEYS.

June 17, 1924. 1,497,918

H. LANDSIEDEL

ADDING MACHINE

Filed Jan. 10, 1921 4 Sheets-Sheet 4



INVENTOR.
HARRY LANDSIEDEL,
BY
Rippey & Kingsland,
HIS ATTORNEYS.

Patented June 17, 1924. 1,497,918

UNITED STATES PATENT OFFICE.

HARRY LANDSIEDEL, OF NORWOOD, OHIO, ASSIGNOR TO THE DALTON ADDING MACHINE COMPANY, OF CINCINNATI, OHIO, A CORPORATION OF OHIO.

ADDING MACHINE.

Application filed January 10, 1921. Serial No. 436,107.

To all whom it may concern:

Be it known that I, HARRY LANDSIEDEL, a citizen of the United States, residing at Norwood, Hamilton County, and State of Ohio, have invented a new and useful Adding Machine, of which the following is a specification.

This invention relates to adding machines, and has special reference to the framing and casing for supporting and enclosing the adding machine mechanism.

It has been the usual practice to provide cast side frames for supporting the operating mechanism, and, after machining them, to secure the cast side frames to a base casting. A separate casing or cover has been provided to enclose the machine mechanism and the framing supporting such mechanism. This is an expensive construction, since the frame castings, the base castings and other frame parts must be built into the machine proper, and they serve no other purpose than to support the various machine units.

The present invention entirely overcomes and eliminates many of the existing objections; provides a construction wholly dispensing with the necessity of a separate cover or case for the machine; largely reduces the cost of construction; and avoids many dangers of errors and inaccuracies in assembling the machine.

An object of the present invention is to provide a construction comprising pressed metal frames, instead of cast frames, for supporting the various operative mechanisms of an adding machine, and to arrange the pressed metal frames so that they will themselves serve as a portion of the case or cover of the machine, and as supports for case panels which complete the case. By this construction and arrangement the case itself serves as a supporting frame for the operative mechanism.

Another object of the invention is to provide an adding machine with side frames and a base composed of thin sheet steel so as to enable the various holes to be punched instead of being drilled as is required when cast iron frames are used.

A further object is to arrange the side frames which are of pressed metal, so that every important unit of the internal mechanism of the machine secured its location with reference to said frames, thus obtaining greater accuracy in bringing together the various units of the machine in their cooperative relationship. An advantage of this construction resides in the fact that since all of the important holes, in which the different parts are supported, are formed in the side frames themselves, there is no opportunity for an accumulated and increasing error in assembling the machine. It is well known that this is not true when several frame members are employed for supporting the machine mechanisms.

An additional object is to provide an adding machine with a base unit construction to which the side frames are fastened by screws or dowels entering from the sides in order to eliminate the necessity of forming feet or pedestals on the frames for the purpose of fastening them to the base by screws entering from the top or from the bottom, as in the case of the use of cast frames.

Another object of the invention is to provide case panels for closing the openings in the side frames to form a complete cover in which the adding machine mechanism is enclosed.

Another object of the invention is to provide a novel construction for obtaining the desired rigidity in the frame and case structure, whether a part of the structure be in the form of a casting or not. In this connection it may be mentioned that a part of the base may be in the form of a skeletonized casting or other form of casting, if desired. In case a skeletonized base casting is used, I prefer to reinforce such casting with flat steel plates which serve to support portions of the operating mechanism of the machine, but it will be apparent that this construction may also be varied if desired.

There are other objects and advantages to be derived from my invention, all of which will be apparent from the following description in which reference is made to the drawings, wherein—

Fig. 1 is a perspective view of a Dalton adding machine embodying my present construction.

Fig. 2 is a perspective view of the framing of the machine showing the two pressed steel side frames, and some of the tie shafts for supporting the operative mechanism.

Fig. 3 is an inverted or bottom plan view

of the base of the machine showing the formation of the base when constructed of pressed steel.

Fig. 4 is an inverted or bottom plan view of the base of the machine when a casting is employed as a frame work for attachment of the pressed steel side frames.

Fig. 5 is a cross sectional view on the line A—A of Fig. 1, showing devices for retaining the case panels in connection with the pressed metal side frames, which support the machine mechanisms, and which also form parts of the enclosing case or cover. In this view of the drawing a pressed steel base is employed.

Fig. 6 is a similar sectional view and may be considered as taken on the same sectional line showing a base casting for connection with the pressed steel side frames.

Fig. 7 is a sectional view showing a latch connection between different parts of the case.

As best shown in Fig. 2, the two side frames are composed of pressed metal and for this purpose I have found pressed steel appropriate. The side frames are stamped and punched into proper skeleton form, to provide openings which are finally closed by the removable panels and to provide holes for the reception of the necessary tie-rods and shafts and other binding connections embodied in the machine. As specifically shown the invention is designed and formed for use in a Dalton adding machine, though it is apparent that the invention may be employed with equal advantages in various other types of adding machines and registers. The frames are formed so as to provide portions that will serve as parts of the case or cover, whereby a complete case or cover is formed when the removable panels are secured to said frames.

Proper rigidity may be given to the frames by bending or pressing the edges to form inwardly extended flanges 1. The flanges 1 are preferably formed along the side edges and upper edges of the frames and, if desired, may be provided along the lower edge, though in many cases such flanges will not be needed along the lower edges of the frames. As shown in Figs. 2, 4 and 6, a base casting 2 may be used. When such a casting is used it is given the usual machining operations on the various bosses so that the side frames and the base plates can be accurately fastened thereto by screws 2^a passing through the side frames and into bosses on the base casting, as will be readily understood by reference to Fig. 6. As shown (Fig. 4) there are two pressed steel base plates secured to the base casting 2, the base plate 3 being at the rear end of the base and the base plate 4 being at the forward end. The side frames when secured to the base in this manner do not require flanges along their lower edges, either for the purpose of obtaining rigidity or for the purpose of connection with the base.

This construction may be varied if desired, and the cast base frame 2 may be omitted. In Figs. 3 and 5, a construction is shown in which the pressed steel plate base 5 is provided with a depending flange 6 around its edge for purpose of attachment to the lower edges of the side frame by means of screws 6^a. This provides the necessary rigidity around the edges of the pressed steel base, and the necessary rigidity of the intermediate portion of the base may be obtained by pressing the base to form reinforcing ribs 7.

As clearly shown in Fig. 2, the side frames support and are tied together by various rods and shafts which support the operative mechanisms of the machine and which heretofore have been supported by the cast frames forming no part of the case or cover in which the machine is enclosed. For instance, the rod or shaft 8 is supported by the side frames forming a part of the case of the machine, near the top thereof. The shaft 8 may be identified as the usual shaft which supports a part of the printing mechanism (the type-carriers and racks) in a Dalton adding machine, fragments of which are shown at 9 (Fig. 2). Toward the forward end of the machine from the shaft 8 the usual shaft 10 is secured to and supported by the side frames, and another usual shaft 11 is similarly supported by the side frames in proper position relatively to the shaft 10. The shafts 10 and 11 support the plates 12 of the adding mechanism, while the shafts 11 supports parts 13 of the printing mechanism.

The paper carriage rail 14 is rigidly attached to the side frames so as to support the paper carriage (Fig. 1) in the usual manner. If desired, the side frames may be additionally bound together by tie plates 15 attached to the flanges 1 of the side frames.

As clearly shown in Fig. 1, each of the side frames supports a side panel 16 fitting over and closing the openings in the frames. The panels 16 may be pressed to any desired shape to provide flat borders or edges 16^a which press closely against the outer surfaces of the side frames to complete the sides of the case. The side panels 16 support spring clips or fingers 17 arranged to engage in holes 18 in the side frames to retain the side panels in close engagement with the side frames. In the construction shown the clips or fingers 17 are along the upper edges of the side panels, while the lower edges of the side panels are supported and held in contact with the side frames by spring clips or fingers 19. The spring clips or fingers 19 extend across and bear upon

the lower portions of the side frames so as to support the side panels and prevent them from slipping from their proper positions on the side frames, and are also arranged so that they will latch the side panels in connection with the side frames. The latching effect is obtained by bending the spring clips or fingers 19 in the manner shown in Figs. 5 and 6. This construction permits the side panels to be easily applied; and also permits detachment of the side panels when it is desired to remove them for any purpose, as for obtaining access to the mechanism of the machine. In this connection it may be mentioned that the openings in the side frames are desirable in order to afford access to the mechanism of the machine so that the machine may be kept in repair and may be cleaned or oiled from time to time, and given the needed attention for other purposes.

The rear panel 20 closes the space between the side frames and between the top and base of the machine at the rear end. The panel 20 is also composed of pressed metal and is formed with flat borders or edges 20^a which press closely against the outer surfaces of the rear flanges 1 to complete the rear end of the case. The panel 20 is held in connection with the side frames by releasable spring clips 21. The spring clips 21 are attached to the panel 20, and when the panel 20 is applied the ends of the spring clips are passed through notches 22 in the flanges 1 at the rear of the side frames and then the panel is raised so as to move the spring clips above the notches 22 and into binding engagement with the flanges 1. The binding pressure of the spring clips 21 against the flanges 1 of the side frames may be sufficient to support the rear panel; but, if desired, the rear panel may be additionally supported, as by a latch 21^a effecting latching engagement with another part of the case.

The upper panel 23 rests upon the flanges 1 at the top of the side frames and is retained in place by screws 24. As shown the latch 21^a has releasable latching engagement with the panel 23.

The front panel 25 in a Dalton adding machine is of angular formation, as clearly shown in Fig. 1, so as to conform to the requirements of the key-board. An opening 26 is provided in the front panel for the accommodation of the ends of the key levers (Fig. 1) which support the finger buttons or keys in a conveniently arranged key-board above said opening. The front panel is held by screws 25^a and spring clips 25^b.

The top panel 27 meets the upper edge of the panel 25 and extends rearwardly a sufficient distance under the paper carriage. The upper panel is secured to the side frames by screws 27^a and supports the cover 28 forming a housing for a part of the printing mechanism of the machine, and also supports the mechanism 29 for operating the ribbon 30.

From the foregoing it is apparent that my present invention completely accomplishes all of its intended purposes. It dispenses with the necessity of using cast metal supporting frames for the operating mechanism of the machine, and also provides a much more convenient manner for obtaining accuracy in the assembling of the machines. It wholly avoids danger of accumulated error in the assembling of the machines, as sometimes occurs when numerous supporting frames are employed, as has been the case heretofore. An ornamental case is provided through which access may be easily obtained to the operating mechanism of the machines for any purpose.

As a result of these advantages it is apparent that the invention saves or avoids considerable expense in the construction of adding machines and the like. Numerous parts heretofore employed are dispensed with; errors resulting from the use of many of the parts which are dispensed with are wholly avoided; more convenient access to the interior of the machine is afforded; and numerous other advantages are apparent.

I do not restrict myself to the specific construction shown and described, since it may be widely varied without departure from the principle thereof. What I claim and desire to secure by Letters Patent, is:—

1. In an adding machine containing operating mechanism, the combination with pressed metal side frames supporting the operating mechanism and having portions thereof exposed and forming exposed parts of an enclosing case and having openings therethrough to afford access to the operating mechanism of the machine, of case panels secured to said frames and closing said openings and together with the exposed portions of said side frames forming a case enclosing the operating mechanism of the machine.

2. In an adding machine containing operating mechanism, a case for enclosing the operating mechanism comprising pressed metal side frames supporting the operating mechanism and having openings therethrough to afford access to the operating mechanism of the machine, and case panels removably connected to said frames closing said openings leaving portions of the frames exposed as continuous parts of a case and together with the exposed portions of the frames forming a complete case enclosing the operating mechanism.

3. In an adding machine containing operating mechanism, the combination with pressed metal side frames supporting the operating mechanism and having portions thereof exposed and forming exposed parts of an enclosing case and having openings

therethrough to afford access to the operating mechanism of the machine, of case panels secured to said frames and closing said openings and together with the exposed portions of said side frames forming a case enclosing the operating mechanism of the machine, a base rigidly secured to the side frames between the lower portions thereof, and elements independent of the operating mechanism rigidly connecting the upper portions of said frames and enclosed within the case formed as aforesaid.

4. In an adding machine containing operating mechanism, a case for enclosing the operating mechanism comprising pressed metal side frames provided with inwardly extended portions forming exposed portions of the case, said side frames having openings therethrough to afford access to the operating mechanism, case panels connected to said frames and closing said openings and being removable to afford access to the operating mechanism of the machine, and other case panels removably connected to said inwardly extended portions of the side frames and together with the first-named panels and the exposed portions of the side frames forming a complete case enclosing the operating mechanism.

5. In an adding machine containing operating mechanism, a case for enclosing the operating mechanism comprising pressed metal side frames provided with inwardly extended portions forming exposed portions of the case, said side frames having openings therethrough to afford access to the operating mechanism, case panels connected to said frames and closing said openings and being removable to afford access to the operating mechanism of the machine, other case panels removably connected to said inwardly extended portions of the side frames and together with the first-named panels and the exposed portions of the side frames forming a complete case enclosing the operating mechanism, a base rigidly secured between the lower portions of the side frames, and connections between the upper portions of the side frames enclosed within the case formed as aforesaid.

HARRY LANDSIEDEL.