

**June 16, 1936.**

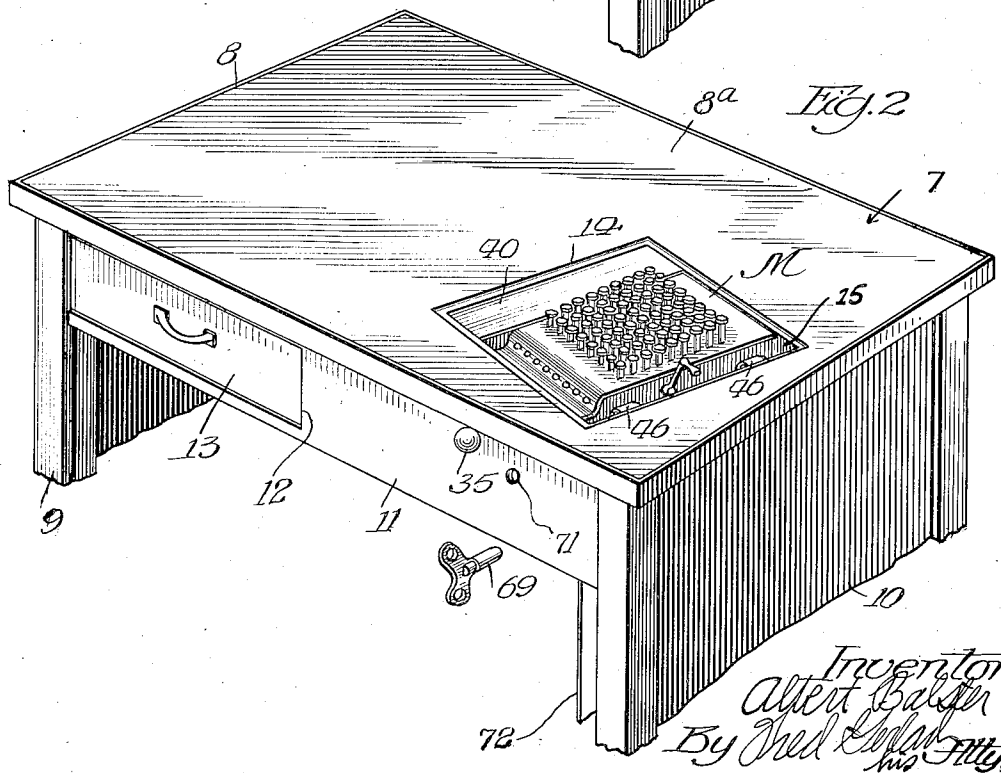
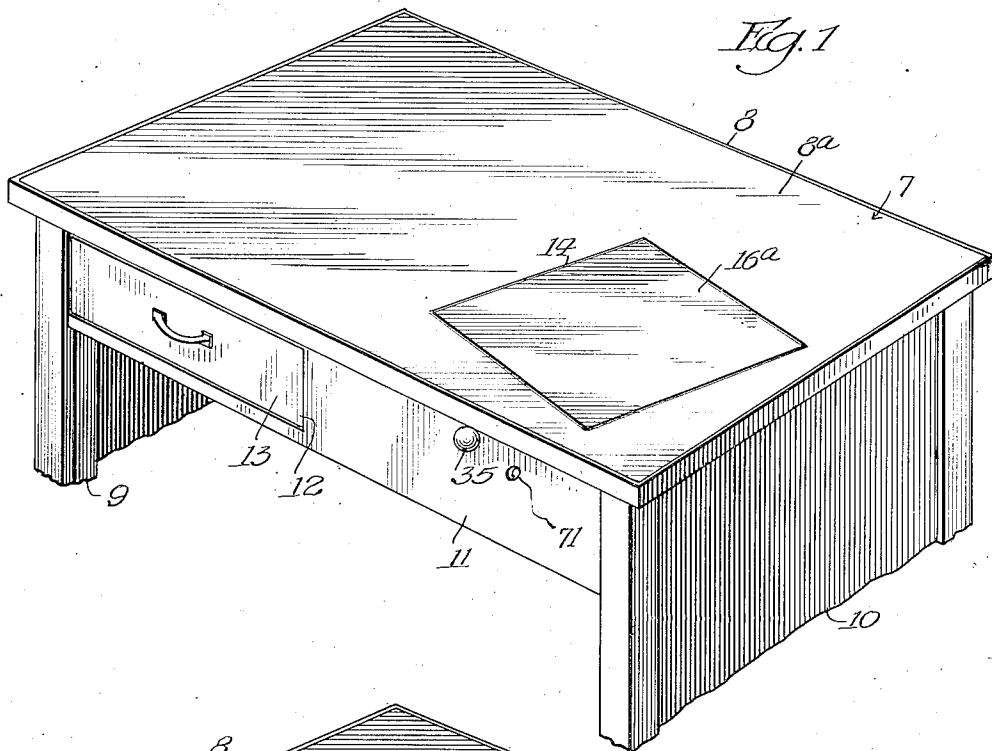
A. BALSTER

**2,044,559**

## TABLE MOUNTING FOR CALCULATING MACHINES

Filed Aug. 10, 1934

2 Sheets-Sheet 1



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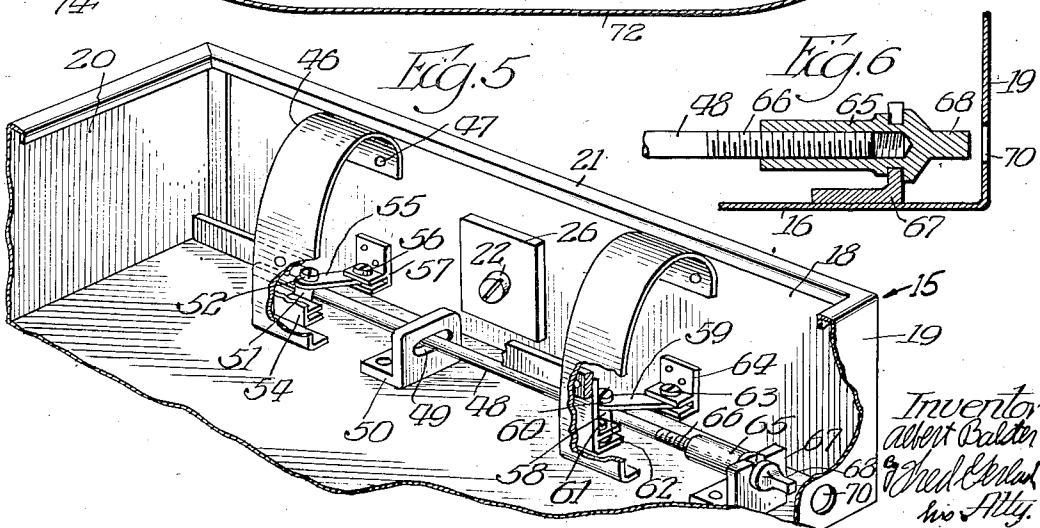
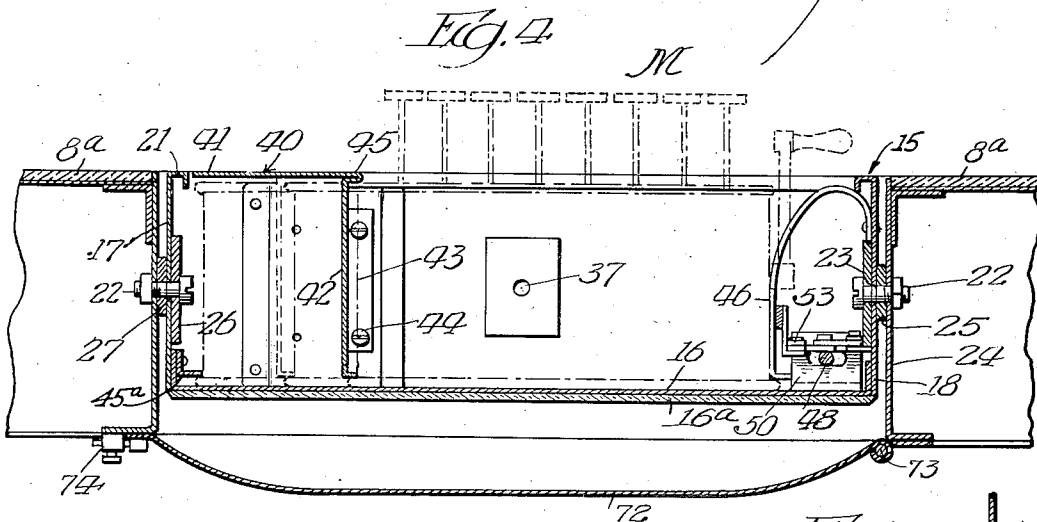
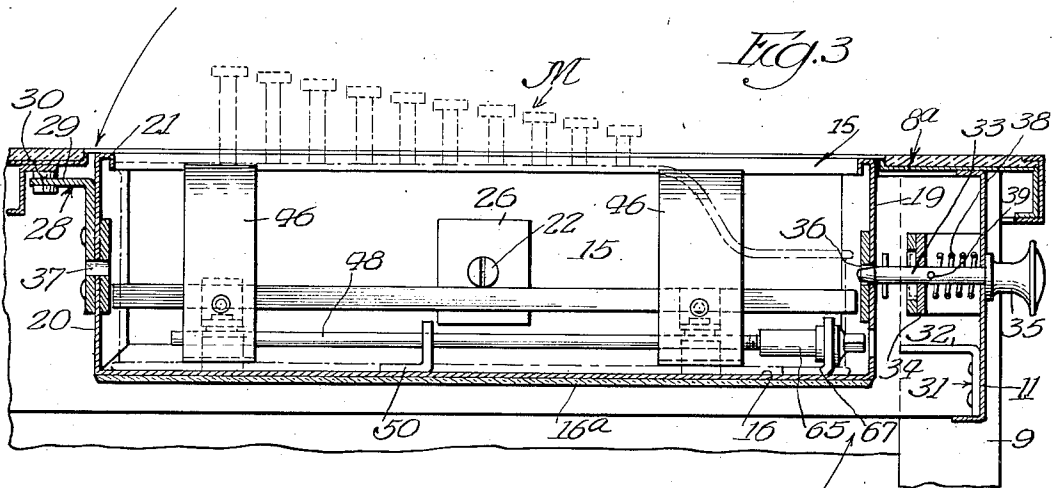
A. BALSTER

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TABLE MOUNTING FOR CALCULATING MACHINES

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2 Sheets-Sheet 2



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## UNITED STATES PATENT OFFICE

2,044,559

TABLE MOUNTING FOR CALCULATING  
MACHINES

Albert Balster, Chicago, Ill.

Application August 10, 1934, Serial No. 739,207

7 Claims. (Cl. 312—30)

The present invention has reference to table mountings for calculating machines.

One object of the invention is to provide a mounting for this purpose which is designed for use in connection with a table or like piece of office equipment having a rectangular opening in the top thereof and comprises an open top, machine-retaining container which is located under the opening in the table top and is pivotally supported so that it may be swung from a normal position wherein the keys of the machine are accessible from the top of the table into an inverted position wherein the machine is disposed beneath the table top and the container bottom is flush with the top of the table so that the entire table top is available for working purposes.

Another object of the invention is to provide a mounting of the last mentioned character in which the open top container for the machine embodies novel means for releasably securing or locking the machine in place in the container.

Another object of the invention is to provide a mounting of the type and character under consideration in which the means for releasably securing or locking the machine in place in the container is controlled from the front of the table with which the mounting is associated.

A further object of the invention is to provide a mounting for a calculating machine or like device in which the container is provided with novel means whereby it may be used in connection with machines of different sizes.

A still further object of the invention is to provide a mounting for a calculating machine which is generally of new and improved construction; consists of a small number of parts, and may be manufactured at a low and reasonable cost.

Other objects of the invention and the various advantages and characteristics of the mounting will be apparent from a consideration of the following detailed description.

The invention consists in the several novel features which are hereinafter set forth and are more particularly defined by claims at the conclusion thereof.

In the drawings which accompany and form a part of this specification or disclosure and in which like numerals of reference denote corresponding parts throughout the several views:

Figure 1 is a perspective of an office table having associated therewith a calculating machine mounting embodying the invention, the container of the mounting being shown in its inverted

position, that is with the bottom flush with the opening in the table top and completing the top surface of the table so that the latter is available for working purposes;

Figure 2 is a similar perspective showing the container of the mounting in its normal position with the calculating machine exposed so that the keys are available for manipulation;

Figure 3 is a vertical transverse section of the mounting illustrating in detail the construction and arrangement of the container and the other operating parts;

Figure 4 is a vertical longitudinal section of the mounting showing in detail the means for releasably securing or locking the machine in place;

Figure 5 is a fragmentary perspective of the container of the mounting and the machine locking means; and

Figure 6 is a detail sectional view of part of the machine locking means.

The mounting which forms the subject of the invention is for a calculating machine M and is adapted for use in connection with a table 7. The table which is shown in the drawings is one of conventional design and consists of a rectangular top 8, legs 9, a pair of end walls 10, a front 11, and a back (not shown). The top is shown in the drawings as being formed of sheet metal and has a top facing 8<sup>a</sup> of linoleum, or like material. This facing is flat and is suitably secured at the margins thereof to the side and bottom edges of the sheet metal member which forms the top 8 of the table. The legs 9 are four in number and are located at the corners of the table top and serve to support the top so that it is properly spaced from the floor of the room in which the table is disposed. The end walls 10 are disposed at and depend from the ends of the top 8 and extend between the legs 9 at the front corners and the legs at the back corners. The front 11 is provided at one side thereof with a rectangular opening 12 for a drawer 13 and extends lengthwise of the table and between the two front legs 9. The table top 8 is adapted to be used as a work space and has a rectangular opening 14 in the end or corner which is opposite to that with the drawer 13. This opening 14 extends completely through the table top 8 and extends angularly with respect to the front margin of the table top 8, as shown in Figures 1 and 2.

The mounting comprises a rectangular container 15 which forms an open top compartment for the calculating machine M and corresponds in

shape to and fits in the rectangular opening 14 in the table top 8. This container 15 is preferably formed of sheet metal and consists of a bottom 16, a pair of sides 17 and 18, a front 19, and a back 20, all of which are suitably secured together and form the open top compartment for the calculating machine M. The container is normally positioned so that the top margins of the sides, front, and back, are substantially flush with the top facing 8<sup>a</sup> of the table 7 and is pivotally supported as hereinafter described so that it may be swung into an inverted position wherein the calculating machine M is disposed beneath the table top and the bottom 16 is flush with the top of the table and completes the top facing thereof so that the entire top of the top 8 of the table is available for use. The top margins of the sides, front and back of the container are bent inwardly and downwardly to form a continuous flange 21 around the top of the container. This flange serves to reinforce the sides, front and back of the container and to eliminate sharp edges at the top of the container.

The depth of the container is preferably equal to that of the machine so that when the body of the machine is in place in the container the keys thereof project above the top facing 8<sup>a</sup> of the table top 8. The bottom 16 of the container is provided on the underface thereof with a pad 16<sup>a</sup> of linoleum or like material. This pad is coextensive with the top and serves when the container is in its inverted position, that is, with the bottom 16 flush with the top of the table, to close the opening 14 and fill out the top facing 8<sup>a</sup>.

The pivotal support whereby the container 15 may be swung from a normal position to a closed position consists of a pair of bolts 22. These bolts extend through holes 23 in the central portions of the sides of the container and are carried by a pair of sheet metal strips 24. The latter, as shown in Figure 4, are connected to and depend from the portions of the table top 8 which define the sides of the opening 14. Washers 25 are mounted on the shanks of the bolts and fit between the sides of the container and the side strips 24 so as to space the container from the side strips and permit the container to swing freely about the bolts. Metal plates 26 are welded or otherwise secured to the inner faces of the sides 17 and 18 of the container and have central holes 27 in registry with the holes 23. The bolts extend through the holes 27 in the plates 26 and the latter operate to increase the bearing surfaces for the bolts as far as the container is concerned. Rotation of the container is limited by means of an L-shaped plate 28. This plate is riveted or otherwise secured to the outer face of the back 20 of the container and embodies an outwardly extending leg 29 having resilient bumpers 30 on opposite faces thereof. When the container is in its normal or open position, that is when the calculating machine M is in an upright position for use, the leg 29 of the plate 28 underlies the portion of the table top which defines the rear of the opening 14 and the bumper on the top face thereof engages the underside of the table top and prevents clockwise rotation of the container as viewed in Figure 3. When the container is rotated in the proper direction so as to bring it into its closed position, the bumper 30 on the other side face of the leg 29 engages a bracket 31 on the inner face of the front 11 of the table and prevents further rotation of the container in a counterclockwise direction as viewed in Figure 3. The bracket 31 is riveted or welded to the inner face of the table front 11, and em-

bodies a horizontally extending arm or leg 32 which coacts with the aforesaid bumper on the leg 29 of the plate 28 to restrict rotation of the container.

The container is adapted to be locked in either of its two positions by means of a plunger 33. This plunger extends horizontally and is slidably mounted in the central portion of a U-shaped bracket 34, on the inner face of the front 11 of the table. The outer end of the plunger extends through a hole in the table front 11 and is provided with a finger piece 35, whereby the plunger may be manipulated from the front of the table. The other or inner end of the plunger is pointed as shown in Figure 3 of the drawings and is adapted to fit in a hole 36 in the front of the container when the container is in its normal position and in a hole 37 in the back of the container when the container is swung into its inverted or inoperative position. A compression spring 38 surrounds the central portion of the plunger and extends between the front of the table and a pin 39 on the plunger. This spring serves to hold the plunger so that it locks the container in place. When the container is in its normal or open position, as shown in Figure 3, the spring 38 holds the inner end of the plunger in the hole 36 and the plunger thus operates to lock the container against rotation. When it is desired to rotate or swing the container into its inoperative or closed position the plunger is withdrawn from the hole 36 by gripping and pulling on the finger piece 35. As soon as the inner end of the plunger is dislodged from the hole 36, the container is free so that it may be swung out of its normal position. When the container is in its inoperative or closed position the inner end of the plunger is adapted to fit within the hole 37 in the back of the container as hereinbefore pointed out so as to lock the container in place. The plunger 33 together with the spring 38 and the holes 36 and 37 constitutes simple means for locking the container in place.

The calculating machine M fits in the container between the front 19 and the back 20 and abuts against a filler member 40 which is located adjacent to the side 17 of the container. This filler strip is formed of sheet metal and consists of a horizontally extending top part 41 and a vertically extending side part 42. The top part 41 is flush with the top of the container and corresponds in length to the container. The side part 42 is spaced from the container side 17 by means of the top part 41 and is removably secured to the back 20 of the container through the medium of a bracket 43. The latter is secured in place by screws 44 which extend through suitable holes (not shown) in the container back 20. The filler strip 40 is provided at the juncture of the top and side parts 41 and 42 with an overhanging flange 45 which is coplanar with the top part 41. The portion of the calculating machine M which abuts against the filler strip 40 underlies this flange so that an interlocking connection is formed or provided whereby the calculating machine is held in connected relation with respect to the container. The machine is jammed or clamped against the filler strip 40 by means of a pair of clamping members 46. These members are in the form of spring metal strips which extend substantially vertically with respect to the container and have the upper ends thereof attached to the side 18 of the container by means of rivets 47. The lower ends of the clamping members fit against the adjacent side of the calculating machine. The members are swung to-

wards the container side 17 to jam or clamp the machine against the filler strip 40 by means of a rod 48. This rod is located adjacent to the side 18 of the container and extends lengthwise of the container. The central portion of the rod extends through an elongated horizontally extending slot 49 in a bracket 50 which is riveted or otherwise secured to the bottom 16 of the container. The rear end of the rod is operatively connected to the rearmost clamping member 46 by means of a link 51 which is pivotally connected at one end thereof to a screw 52 on the rod and has its other end pivotally connected to a screw 53 between an L-shaped clip 54 on the lower end of the rearmost clamping member. A link 55 extends between and is pivotally connected at its ends to the screw 53 and a screw 56 between an L-shaped clip 57 on the inner face of the container side 18. The links 51 and 55 are in the nature of toggle links and operate in response to longitudinal shift of the rod 48 to shift the lower end of the clamping member 46 either to or from the container side 17. A pair of links 58 and 59 serve as the shifting medium for the foremost clamping member 46. The link 58 extends between and is pivotally connected at its ends to a screw 60 on the front portion of the rod 48 and a screw 61 between an L-shaped clip 62 on the lower end of the foremost clamping member 46. The link 59 extends between and is pivotally connected to the screw 60 and a screw 63 between an L-shaped clip 64 on the inner face of the container side 18. The links 58 and 59 operate similarly to the links 51 and 55 in that they swing the lower end of the foremost clamping member 46 to and from the container side 17 in response to axial or longitudinal shift of the rod 48. The front end of the rod 48 extends into a sleeve 65 and is connected to the latter by means of a screw thread connection 66. This sleeve is mounted in one leg of an angle bracket 67 so that it is free to rotate but is held against axial displacement. The bracket 67, as shown in Figure 5, is riveted to the bottom 16 of the container. When the sleeve is turned in one direction the rod 48 is shifted so that it operates through the toggle links to shift the clamping members 46 into clamping relation with the calculating machine M. When the sleeve is rotated in the opposite direction the rod is reversely shifted so that it moves the clamping members away from the calculating member and frees the latter for removal from the container 15. The front end of the sleeve embodies a polygonal part 68 for a key 69. A hole 70 is formed in the front 19 of the container in alignment with the polygonal part 68 and this hole is adapted when the container is in its open position to register with the hole 71 in the table front 11 so that the key may be inserted into connected relation with the polygonal part 68 for sleeve turning purposes. When it is desired to release the machine so that it may be removed from the container the key is inserted through the holes 70 and 71 and slid into connected relation with the polygonal part 68 at the front end of the sleeve 65. The key is then rotated in the proper direction so as to shift the rod 48 to swing inwardly the clamping members 46. When it is desired to place in the container a wider machine than that shown in the drawings the clamping members 46 are shifted into their machine releasing position and the filler strip 40 is removed. Thereafter the larger machine is placed on the bottom 16 of the container and

slid sideways against the sides 17 and the clamping members 46 are actuated by shift of the rod 48 so as to exert sideways clamping pressure against the machine.

In order to assist the clamping members 46 in holding the larger machine in the container, an angle bar 45<sup>a</sup> is provided. This bar is riveted or otherwise secured to the inner face of the side 17 of the container and extends between the front 19 and the back 20. This bar is so arranged that one leg thereof extends horizontally and is spaced from the container bottom to such an extent that it interlocks or interfits with one of the bottom side flanges of the large machine as shown in Figure 4 of the drawings.

In order to prevent damage to, and the collection of dust on, the keys of the calculating machine M when the machine is in its inverted position, that is, when the container 15 is in its inverted position and the bottom 16 is flush with the top 8 of the table, a pan 72 is provided. This pan is located beneath the container and is connected at one side thereof by a hinge 73 to one of the sheet metal strips 24 so that it may be swung downwardly in order to permit cleaning thereof and also to permit the container to be swung into and out of its normal position. The other side of the pan 72 is provided with a latch 74 whereby it may be secured in place under the container. The latch 74 coacts with a latch member on the other strip 24. When it is desired to swing the container from its normal position to its inverted position the latch 74 is released and the pan 72 is swung downwardly. If the container is locked in its inverted position the pan is swung upwardly into its normal position and the latch 74 is manipulated to secure the pan in place.

The operation of the mounting is as follows: To install the calculating machine M in the pivotally supported container 15 the key 69 is inserted through the holes 71 and 70 into locked relation with the polygonal part 68 on the front end of the sleeve 65. The key is then turned so as to swing the clamping members 46 toward the side 18 of the container. The calculating machine M is then placed in the container and is moved sideways against the vertical part 42 of the filler member 40. After so locating the machine, the key 69 is turned in the reverse direction so as to swing the clamping members 46 toward the side 17 of the container and into clamped relation with the adjacent side of the calculating machine. When the container is in its normal position the keys of the calculating machine project above the top of the table and may be manipulated for calculating purposes. When it is desired to swing the machine into an inverted position so as to render the entire top of the table available for working purposes the plunger 33 is pulled out by manipulation of the finger piece 35 and the pan 72 is swung downwardly after release of the latch 74. The container is then swung downwardly and rearwardly as indicated by arrows in Figure 3 until the bottom 16 is flush with the table top and rotation of the container is stopped as the result of the action of bumper equipped, L-shaped plate 28. When the container reaches its inverted position the plunger is released so that the spring 38 shifts it inwardly and the inner end lodges in the hole 37. This effects a locking of the container. Thereafter the pan 72 is swung upwardly and latched in place.

The herein described mounting may be man-

ufactured at a low and reasonable cost in that it consists of but a comparatively small number of parts. It is extremely efficient in operation and makes it possible for the user of the table with which the mounting is associated to utilize the entire top of the table for working purposes when the calculating machine M is not in use.

The opening 14 in the top of the table is preferably spaced from the adjacent end and front edges of the table top so as to provide a working space on the table top to the right of the calculating machine when the machine is in its operative position. By having such space the arm of the operator of the machine is properly supported and efficiency of operation results.

The opening 14 is preferably angled or disposed at approximately an angle of 12° with respect to the front edge of the table so as to facilitate operation of the machine by an operator standing or sitting in front of the table.

Whereas the mounting has been described as designed for use with a calculating machine it is to be understood that it may be used equally as well with any other type of office machine or device.

It is also to be understood that the invention is not to be restricted to the details set forth, since these may be modified within the scope of the appended claims, without departing from the spirit and scope of the invention.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent is:

1. In combination with a table having a rectangular opening extending through and spaced inwardly from the front edge of the top thereof, a calculating machine mounting comprising a rectangular, open top container for the machine disposed under the top of the table and in registry with the opening and consisting of a rectangular machine supporting bottom of the same size as the opening and a pair of sides and a front and back connected together and extending upwardly from the margins of the bottom and of substantially the same height as the body of the machine, means associated with the sides of the container forming a pivotal support whereby the container may be swung from a normal position, wherein the top margins of the sides, front and back thereof are substantially flush with the table top and the keys of the machine project above the table top and are manipulable from above said table, into an inoperative position wherein the machine is inverted and the container bottom is flush with and completes the top of the table, and means for securing the machine in place in the container.

2. In combination with a table having in the front right hand corner of the top thereof a rectangular opening with the front spaced inwardly from, and disposed at an acute angle with respect to, the front edge of the table top, a pair of laterally spaced side members depending from, and coextensive with, the portions of the top which define the sides of the opening, a calculating machine mounting comprising a rectangular, open top container for the machine disposed under the top of the table and in registry with the opening and consisting of a machine supporting bottom of the same size as the opening and a pair of sides and a front and back connected together and extending upwardly from the margins of the bottom and of substantially

the same height as the body of the machine, pivot elements between said side members and the sides of the container for supporting said container so it may be swung from a normal position, wherein the top margins of the sides, front and back thereof are substantially flush with the table top and the keys of the machine project above the table top and are manipulable from above said table, into an inoperative position wherein the machine is inverted and the container bottom is flush with and completes the top of the table, and means for securing the machine in place in the container.

3. In combination with a table having a rectangular opening extending through and spaced inwardly from the front edge of the top thereof, a pair of laterally spaced side members depending from, and coextensive with, the portions of the top which define the sides of the opening, a calculating machine mounting comprising a rectangular, open top container for the machine disposed under the top of the table and in registry with the opening and consisting of a machine supporting bottom of the same size as the opening and a pair of sides and a front and back connected together and extending upwardly from the margins of the bottom and of substantially the same height as the body of the machine, pivot elements between said side members and the sides of the container for supporting said container so it may be swung from a normal position wherein the top margins of the sides, front and back thereof are substantially flush with the table top and the keys of the machine project above the table top and are manipulable from above said table into an inoperative position wherein the machine is inverted and the container bottom is flush with and completes the top of the table, means for securing the machine in place in the container, and a rectangular, downwardly dished, metallic pan of the same size as the container bottom positioned beneath the container in such manner that it serves to protect the keys of the machine when the container is in its inoperative position and having one of the side portions thereof connected by a hinge to one of the side members and its other side portion connected by a hinge to the other side member so that it is adapted upon release of the latch to be swung downwardly in a sideward direction for cleaning purposes.

4. In combination with a table having a rectangular opening extending through the top thereof, a calculating machine mounting comprising an open top container for the machine disposed under the top of the table and in registry with the opening and consisting of a bottom for supporting the machine and a pair of sides and a front and back connected together and extending upwardly from the margins of the bottom, means associated with the container sides forming a pivotal support whereby the container may be swung from a normal position wherein the keys of the machine are manipulable from above the top of the table into an inoperative position wherein the machine is inverted and the container bottom is flush with and completes the top of the table, means for securing the machine in place in the container, and an L-shaped plate having one leg thereof connected to the outer face of the container back and its other leg projecting at right angles and rearwardly with respect to said one leg and arranged so that when the container is swung into its normal position it engages a portion of the table top in back of

the opening and limits additional swinging movement of the container in one direction.

5 5. In combination with a table having a flat top with a rectangular opening in the front portion thereof and also having a front depending from the front portion of the top and embodying on the inner face thereof an L-shaped bracket with one leg thereof projecting inwardly, a calculating machine mounting comprising a rectangular open top container for the machine disposed beneath the top of the table and in registry with the opening and consisting of a bottom for supporting the machine and a pair of sides and a front and back connected together and extending upwardly from the margins of the bottom and of substantially the same height as the body of the machine, means associated with the container sides forming a pivotal support whereby the container may be swung from a normal position, wherein the top margins of the sides, front and back thereof are substantially flush with the table top and the keys of the machine project above the table top and are manipulable from above said table, into an inoperative position, wherein the machine is inverted and the container bottom is flush with and completes the top of the table, means for securing the machine in place in the container and an L-shaped plate having one leg thereof connected to the outer face of the container back and its other leg projecting at right angles and rearwardly with respect to said last mentioned leg and arranged so that when the container is swung into its normal position it engages a portion of the table top in back of the opening and limits additional swinging movement in one direction and when the container is swung into its inoperative position it engages said one leg of the L-shaped plate or bracket on the table front and forms a stop therewith whereby additional swinging movement is precluded.

6. In combination with a table having an opening extending through the top thereof, a calculating machine mounting comprising an open top container for the machine disposed under the top of the table and in registry with the opening and consisting of a bottom for supporting the machine and a pair of sides and a front and back connected together and extending upwardly from the margins of the bottom, means forming a pivotal support whereby the container can be swung from a normal position wherein the keys

of the machine are manipulable from above the top of the table into an inoperative position wherein the machine is inverted and the container bottom is flush with and completes the top of the table, and means for releasably securing the machine in place in the container comprising a member extending along one side of the container and adapted to interlock with one side of the machine when the latter is shifted laterally thereagainst and also comprising a clamping member positioned adjacent to the other side of the container and movable laterally into engagement with the other side of the machine, and an axially movable rod and toggle links between the rod and the clamping member and said other side of the container for moving the clamping member laterally in response to axial movement of the rod.

7. In combination with a table provided with a front and having a rectangular opening extending through the top thereof, a calculating machine mounting comprising an open top container for the machine disposed under the top of the table and in registry with the opening and consisting of a bottom for supporting the machine and a pair of sides and a front and back connected together and extending upwardly from the margins of the bottom, means forming a pivotal support whereby the container can be swung from a normal position wherein the keys of the machine are manipulable from above the top of the table into an inoperative position wherein the machine is inverted and the container bottom is flush with and completes the top of the table and means for releasably securing the machine in place in the container comprising a member disposed in the container along one of the sides thereof and movable laterally into a position wherein it engages the body of the machine and clamps the same in the direction of the other side of the container, and a rod element with a polygonal front end, disposed in and extending longitudinally of the container and adapted when turned to control movement of the member, the front of the container and the front of the table having holes therein adapted when the container is in its normal position to register with one another and permit a key to be inserted from the front of the table into engagement with the polygonal portion on the front end of the rod element for turning purposes.

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