Sept. 23, 1958 H. JAGGER 2,853,001

MACHINE FOR PRINTING POSTAL MONEY ORDERS AND LIKE INSTRUMENTS

Filed Oct. 5, 1955 7 Sheets-Sheet 1

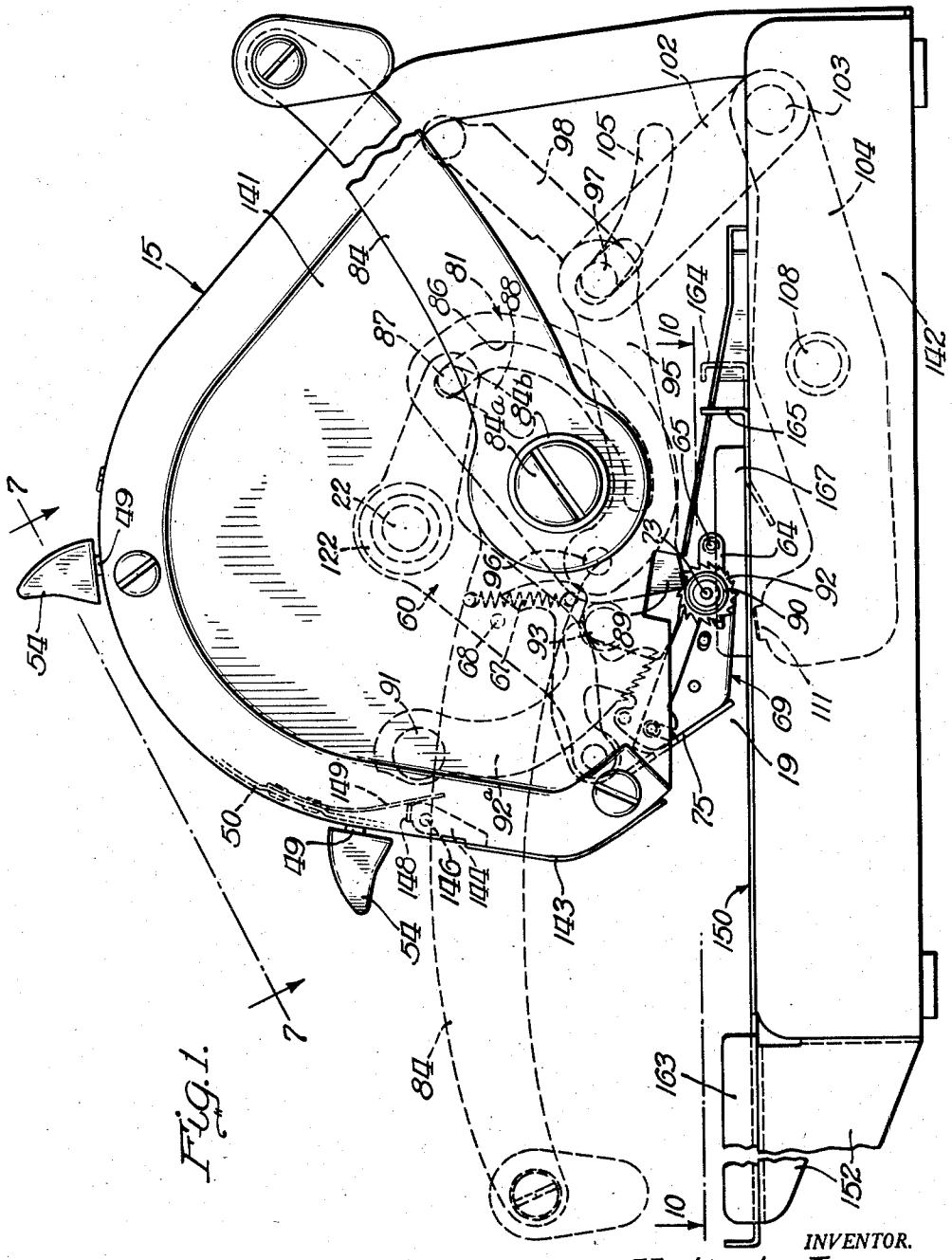


Fig. 1.

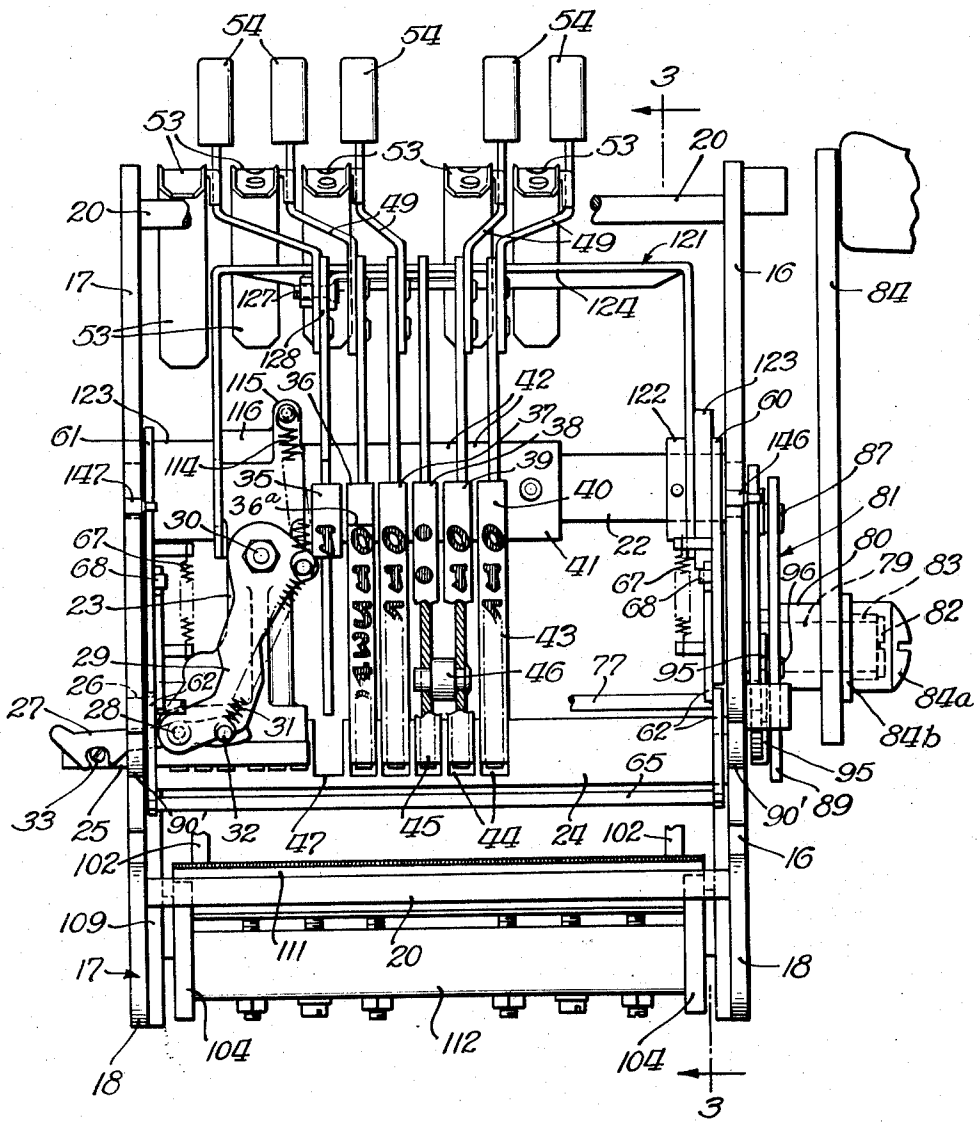
INVENTOR.
Hubert Jagger
BY
Brown, Jackson, Boettcher & Dienner
Attys.

Sept. 23, 1958 H. JAGGER 2,853,001

MACHINE FOR PRINTING POSTAL MONEY ORDERS AND LIKE INSTRUMENTS

Filed Oct. 5, 1955 7 Sheets-Sheet 2

Fig. 2.



INVENTOR.

Hubert Jagger

BY

Brown, Jackson, Boettcher & Dennemer

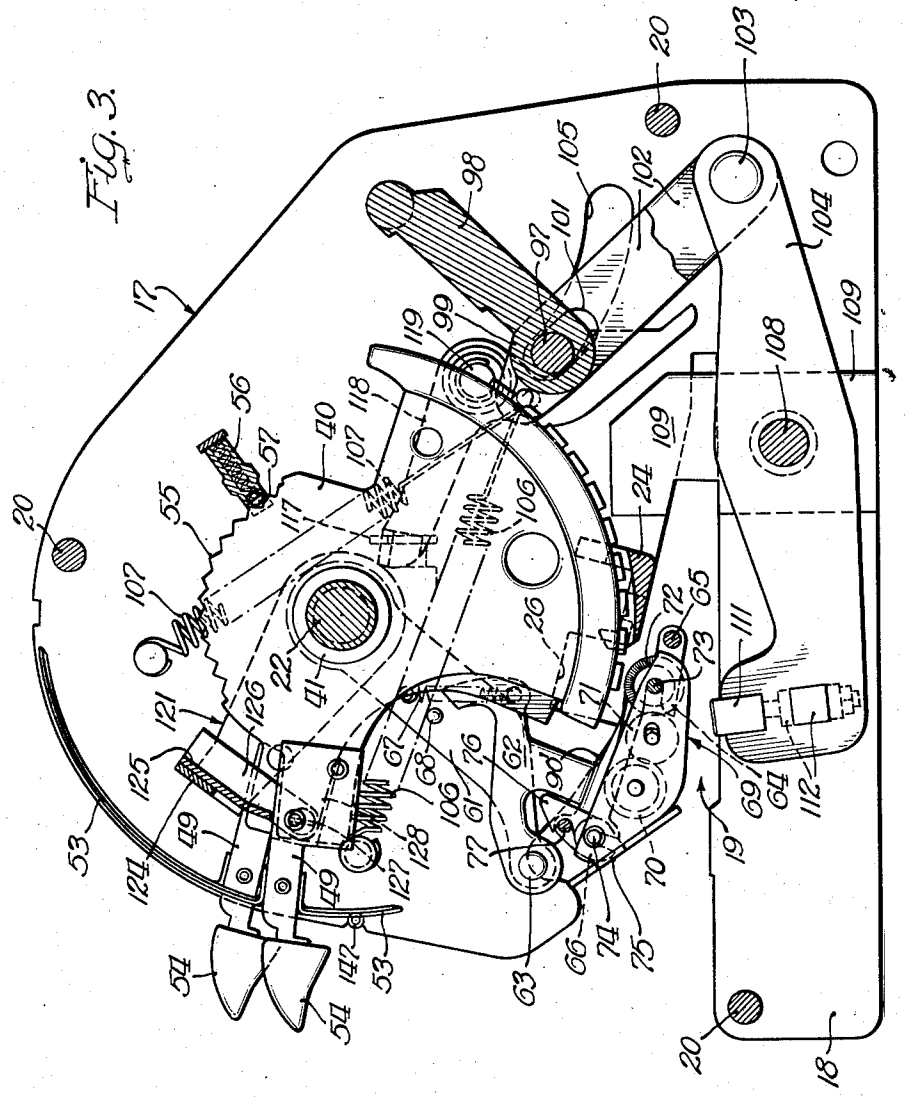
Attys.

Sept. 23, 1958 H. JAGGER 2,853,001

MACHINE FOR PRINTING POSTAL MONEY ORDERS AND LIKE INSTRUMENTS

Filed Oct. 5, 1955 7 Sheets-Sheet 3

Fig. 3.



INVENTOR.
Hubert Jagger
BY
Brown, Jackson, Boettcher & Dienner
Attys.

Sept. 23, 1958 H. JAGGER 2,853,001

MACHINE FOR PRINTING POSTAL MONEY ORDERS AND LIKE INSTRUMENTS

Filed Oct. 5, 1955 7 Sheets-Sheet 4

Fig. 4.

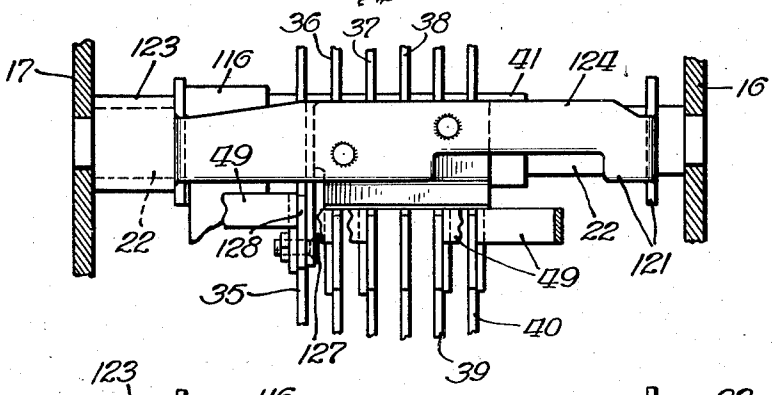


Fig. 5.

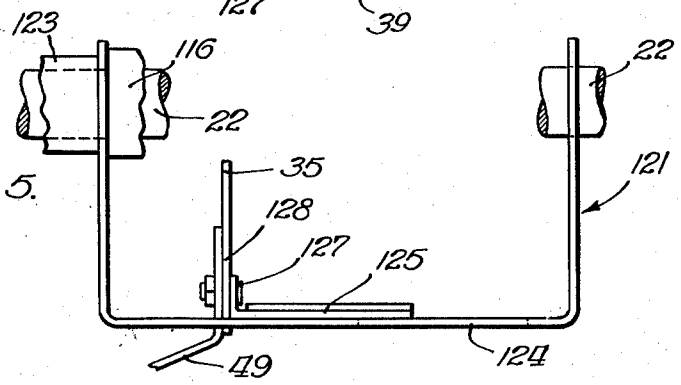
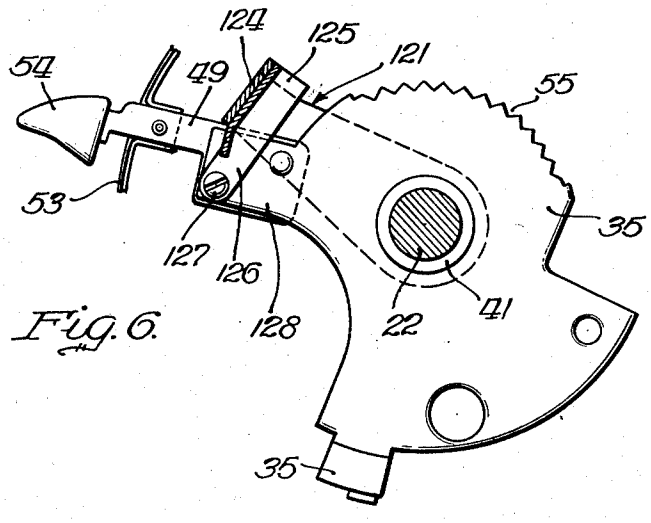


Fig. 6.



INVENTOR.

Hubert Jagger

BY

Brown, Jackson, Boettcher & Dienner

Attys.

Sept. 23, 1958 H. JAGGER 2,853,001

MACHINE FOR PRINTING POSTAL MONEY ORDERS AND LIKE INSTRUMENTS

Filed Oct. 5, 1955 7 Sheets-Sheet 5

Fig. 7.

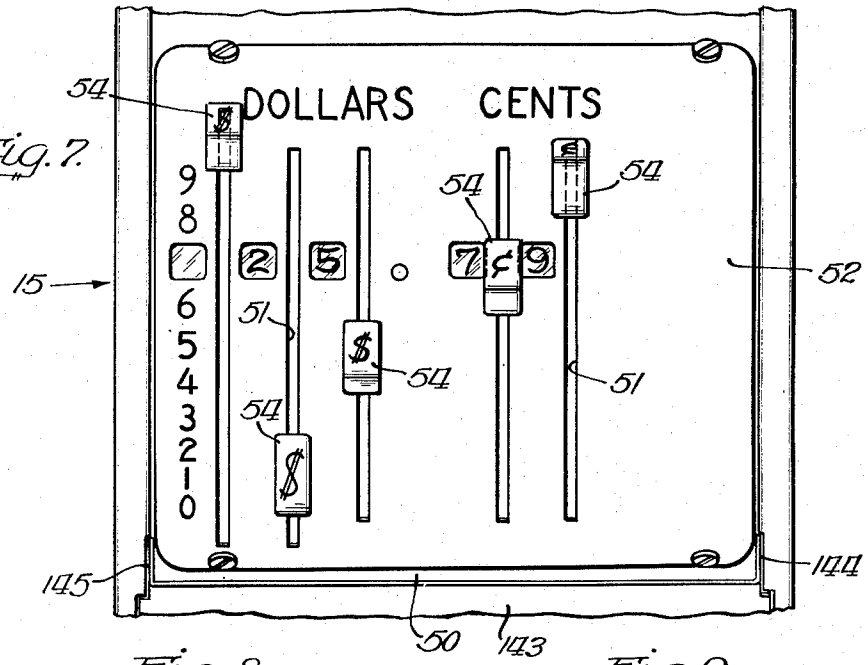


Fig. 8.

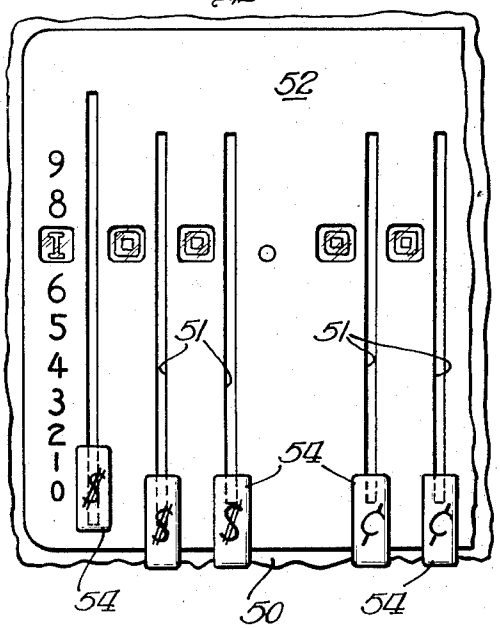
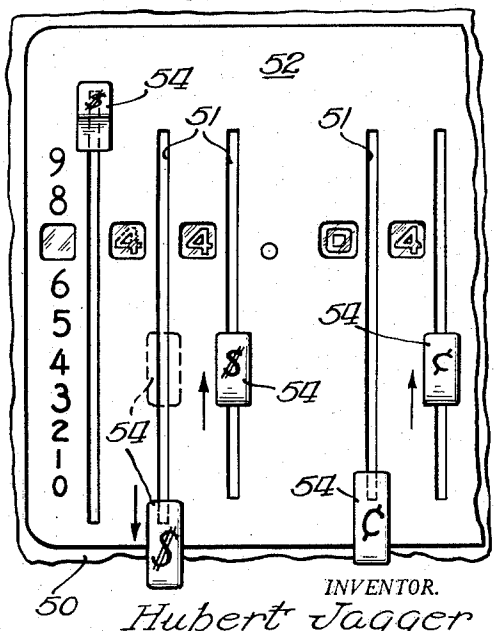


Fig. 9.



INVENTOR.
Hubert Jagger
BY
Brown, Jackson, Boettcher & Dienner
Attys.

Sept. 23, 1958 H. JAGGER 2,853,001

MACHINE FOR PRINTING POSTAL MONEY ORDERS AND LIKE INSTRUMENTS

Filed Oct. 5, 1955 7 Sheets-Sheet 6

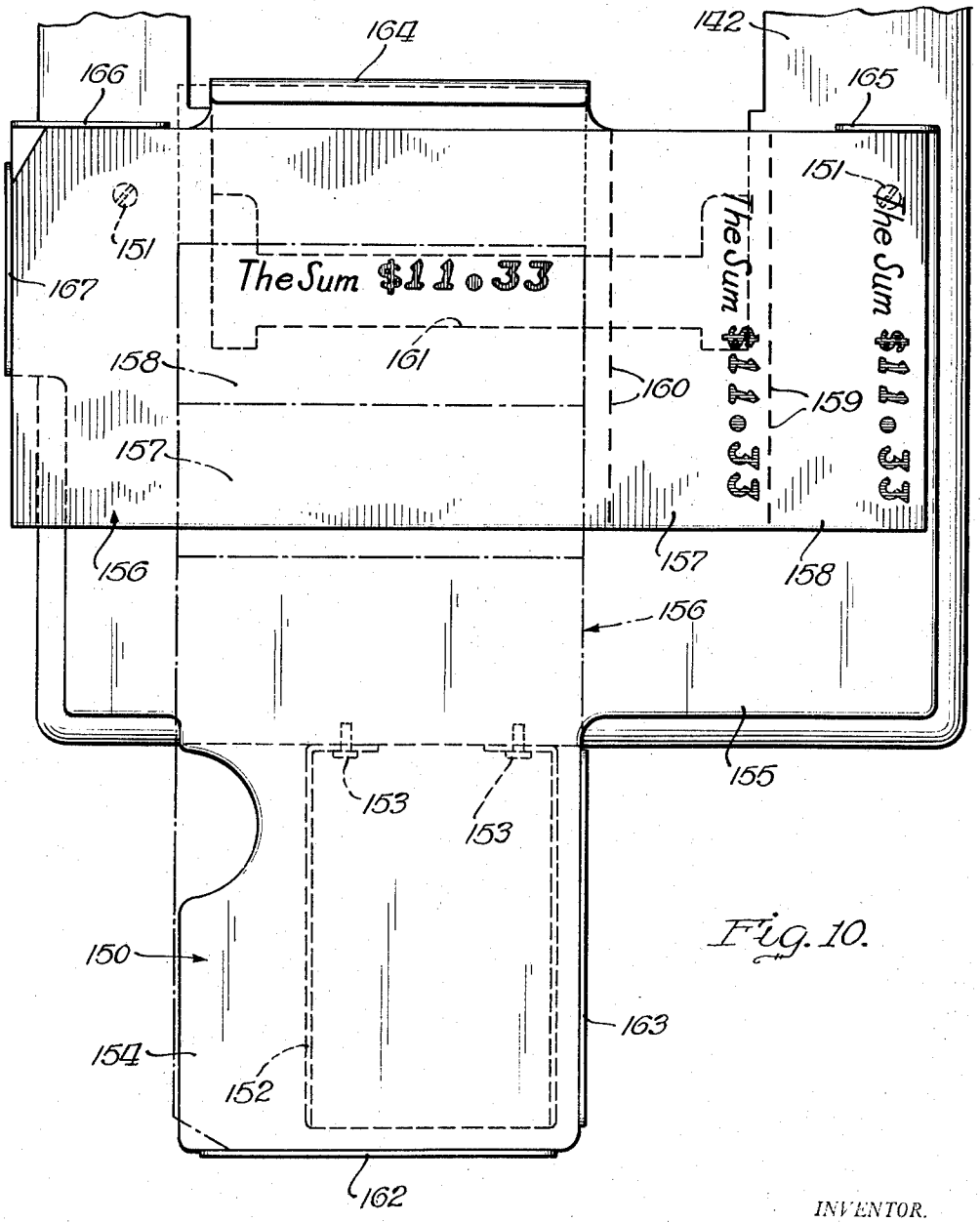


Fig. 10.

INVENTOR.
Hubert Jagger
BY
Brown, Jackson, Boettcher & Dunner
Attys.

Sept. 23, 1958 H. JAGGER 2,853,001

MACHINE FOR PRINTING POSTAL MONEY ORDERS AND LIKE INSTRUMENTS

Filed Oct. 5, 1955 7 Sheets-Sheet 7

Fig. 11.

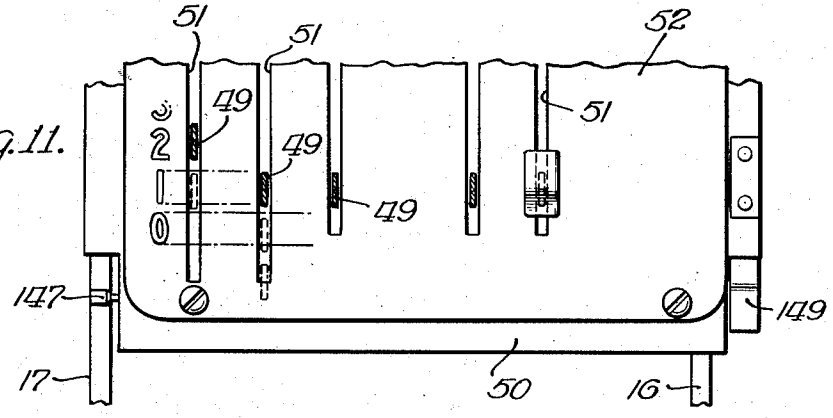


Fig. 12.

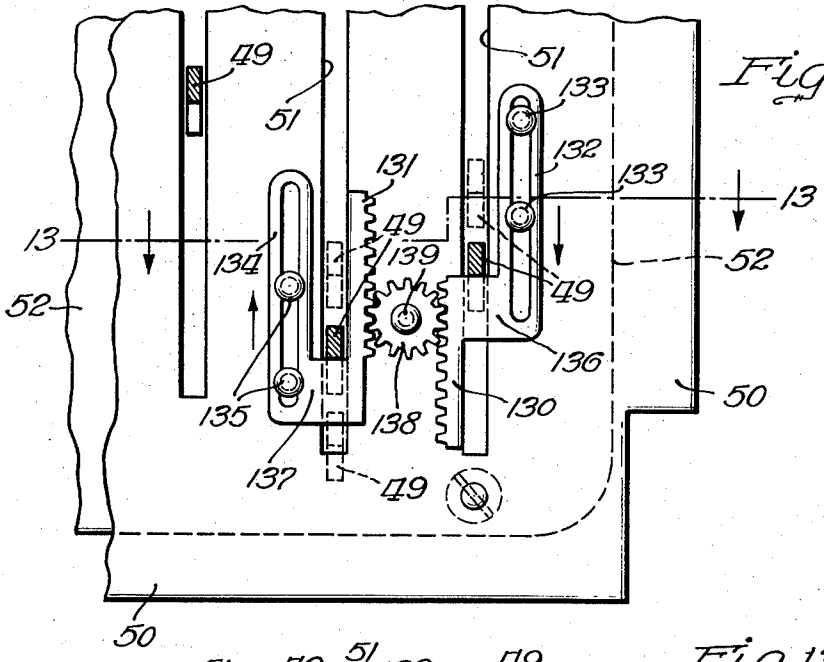
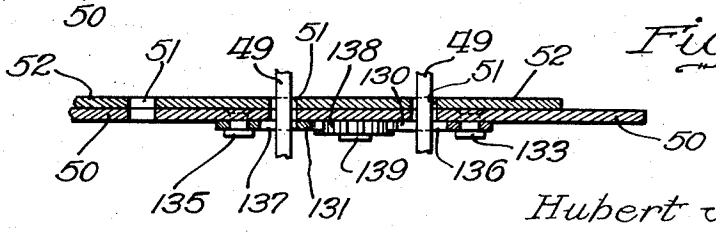


Fig. 13.



INVENTOR.
Hubert Jagger
BY
Brown, Jackson, Boettcher & Dienner
Attys.

United States Patent Office 2,853,001 Patented Sept. 23, 1958

2,853,001

MACHINE FOR PRINTING POSTAL MONEY ORDERS AND LIKE INSTRUMENTS

Hubert Jagger, Maywood, Ill., assignor to Theodore B. Hirschberg, Jr., Chicago, Ill.

Application October 5, 1955, Serial No. 538,674

12 Claims. (Cl. 101—95)

This invention relates to machines for printing instruments for payment of money, and has to do with a machine for printing instruments to be drawn for not greater than a predetermined maximum amount, such as postal money orders and similar instruments.

My invention is directed to a machine of the character stated having means whereby the maximum amount which can be printed by the machine cannot exceed the predetermined maximum amount for which the instrument may be drawn but any desired lesser amount within such permissible maximum may be printed. Postoffice money orders are limited to a maximum of one hundred dollars. The machine of my invention is particularly adapted for printing postal money orders and is provided with means whereby the maximum amount which can be printed by the machine is one hundred dollars and any amount less than one hundred dollars may also be printed. Further, the machine of my invention is provided with means whereby when the first dollar printing member is positioned to print the number one all of the other printing members occupying a printing position greater than zero will be moved to zero printing position incident to movement of the first dollar printing member to its position for printing the number one. Also, if the first dollar printing member is in printing position, movement of any one of the other printing members from zero printing position to another printing position will effect movement of the first dollar printing member to a non-printing position so as to render the machine incapable of printing a sum or amount greater than the permissible maximum. An additional object of my invention is to provide for movement of a prefix bar into position closely adjacent the first of the printing members in effective printing position, while guarding against printing of an incomplete amount including a space which can later be filled in thereby raising the amount for which the instrument is drawn to a value above the permissible maximum. Further objects and advantages of my invention will appear from the detail description.

In the drawings:

Figure 1 is a side view of an instrument printing machine embodying my invention, certain parts being broken away;

Figure 2 is a front view of the machine of Figure 1 with the enclosing casing removed and certain parts broken away;

Figure 3 is a sectional view taken substantially on line 3—3 of Figure 2, certain parts being shown in elevation;

Figure 4 is a front view of the zero setting yoke and the printing segments, the yoke being in its zero setting position, certain parts being broken away and the side plates of the main frame being shown fragmentarily and in section, the number strips of the printing segments being omitted for clearness of illustration;

Figure 5 is a plan view of the zero setting yoke and the first dollar printing segment, the latter being shown fragmentarily, showing fragmentarily the means for rockably mounting the yoke on the main shaft of the machine;

Figure 6 is an inner side view of the first dollar printing segment, the main shaft and the zero setting yoke being shown in section;

Figure 7 is a view taken substantially on line 7—7 of Figure 1 of the cover plate of the casing and the index plate mounted thereon with the printing segments adjusted to different printing positions, the side plates of the casing being shown fragmentarily and broken away and the cover plate also being shown fragmentarily and broken away;

Figure 8 is a view similar to Figure 7 but with the casing side plates omitted and the first dollar printing segment moved downward to its effective printing position;

Figure 9 is a view similar to Figure 8 but with the first dollar printing segment adjusted to its uppermost position and the second dollar printing segment adjusted to its lowermost position, the third dollar printing segment and the two cent printing segments being adjusted differently than in Figures 7 and 8;

Figure 10 is a plan view of the instrument supporting and positioning tray and adjacent portions of the base of the machine, taken substantially on line 10—10 of Figure 1;

Figure 11 is a fragmentary front view of the lower portion of the casing cover plate and the index plate mounted thereon, the side frame plates being shown fragmentarily and the adjusting arms of the printing segments being shown in section, except that of the second cent segment;

Figure 12 is a fragmentary inner face view, on an enlarged scale, of the lower portion of the cover plate and the index plate mounted thereon, illustrating a modification; and

Figure 13 is a sectional view taken substantially on line 13—13 of Figure 12.

The machine of my invention is quite similar, in certain respects, to the check writing machine disclosed in Patent No. 2,697,981, issued December 28, 1954, to Arthur G. Rindfleisch, but differs therefrom in respect to those features which have to do with my present invention. It includes an enclosing casing **15**, to be referred to in greater detail later, suitably mounted upon the main frame of the machine. The main frame comprises side frame members or plates **16** and **17** of irregular polygonal shape, each being provided with a forwardly extending base element **18** which defines, with the body portion of the plate, a rearwardly extending slot **19** for insertion of the postal money order or like instrument into the machine. The side frame plates **16** and **17** are secured together, in spaced parallel relation, by cross rods **20** suitably secured therein.

A shaft **22** is rockably mounted in the frame plates **16** and **17**, by means of reduced studs formed at the ends of the shaft and providing shoulders which abut the inner faces of the plates and hold the shaft against endwise movement. A "sum" bar **23** is mounted at its upper end on shaft **22**, this bar being spaced inward a short distance from the left hand frame plate **17** as viewed in Figure 2, and being secured at its lower end to a guide bar **24** extending transversely of the main frame and secured at its ends in the plates **16** and **17**, bar **24** being disposed a short distance rearward of the lower end of the sum bar **23**. The lower end of sum bar **23** is of T-cross section and slidably receives a prefix plate **25** of channel cross section. The frame side plate **17** is provided with an opening **26**, shown more clearly in Figure 3, aligned with a similar opening in the side of casing **15**, for ready insertion and removal of the prefix plate **25**. The plate **25** is held in position by means of a latch lever **27** pivoted at **28** on the lower end of an arm **29** fixed at its upper end on a pivot pin **30** rockably mounted through the sum

bar 23. A tension spring 31, anchored at its upper end to the sum bar 23 and at its lower end to the inner end of latch lever 27, by a pin 32, holds the notched outer end of the latch lever 27 engaged over a pin 33 projecting from the prefix plate 25 forwardly thereof. The pin 32 limits turning of latch lever 27 in counterclockwise direction, as viewed in Figure 2, in cooperation with the lower end of arm 29. The notch in the latch lever 27 is somewhat larger than pin 33, as shown, permitting limited relative movement or play of the prefix plate 25, for a purpose to be explained presently. The prefix plate 25 may bear a suitable legend upon the printing face thereof, such as "the sum." The printing characters upon the printing face of plate 25 are serrated so as to perforate the paper of the money order or other instrument printed upon, the printing characters of the plate 25 cooperating with a platen which is also provided with serrations upon its printing face, which serrations cooperate with the serrations of the printing characters to effectively perforate the paper or material of the money order or like instrument. In this connection, the slight movement or play of the plate 25 is advantageous as permitting the serrations of the printing characters of the plate being properly aligned with the serrations of the platen, by slight movement of the plate as the platen is brought into full cooperative relation to the printing characters.

A plurality of type segments 35, 36, 37, 38, 39 and 40 are mounted upon shaft 22 for turning movement thereon, these segments being disposed between the upper end of sum bar 23 and a collar 41 secured on shaft 22, and being spaced apart by spaces 42 on shaft 22. An arcuate type bar 43 is suitably secured to the edge portion of each of the segments 36, 37, 39 and 40 for movement therewith. Each type bar 43 is provided, upon its printing face, with a series of characters ranging from zero to nine and arranged in seriatim order. The guide bar 24 is of approximately L-shape in cross section, as shown more clearly in Figure 3, and is provided with guide slots 44 extending from front to back thereof and receiving the type bars of the segments 36, 37, 38, 39 and 40 for guiding the latter in turning movement thereof about shaft 22. The segment 38 is provided with a type bar 45 similar to the type bars 43 except that the type bar 45 is provided with decimal point printing characters instead of number printing characters. The segment 38 is attached to the segment 39, which is the first cent segment, by means of a shouldered stud 46 secured to segment 39 and extending through segment 38, the segments 38 and 39 moving together as a unit. The first segment 35 is provided with but a single printing character, the character shown being the number "1" and the bar 24 is provided with a slot 47 of appropriate width to receive and guide the type element of segment 35 during adjustment thereof. The printing characters of all of the segments are serrated for cooperation with a serrated platen, above referred to. The characters which are used for printing in a given printing operation are those which are disposed in alignment with the prefix plate 25, defining therewith the printing line of the machine, immediately in front of the forward edge of the guide bar 24 which effectively holds the printing segments against any objectionable looseness or play during the printing operation, thus assuring accuracy.

Each of the printing segments has secured thereto a forwardly projecting adjusting arm 49 suitably shaped and disposed to project through a slot in cover plate 50 of casing 15 and a corresponding slot 51 in an index plate 52 secured to cover plate 50 at the front thereof. A number strip 53 is suitably secured to each adjusting arm 49. At its outer end the adjusting arm 49 is provided with a suitable finger grip 54 frictionally secured thereon. The strip 53 is disposed concentrically with the shaft 22 and is marked correspondingly to the arrangement of the characters upon the corresponding type segment. The index plate 52 is provided, adjacent the left hand edge thereof, as shown in Figures 7 to 9, inclusive, with a series of characters corresponding to the characters of the respective type bars 43, with the exception of the number 7 which is omitted, it being noted that the characters appearing upon the index plate 52 are arranged reversely to the characters appearing upon the type bars. The index plate 52 is further provided, adjacent and to the left of each slot 51 therein, with an opening or window for observation of the corresponding number strip 53, which is disposed to move beneath such opening. The number strips 53 are so disposed that the number or character visible through the opening corresponds to the number or character of the associated printing member or segment which is disposed upon the printing line of the machine. Further, the adjusting arm 49 is so disposed as to be aligned with that character of the series of characters adjacent the left side of the index plate 52 which corresponds to the character of the printing member or segment which is in position upon the printing line. That provides simple and efficient means for accurately determining the set of the respective printing or type segments of the machine.

The printing or type segments being free upon the shaft 22 are independently adjustable about a common axis for selectively aligning the printing characters thereof on the printing line of the machine, this independent adjustment of the segments being accomplished by direct movement thereof through the manual operation of the adjusting arms 49. Each of the printing segments is provided with a two way rack 55 formed by cutting teeth in the hub portion thereof. An index bar 56, shown more clearly in Figure 3, extends between and is mounted in the frame side plates 16 and 17 in rear of and above shaft 22. The bar 56 carries spring pressed ball detents 57 which engage the racks 55 of the respective printing segments for releasably holding them in adjustment about shaft 22, bar 56 being provided at its lower edge with slots receiving the racks 55 of the respective segments. Referring to Figures 7 to 9, inclusive, considering the slots 51 in plate 52 from left to right, it will be noted that the lower ends of the first and the second slots are in the same plane, the first slot extending upward beyond the second slot and the third, fourth and fifth slots in plate 52 are of the same length but are appreciably shorter than the first and second slots which extend downward beyond the third, fourth and fifth slots, the upper ends of which latter slots terminate in a common plane. The first three segments are dollar printing segments and the last two segments are cent printing segments, as indicated by the symbols on the finger grips 54 thereof. The length of the last three slots 51 in the index plate 52 is such that the corresponding printing segments can be moved downward and rearward about shaft 22, i. e., in counterclockwise direction as viewed in Figure 3, to zero printing position, in which the zero characters of those segments are positioned on the printing line, and cannot be moved beyond that position, and the second slot 51 in index plate 52 extends downward beyond the last three slots so that the second dollar printing segment may be moved in the direction stated beyond zero printing position; for a purpose to be explained later. Means is provided for inking the printing characters positioned on the printing line of the machine. The inking means may be of suitable known type. A first inking arm 60 is secured on shaft 22 at the inner face of side frame plate 16 and extends forwardly and rearwardly of the shaft. A second inking arm 61 is secured on shaft 22 at the inner face of side frame plate 17 and extends forwardly from the shaft. A mounting plate 62 of generally triangular shape in outline is pivoted at its forward end, at 63, to the forward end of each of the arms 60 and 61. Each of the mounting plates 62 is provided at its rearward portion with a forwardly opening hook 64, the hooks of the mounting plates being connected by a cross rod 65, and is provided at its forward lower portion, adjacent pivot 63,

with a downwardly directed hook **66**. Each of the mounting plates **62** is urged upward about its pivot **63** by a tension spring **67** anchored at its lower end to the mounting plate **62** and anchored at its upper end to the associated inking arm, upward movement of the mounting plate being limited by contact thereof with a stop pin **68** secured in the inking arm. An inking tray **69**, carrying three inking rollers **70**, **71** and **72**, is mounted in the hooks **64** and **65** of the mounting plate **62**. To that end, the shaft **73** of roller **72** is extended beyond the ends of tray **69** for engagement with the hooks **64**, and a rod **74**, mounted in the front of tray **69** is extended beyond the ends of the tray and reduced in diameter to provide studs engaging in the front hooks **66**. A latch plate **75**, carrying a hook **76** engageable over a cross rod **77** connecting the plates **62**, is rockably mounted on rod **74** and is urged in counterclockwise direction, as viewed in Figure 3, by a torsion spring (not shown) mounted on rod **74**. Normally the inking tray **69** is held in its position shown in Figure 3, with the inking roller **72** spaced downwardly a short distance from the printing characters on the printing line of the machine. At the start of the printing operation, the rearward end of tray **69** is released for upward movement, thereby moving the roller **72** into inking contact with the characters on the printing line, after which the inking assembly is moved forward so that roller **72** passes across the characters on the inking line thereby inking them. During the printing operation the inking assembly is moved upward and forward so as to clear the printing members or segments and the inking rollers are rotated so as to assure adequate supply of ink to the roller **72**, as will be explained more fully presently.

A stub shaft **79** is secured in frame side plate **16** and projects outwardly therefrom. A bushing **80** is rotatably mounted on stub shaft **79** and carries a cam **81** secured on bushing **80** and spaced a short distance from plate **16**. A screw **82** is threaded into the outer end of stub shaft **79** with its head seating against a reduced threaded neck **83** of bushing **80**, which is thus held against endwise movement. The outer end of bushing **80**, adjacent neck **83** thereof, is slabbed off from opposite sides to provide flats thereon, and receives the lower end portion of an operating lever **84** fitting tightly thereon. Lever **84** is secured on bushing **80** by a cap nut **84***a* screwed on neck **83**, with an intervening spring washer **84***b*.

The cam **81** is provided with an appropriately formed slot **86** which receives a pin **87** secured in the rearward end of the inking arm **60** and extending through an arcuate slot **88** in side frame plate **16** concentric with shaft **22**. Cam **81** is also provided with a downward extension or nose **89** which, in the normal position of lever **84**, contacts a roller **90** mounted on the adjacent end of shaft **73** of the inking roller **72**. In order to perform the printing operation, the lever **84** is swung from its full line position shown in Figure 1 forward and downward to its broken line position. In the initial movement of lever **84** in forward direction, nose **89** passes out of contact with roller **90** and the inking tray assembly is then swung upward by the tension springs **67**, to extent limited by the stop pins **68**, bringing the inking roller **72** into contact with the characters on the printing line of the machine. Immediately thereafter the inking arms **60** and **61** are swung in clockwise direction, as viewed in Figures 1 and 3, about the axis of shaft **22** by means of the cam **81** and pin **87**. When the inking arms **60** and **61** have been moved but a short distance in clockwise direction, two rollers mounted on shaft **73** of the inking roller **72** contact the lower rearward corners of elements **90'** of the side frame plates **16** and **17** effective for swinging the inking tray assembly **69** downward and rearward about the common axis of the pivots **63** thus positioning the inking roller **72** so as to clear the remaining printing characters of the printing members or segments. That assures that only those printing characters which are on the printing line of the machine will be inked, avoiding wastage of ink and also avoiding possibility of smearing or smudging the instrument to be printed. The lower edges of the elements **90'** are so formed as to maintain the inking roller **72** clear of the printing segments during the continued forward and downward movement of the operating lever **84** and as the lever approaches the limit of such movement the mounting plates contact studs **91** mounted on the frame side plates **16** and **17**, at points in rear of the pivots **63**, thereby swinging the inking tray assembly a further distance downward and forward providing further assurance that the inking roller will not contact the printing segments. Upon return of the operating lever **84** to its normal position, after completion of a printing operation, inking roller **72** is returned to its normal position spaced from the characters on the printing line, by nose **89** of cam **81**. During the first part of the printing operation, immediately after the inking tray assembly is first swung downward to clear the printing segments, a ratchet wheel **92**, secured on shaft **73** of the inking roller **72**, in back of roller **90**, engages a gravity ratchet pawl **92***a* pivoted at its upper end on one of the studs **91** and limited in downward movement by a stop pin **93** secured to the side frame plate **16**. That serves to rotate the roller **72** in clockwise direction, thereby imparting rotation to the rollers **71** and **70**, which are maintained in light pressure contact and are restrained against reverse rotation by suitable means (not shown). The roller **70** is a fountain roller and the roller **71** is a transfer roller so that by rotating the rollers in the manner stated, ink is transferred from the fountain roller **70**, by means of the transfer roller **71**, to the inking roller **72**. That assures that the roller **72** is at all times adequately supplied with ink.

An operating link **95** is pivoted at its forward end, at **96**, to cam **81** at the lower forward portion of the inner side thereof. At its rearward end link **95** is pivoted to pintle **97** of a toggle link structure comprising an upper member or leaf **98** pivotally mounted at its upper edge in the side frame plates **16** and **17**. Pintle **97** passes through sleeves **99** at the lower edge of leaf **98** and through slots **101** in the upper end portions of links **102** pivoted at their lower ends, at **103**, to the rearward ends of perforator arms **104**. The ends of pintle **97** extend into arcuate slots **105** in the frame side plates **16** and **17** and the toggle normally is held in its broken or unextended condition by tension springs **106** and **107** anchored at their rearward ends to leaf **98**, adjacent the lower edge thereof, and to the upper end of one of the links **102**, respectively, the springs **106** and **107** being disposed adjacent the inner face of the frame side plate **17** and anchored thereto at their upper ends. The perforator arms **104** are rockably mounted upon a shouldered shaft **108** extending between and mounted in the plates **16** and **17**. A suitably shaped spacer plate **109** is secured to the inner face of each of the frame plates **16** and **17** and extends upward across the slot **19**, the spacer plates **109** determining the depth or rearward extent of slot **19**. A platen **111** is mounted in upwardly opening slots at the forward ends of the perforator arms **104** and is adjustably connected by screw means to the platen bar **112** fixed in the arms **104** in underlying parallel relation to platen **111**. The upper face of platen **111** is serrated and it is so disposed that when the toggle is extended, during the printing operation, platen **11** cooperates with the characters on the printing line of the machine for effecting the printing operation and serrating the printed area of the postal money order or analogous instrument. After the instrument to the printed has been properly positioned in the machine, the operating lever is swung forward and downward and the inking of the characters on the printing line is effected during the first portion of such movement of the lever. In that connection, it will be noted that the slots **101** in the toggle links **102** provide a lost motion connection such that the roller **72** completes the inking operation and is moved clear of the

printing segments before extension of the toggle is initiated. When the pintle 97 reaches the lower ends of the slots 102, the toggle is extended in the continued movement of the operating lever and the perforator arms 104 are swung about the axis of shaft 103 in clockwise direction, the parts being so timed that the inking tray assembly is moved forwardly out of the path of movement of platen 111 prior to upward movement thereof to a material extent, after which upward movement of platen 111 continues until it is brought into effective pressure contact with the instrument thereby effecting the printing operation, after which the operating lever 84 is returned to its normal position thereby returning the platen 111 to its normal position and the inking tray assembly to its normal position after platen 111 has been lowered sufficiently to clear the inking tray assembly.

Referring to Figures 2 and 3, the arm 29 is fixed on the forward end of the pivot pin 30 which is rockably mounted through the sum bar 23. A tension spring 114 is anchored at its lower end to arm 29 and at its upper end to an upward extension 115 of sleeve 116 at the upper end of bar 23. The tension spring 114 urges arm 29 in counterclockwise direction about the axis of pivot pin 30, as will be clear from Figure 2. A finger 117, fixed on the rearward end of pivot pin 30, overlies the inwardly offset forward end of a cam lever 118 pivoted at its midlength, at 119, on side frame plate 17 at the inner face thereof. The rearward arm of lever 118 is suitably formed to provide a cam member disposed to be contacted by the adjacent end portion of pintle 97. When the operating lever 84 is in its normal position, with the toggle means in broken or retracted condition, the forward arm of lever 118 is in its raised position shown in Figure 3. The finger 117 is then held against downward movement thereby restraining counterclockwise movement of arm 29 by tension spring 114. During movement of the operating lever 84 forward and downward for effecting the printing operation, the toggle means is extended and the pintle 97 moves rearward thereby permitting upward movement of the cam arm of lever 118, the forward arm of which moves downward with resultant downward movement of finger 117. During downward movement of finger 117 the tension spring 114 swings arm 29 in counterclockwise direction thereby moving the prefix plate 25 inward to an extent determined by the setting of the printing segments.

The type bar 43 of the second dollar segment 36 is provided at its upper or forward end with a notch 36*a* which is disposed on the printing line of the machine when segment 36 is moved downward and rearward beyond its zero printing position, that is, with the zero character thereof disposed in rear of the printing line. In that connection, it will be recalled that the second slot 51 in the index plate 52 is of such length that the second dollar segment may be moved rearward beyond zero printing position. When the first dollar segment 35 is in an ineffective position, with the single number printing character thereof disposed forwardly of and above the printing line, the prefix plate can move inwardly beneath segment 35, as will be clear from Figure 2. Also, when the second dollar segment 36 is in its ineffective position with notch 36*a* thereof on the printing line, the prefix plate 25 may move inward beneath segment 36. By adjusting the first and the second dollar segments to ineffective positions any desired amount up to $9.99 may be printed, the prefix plate 25 moving inward into contact with the third dollars segment 37 so as to print the words "the sum" immediately adjacent the character printed by that segment. In that connection it will be recalled that the three last slots 51 in the index plate 52 are of such length that the corresponding segments cannot be moved beyond zero printing position. In order to print an amount less than one dollar, the third dollar printing segment 37 is moved to its zero printing position, with the first and second dollar segments remaining in their ineffective positions. The amount printed will then be for zero dollars and the desired number of cents, the words "the sum" being printed immediately adjacent the zero. It may be noted that in all of the printing operations, a decimal point will be printed immediately preceding the first character or digit of the amount of cents printed, by the decimal point printing segment 38 movable with the cents printing segment 39.

Referring to Figures 2 to 6, inclusive, a U-shaped yoke 121 is mounted for turning movement on shaft 22, one arm of the yoke being disposed between a collar 122 secured on shaft 22 and a spacer 123 mounted on shaft 22 at the inner face of arm 60, and the other arm of yoke 121 disposed between sleeve 116 of bar 23 and a comparatively wide collar 123 mounted on shaft 22 at the inner face of the other inking arm 61. The bight portion 124 is disposed above and extends across the adjusting arms 49 of all of the printing segments. An angle plate 125 is secured to bight portion 124 of yoke 121, at the midportion thereof and extends forwardly therebeyond, plate 125 being of a length to overlie the adjusting arms 49 of all of the segments except the first dollar segment. As is shown more clearly in Figure 6, plate 125 is provided with a forward extension 126 which is suitably secured, conveniently by a screw 127, to a forwardly extending finger 128 of the first dollar segment 35, each of the other segments being also provided with a forwardly extending finger to which the adjusting arm 49 is secured, except the decimal point segment 45. As will be understood from what has been said, the yoke 121 is secured to the first dollar segment 35 and is movable therewith. When that segment is in its fully raised position with the adjusting arm 49 thereof at the upper end of the corresponding slot 51 in the index plate 52, the other segments may be adjusted individually for printing any desired amount less than the permissible maximum, which in the example given is $100.00. In order to print the maximum amount of $100.00, the first dollars segment is moved downward and rearward toward the printing line to its effective printing position with the single printing character thereof, the number 1, positioned on the printing line. During such adjustment of the first dollars printing segment the zero setting bar, comprising the bight portion 124 of yoke 121 and the plate 125, contacts the adjusting arms 49 of all of the other segments which are in an effective printing position other than zero position, and moves them to zero printing position incident to movement of the first dollar segment to effective printing position, it being noted that the length of the last three slots 51 in the index plate 52 is such that the third dollar segment and the cents segments cannot be moved toward the printing line beyond zero printing position. It may be assumed, for the present, that the second dollar segment was in an effective printing position other than zero position and was moved to zero printing position incident to movement of the first dollar segment to effective printing position. The first dollar segment is now in effective printing position and the other segments are in zero printing position so that the machine will now print the maximum amount of $100.00. It is necessary that the second dollar segment be moved toward the printing line beyond zero printing position in order that amounts of less than $10.00 may be printed, as above explained. If the second dollar segment is beyond zero printing position when the first dollar segment is moved to effective printing position, the second dollar segment is moved forward one step to zero printing position in order that the maximum amount of $100.00 may be printed. With the machine set to print $100.00 if any of the segments is moved from zero position to a position above zero position the yoke 121 will be moved upward thereby moving the first dollar segment upward to an ineffective position. Accordingly, it is not possible to print an amount greater than the predetermined maximum, in this case $100.00. In Figure 7 the positions of the finger grips 54 indicate that the first dollar

segment is in its fully raised ineffective position and the other segments are in positions above zero printing position. In Figure 8 the positions of the finger grips **54** indicate that the first dollar segment has been moved to effective printing position, with the number 1 on the printing line and all of the other segments have been moved to zero printing position incident to movement of the first dollar segment to effective printing position. In Figure 9 the positions of the finger grips **54** indicate that the first dollar segment is in its fully raised and ineffective position and the second dollar segment has been moved rearward one space beyond zero printing position, the remaining segments being set as indicated by the characters visible through the openings or windows corresponding thereto in the index plate **52**. If it is desired to print the amount of $44.04, the second dollar segment is moved upward from its position shown in full lines to its position indicated in dotted lines, after which the printing operation is performed. In order to print the maximum amount of $100.00 the first dollar segment is moved downward to effective printing position thereby moving all of the other printing segments to zero printing position, assuming the second dollar segment has been raised above zero printing position and that the first cent segment has also been raised above zero printing position. If the second dollar segment has not been raised from its non-printing position, after the first dollar segment has been moved to effective printing position the second dollar segment should be raised to zero printing position, in order to print the maximum permissible amount, as above described.

In setting the machine for printing the maximum amount of $100.00 a careless operator might fail to raise the second dollar segment from its non-printing position to zero position with the result that a blank space would appear in the amount printed following the number 1. That blank space could later be filled in so that the total amount appearing on the instrument would be in excess of the permissible maximum. It is also possible that the operator might deliberately move the second dollar segment rearward beyond zero printing position after it had been moved to zero position by movement of the first segment to printing position, with intent to leave a blank which could be later filled in. With a view to avoiding those objections, I have provided, in the modified form of my invention shown in Figures 11 to 13, inclusive, means whereby assurance is had that no amount can be printed with a blank between the number or characters printed by the first and the third dollar segments. To that end I provide similar rack bars **130** and **131** at the underface of cover plate **50** and disposed between and adjacent the slots **51** receiving the adjusting arms **49** of the first and the second dollar segments. The rack bar **130** is provided with a slotted extension **132** receiving headed guided studs **133** secured in cover plate **50**, and the rack bar **131** is provided with a slotted extension **134** receiving headed guide studs **135** secured in the cover plate **50**. The rack bars **130** and **131**, including the extension thereof, are curved conformably to cover plate **50** and are slidable thereon, the extension **132** of rack bar **130** being connected thereto by a neck **136** which extends across the slot **51** receiving adjusting arm **49** of the first dollar segment and the extension **134** of rack bar **131** is connected thereto by a neck **137** extending across the slot **51** which receives the adjusting arm **49** of the second dollar segment. The rack bars **130** and **131** mesh with a ratchet wheel **138** disposed therebetween and rotatably mounted on a headed pin **139** secured in the cover plate **50**. It will be seen that movement of either rack bar downward will cause upward movement of the other rack bar and vice versa.

In Figure 12 the adjusting arms of the first and the second dollar segments are shown, in section and in full lines, in the positions which they occupy when the first segment is in effective printing position and the second segment is in zero printing position. It will be noted that the adjusting arms of those two segments are in contact with the necks **136** and **137** of the rack bars **130** and **131**, respectively. If the adjusting arm **49** of the second dollar segment is moved downward to its lower position indicated in broken lines, with the segment moved rearward beyond zero printing position, the rack bar **131** would also be moved downward thus moving the rack bar **130** upward and thereby moving the adjusting arm **49** of the first dollar segment to its upper position indicated in broken lines, thereby moving the first dollar segment to an ineffective position. Further, if the second dollar segment is in its rearward ineffective position the rack bar **131** would be in lowered position and the rack bar **130** would be in raised position. Accordingly, movement of the first dollar segment to effective printing position would cause downward movement of rack bar **130** and upward movement of rack bar **131** so that the second dollar segment would then be in zero printing position. The rack bar and ratchet wheel means thus renders it impossible to print an amount with a blank space between the first and third dollar segments and which could later be filled in to raise the amount for which the instrument was printed. It will be noted that the adjusting arms **49** of the first and the second dollar segments are free from the corresponding rack bars so that those segments may be adjusted individually to any extent desired, subject to prevention of printing of an incomplete amount with a space which might later be filled in, such as above referred to. With the parts in the position shown in Figure 12, the adjusting arm of the first dollar segment may be moved upward from its full line position to its broken line position, or any other desired upper position, without effecting any of the other segments. Also, the adjusting arm of the second dollar segment may be moved upward independently of the rack **131** but if the first segment is in effective printing position upward movement of the second segment from zero printing position, or of any other of the segments except the first segment, will move the latter to ineffective position if it is then in effective printing position.

The casing **15** comprises the cover plate **50**, side plates **141** having marginal flanges overlying the side portions of the cover plate **50** and a base portion **142** fitting over and enclosing the base of the frame, the side plates **141** conforming approximately to the frame side plates **16** and **17** to provide the slot **19** previously referred to for insertion of the instrument to be printed upon. Casing **15** is provided at the front thereof with an opening giving access to the inking tray assembly, this opening normally being closed by a door **143** having at each end thereof an upwardly extending arm **144** and **145**. The arms **144** and **145** are pivotally mounted upon studs **146** and **147**, respectively, secured to the frame side plates **16** and **17**, respectively, and both projecting toward the right hand side of the machine as viewed from in front. Arm **145** is provided at its upper end with an inwardly projecting finger **148** contacting a leaf spring **149** secured to the cover plate **50** and normally holding the door in closed position while permitting upward movement thereof to open position, in which it is held by spring **149**. A tray **150** is mounted upon base **142** of the casing **15** and is secured thereto in a suitable manner, as by means of screws **151** threaded into the top wall of base portion **142**, and brackets **152** secured to the underface of the forward portion of tray **150** and secured by screws **153** to the front wall of base portion **142**. The tray **150** is of cruciform shape in plan and comprises a stem **154** and a cross arm or body portion **155** which extends inwardly of the machine into the slot **19**. It may be assumed that the instrument to be printed upon is a postal money order of elongated rectangular or oblong shape comprising a body portion **156** having attached to one end two stubs **157** and **158** separated from each other and from the body portion **156** by lines of perforation

or cuts 159 and 160. It is also assumed that the instrument is a postal money order or similar instrument requiring that the amount for which it is drawn be printed upon each of the stubs and upon the body portion 156. Tray 150 is provided in the cross arm or body portion 155 thereof with an opening 161 of proper size and shape to accommodate the forward end portions of the perforator arms 104 and the perforator platen 111 carried thereby, this opening underlying the printing line of the machine. As is shown more clearly in Figure 10, tray 150 is provided at the outer or forward end of stem 154 with an upwardly extending flange 162 and, at one side—the right hand side—of stem 154 with a second upwardly extending flange 163. The flange 164 of angle or L-cross section extends upwardly from the inner end of neck or stem 154 of tray 150. The cross arm 155 of tray 150 is provided at its inner edge and adjacent one side thereof with an upwardly extending flange 165 and has adjacent its other side an upwardly extending flange 166 aligned with the flange 165. A flange 167 extends upwardly from the side of cross arm 155 adjacent flange 166, it being noted that the other or right hand side of cross arm 155 is free of flanges and unobstructed and that the flanges 165 and 166 are spaced forwardly of the flange 164. In order to print the desired amount in the body portion 156 of the money order or like instrument, the latter is inserted into the machine from the right hand side thereof into position in contact with the flanges 165, 166 and 167. The area of the money order which is to receive the printed amount for which it is drawn is then disposed on the printing line of the machine and, after the printing segments have been properly adjusted for the proper amount, the printing operation is performed in the manner previously described. The instrument is then withdrawn from the machine and is placed upon the tray 150 in a position perpendicular to its first position, as indicated in dot and dash lines, in contact with the flanges 162 and 163. The inner end of the instrument is then spaced from flange 164 and the stub 158 is properly positioned with the printing receiving area thereof disposed on the printing line of the machine and the same amount is printed on that stub as was printed on the body of the instrument by performing the printing operation, the setting of the machine remaining unchanged. The instrument is then moved inwardly into contact with the flange 164, as indicated by the dotted lines, thus positioning the stub 157 on the printing line of the machine, after which the proper amount is printed on that stub by performing a third printing operation with the setting of the machine remaining unchanged. The instrument then appears as shown in full lines in Figure 10 with the amount for which it is drawn printed on the body portion and the two stubs. Obviously the amount for which the instrument is drawn may be printed on the two stubs first and then upon the body portion of the instrument, as indicated in Figure 10 and, if desired, in printing the stubs the stub 157 may be printed first by moving the instrument inwardly into contact with flange 164 and stub 158 may then be printed by moving the instrument outward into contact with the flange 162. The length and width of the tray 150 and the spacing of the flanges are, of course, such as to assure guiding and positioning of the instrument for the several printing operations in the manner above described.

While the machine of my invention, provided with the tray 150, is particularly suitable for printing postal money orders and similar instruments, in its broader aspects it may be used for printing other instruments requiring that the amount printed upon the instrument not exceed a predetermined maximum. Changes may be resorted to in detail without departing from the field and scope of my invention, and I intend to include all such variations, as fall within the scope of the appended claims, in this application in which the preferred form only of my invention has been disclosed.

I claim:

1. In a machine for printing postal money orders and like instruments, a plurality of individually adjustable printing members including a first member having a single number printing character and movable to an initial position ineffective for printing and a second position effective for printing, the other of said members each having number printing characters ranging from zero to nine and being independently movable to dispose selectively any one of said characters in effective printing position when said first member is in its said initial position, means for moving all of said other members in any printing position thereof from one to nine to zero printing position incident to movement of said first member to effective printing position, and operating means for effecting the printing operation.

2. In a machine for printing postal money orders and like instruments, a plurality of individually adjustable printing members including a first member having a single number printing character and movable to a position ineffective for printing and to an effective printing position, the other of said members each having number printing characters ranging from zero to nine and selectively movable to and from effective printing position by the adjustment of said other members, means for moving those of said other members in printing position other than zero printing position to zero printing position incident to movement of said first member to effective printing position and for moving said first member to an ineffective position incident to movement of any one of said other members from zero printing position to another printing position, and operating means for effecting the printing operation.

3. In a machine for printing postal money orders and like instruments, a plurality of individually adjustable printing segments including a first segment having a single number printing character and movable to an initial position ineffective for printing and a second position effective for printing, the other of said segments each having number printing characters ranging from zero to nine and being independently movable to dispose selectively any one of said characters in effective printing position when said first segment is in its said initial position, means for moving all of said other segments in any printing position thereof from one to nine to zero printing position incident to movement of said first segment to effective printing position, and operating means for effecting the printing operation.

4. In a machine for printing postal money orders and like instruments, a plurality of individually adjustable printing segments including a first segment having a single number printing character and movable to an initial position ineffective for printing and a second position effective for printing, the other of said segments each having number printing characters ranging from zero to nine and being independently movable to dispose selectively any one of said characters in effective printing position when said first segment is in its said initial position, means for moving all of said other segments in any printing position thereof from one to nine to zero printing position incident to movement of said first segment to effective printing position and for moving said first segment to an ineffective position incident to movement of any one of said other segments from zero printing position to another printing position, and operating means for effecting the printing operation.

5. In a machine for printing postal money orders and like instruments, a plurality of individually adjustable printing segments including a first segment having a single number printing character and movable to an initial position ineffective for printing and a second position effective for printing, the other of said segments each having number printing characters ranging from zero to nine

and being independently movable to dispose selectively any one of said characters in effective printing position when said first segment is in its said initial position, adjusting members secured to and projecting outwardly from said other segments for independent manual adjustment thereof, a member movable by said first segment extending across said adjusting members and disposed to contact the latter effective for moving all of said other segments in any printing position thereof from one to nine to zero printing position in the movement of said first segment to effective printing position, and operating means for effecting the printing operation.

6. In a machine for printing postal money orders and like instruments, a plurality of individually adjustable printing segments including a first segment having a single number printing character and movable to an initial position ineffective for printing and a second position effective for printing, the other of said segments each having number printing characters ranging from zero to nine and being independently movable to dispose selectively any one of said characters in effective printing position when said first segment is in its said initial position, adjusting members secured to and projecting outwardly from said other segments for independent manual adjustment thereof, a setting bar movable with said first segment extending across said adjusting members and disposed to contact the latter effective for moving all of said other segments in any printing position thereof from one to nine to zero printing position in the movement of said first segment to effective printing position, and operating means for effecting the printing operation.

7. In a machine for printing postal money orders and like instruments, a plurality of individually adjustable printing segments including a first segment having a single number printing character and movable to an initial position ineffective for printing and a second position effective for printing, the other of said segments each having number printing characters ranging from zero to nine and being independently movable to dispose selectively any one of said characters in effective printing position when said first segment is in its said initial position, adjusting members secured to and projecting outwardly from said other segments for independent manual adjustment thereof, a setting yoke adjustable about said common axis and attached to said first segment for movement therewith, said yoke comprising a setting bar extending across said adjusting members and disposed to contact the latter effective for moving all of said other segments in any printing position thereof from one to nine to zero printing position in the movement of said first segment to effective printing position, and operating means for effecting the printing operation.

8. In a machine for printing postal money orders and like instruments, a plurality of dollar printing segments and two cent printing segments individually adjustable about a common axis, the first of said dollar segments having a single number printing character and being movable to a position ineffective for printing and to an effective printing position, the other of said dollar segments and said cent segments each having number printing characters ranging from zero to nine and selectively movable to and from effective printing position by the adjustment of said other dollar and cent segments, adjusting members secured to and projecting outward from said other dollar and cent segments, a setting yoke adjustable about said common axis fixed to said first dollar segment for movement therewith, said yoke comprising a setting bar extending across and disposed to contact said adjusting members of said other dollar and cent segments effective for moving all of said other dollar and cent segments in any printing position thereof from one to nine to zero printing position in the movement of said first dollar segment to effective printing position, and operating means for effecting the printing operation.

9. In a machine for printing money orders and like instruments, means providing a printing line, a plurality of dollar printing members and two cent printing members individually adjustable, the first of said dollar printing members having a single number printing character and being movable to a position ineffective for printing with said character spaced away from said printing line and to an effective printing position with said character on said printing line, each of the other dollar printing members and the cent printing members having number printing characters ranging from zero to nine selectively positionable on said printing line, means restraining the last one of said dollar printing members and said cent printing members against movement toward said printing line beyond zero printing position, the other of said dollar printing members except said first thereof being movable toward said printing line to a non-printing position beyond zero printing position, means for moving to zero printing position those of said other printing members occupying printing positions other than zero printing position incident to movement of said first dollar printing member to effective printing position with said single number printing character thereof on said printing line, and operating means for effecting the printing operation.

10. In a machine for printing money orders and like instruments, means providing a printing line, three dollar printing segments and two cent printing segments individually adjustable about a common axis, the first of said dollar segments having a single number printing character and being movable to a position ineffective for printing with said character spaced away from said printing line and to an effective printing position with said character on said printing line, each of the other dollar printing segments and the cent printing segments having number printing characters ranging from zero to nine, means restraining the third dollar segment and the cent segments against movement toward said printing line beyond zero printing position, the second dollar segment being movable toward said printing line to a non-printing position beyond zero printing position, means for moving to zero printing position those of said other printing segments occupying printing positions above zero printing position incident to movement of said first dollar segment to effective printing position with said single effective number printing character thereof on said printing line, and operating means for effecting the printing operation.

11. In a machine for printing money orders and like instruments, means providing a printing line, three dollar printing segments and two cent printing segments individually adjustable about a common axis, the first of said dollar segments having a single number printing character and being movable to a position ineffective for printing with said character spaced away from said printing line and to an effective printing position with said character on said printing line, each of the other dollar printing segments and the cent printing segments having number printing characters ranging from zero to nine, means restraining the third dollar segment and the cent segments against movement toward said printing line beyond zero printing position, the second dollar segment being movable toward said printing line to a non-printing position beyond zero printing position, means for moving to zero printing position those of said other printing segments occupying printing positions above zero printing position incident to movement of said first dollar segment to effective printing position with said single effective number printing character thereof on said printing line, means for moving said second dollar segment from its said non-printing position to zero printing position incident to movement of said first dollar segment to printing position with said single effective number printing character thereof on said printing line, and operating means for effecting the printing operation.

12. In a machine for printing postal money orders and like instruments, means providing a printing line, three dollar printing segments and two cent printing segments

individually adjustable about a common axis, adjusting members secured to and projecting outward from said segments, the first of said dollar segments having a single number printing character and each of the other segments having number printing characters ranging from zero to nine, means restraining the third dollar segment and said cent segments against movement toward said printing line beyond zero printing position, the second dollar segment being movable toward said printing line to a non-printing position beyond zero printing position, a zero setting bar secured to and movable with said first dollar segment and disposed to contact said adjusting members of those other segments occupying printing positions above zero printing position and effective for moving said other segments to zero printing position incident to movement of said first dollar segment to printing position with said single number printing character thereof on said printing line, supplementary zero setting means disposed for contact by but free from said adjusting members of said first and second dollar segments and effective for moving said second dollar segment from its said non-printing position to zero printing position incident to movement of said first dollar segment to printing position, and operating means for effecting the printing operation.

References Cited in the file of this patent

UNITED STATES PATENTS

1,783,182	Carlson	Dec. 2, 1930
1,790,790	Breitling	Feb. 3, 1931
1,980,822	Phinney	Nov. 13, 1934
1,997,137	Florance	Apr. 9, 1935
2,482,726	Clements	Sept. 20, 1949
2,697,981	Rindfleisch	Dec. 28, 1954