Aug. 30, 1932. B. M. SHIPLEY 1,874,816

VOUCHER SEVERING AND STACKING MEANS

Filed March 7, 1929 2 Sheets-Sheet 1

FIG. 1

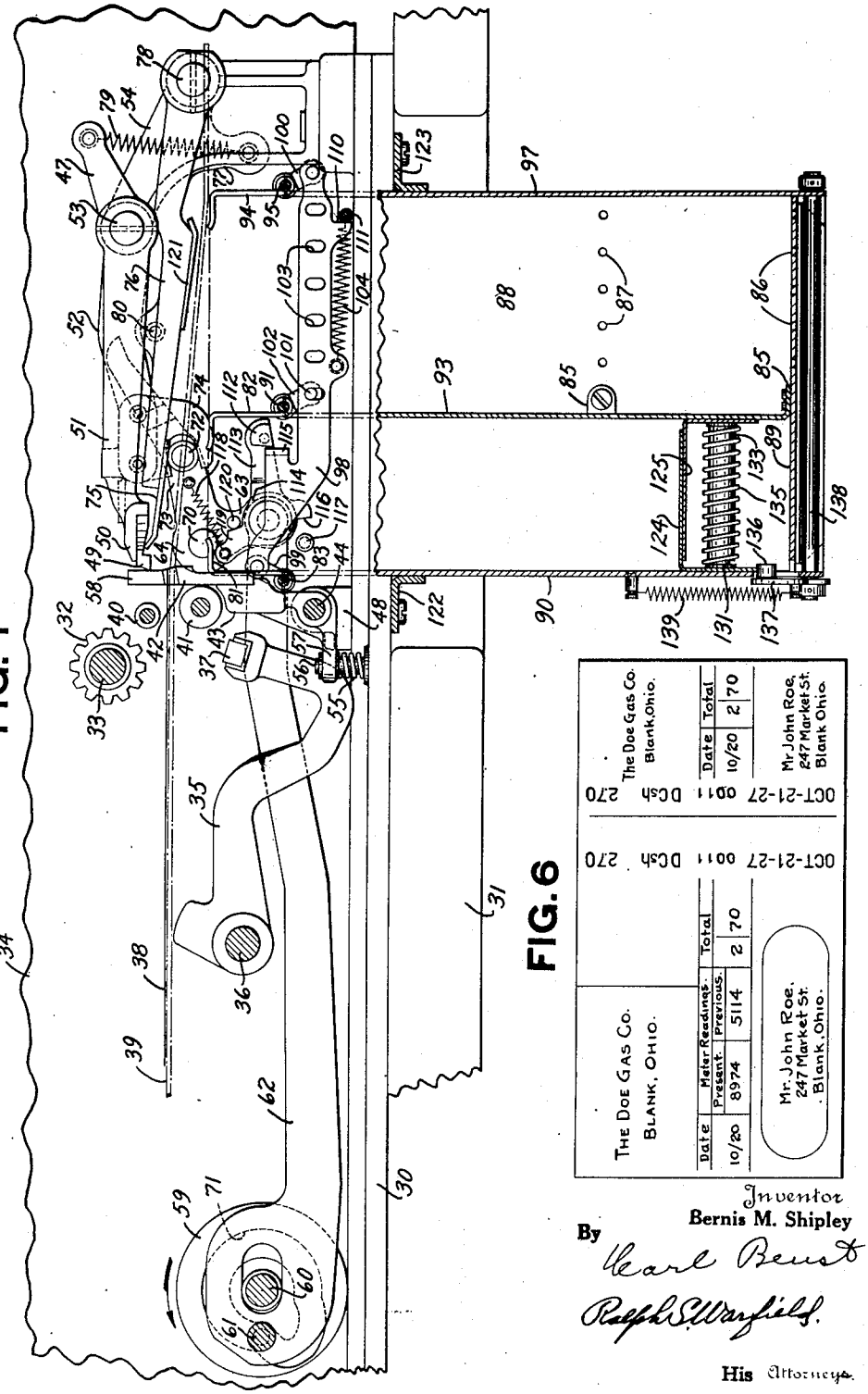


FIG. 6

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FIG. 2

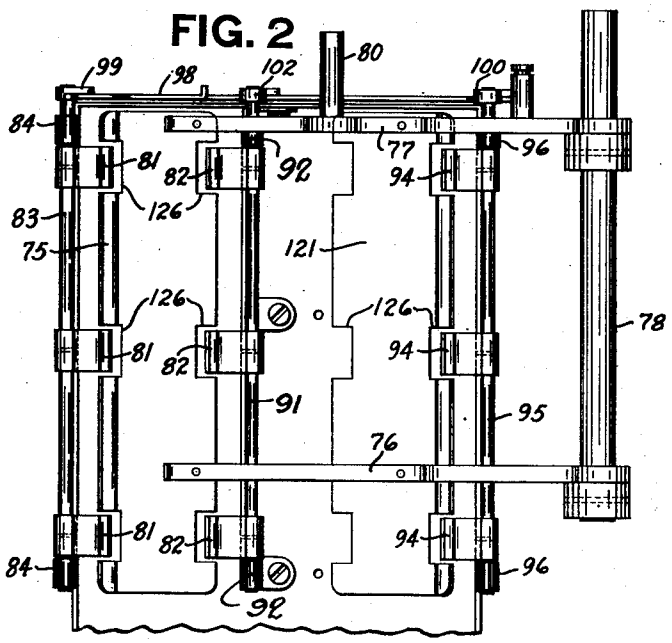


FIG. 3

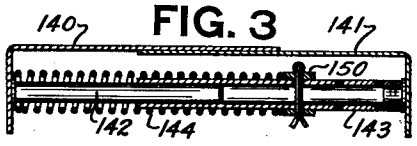


FIG. 4

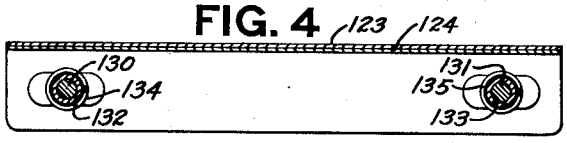
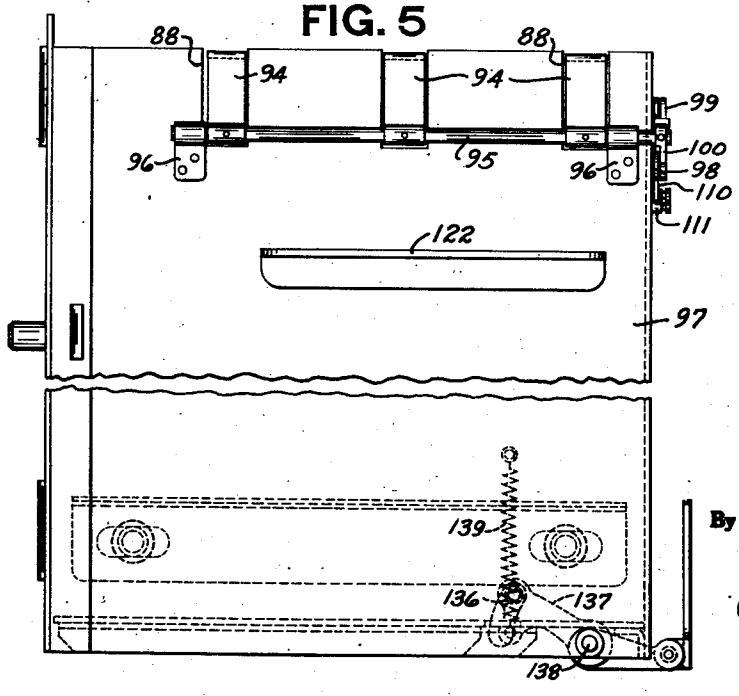


FIG. 5



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UNITED STATES PATENT OFFICE

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VOUCHER SEVERING AND STACKING MEANS

Application filed March 7, 1929. Serial No. 345,054.

This invention relates to improvements in voucher severing and stacking mechanisms of the type used in connection with cash registers or calculating machines.

The invention is particularly adapted for use with machines of the type disclosed in Letters Patent of the United States, No. 1,242,170, issued to F. L. Fuller, October 9, 1917, and No. 1,619,796, issued to B. M. Shipley, March 1, 1927, and is an improvement on the mechanism disclosed in the patent to B. M. Shipley, No. 1,524,755, issued February 3, 1925.

Heretofore, in machines of the above type, and more particularly of the type disclosed in the last-mentioned patent to Shipley, the record material, as a slip, continuous strip or other convenient form, was printed upon in duplicate and then fed through a severing mechanism, which generally comprised relatively movable severing blades between which the record material passed, and by which the leading end of the record material was severed from the body portion thereof to constitute a check, voucher or the like, bearing one of the duplicate impressions.

Means was provided to store these vouchers or checks, one by one, at that point in the machine where they were severed, the storage receptacle being emptied from time to time to afford room for additional checks or vouchers.

In machines of the prior art devised for this purpose, the movable knife blade, in addition to severing the vouchers, is utilized as a stacker for the severed vouchers, to which end the knife blade was caused to travel farther than was required to sever the voucher. As the movable knife blade was arranged at approximately right angles to the co-acting knife blade, which was pressed towards the edge of the movable blade, this extended travel caused the edge of the movable blade to slide along the side of the co-acting blade, and set up additional wear on the cutting edge which soon became dull.

Also, in previous machines, in order to strip the severed vouchers from the stacker, fixed spring clips were provided in the receptacle past which the stacker pressed the vouchers. It was found that the forcible passage of the vouchers past the spring clips frequently mutilated the vouchers, and this was particularly true when the voucher was composed of comparatively thin material.

Furthermore, in previous machines of this type, the voucher receptacle was constructed to receive vouchers of a predetermined size, and for this reason, the machine was capable of satisfactorily handling vouchers of that size only.

The present invention is designed to obviate these objectionable features, and to provide a better and more easily operated mechanism.

Therefore, one object of this invention is to provide a machine of the type specified with novel means to be utilized in addition to the severing means, to quickly and efficiently stack the severed vouchers.

Another object is to so arrange the parts that the severing mechanism may be utilized to initiate the stacking operation without materially affecting the cutting edges of the knives.

Another object is to provide a novel stacking means operable by and having a greater movement than the severing means.

A further object of this invention is to provide novel means to retain the severed vouchers in the positions to which they are moved by the stacker.

Still another object is to provide a novel voucher receptable adjustable to accommodate vouchers of different sizes.

With these and incidental objects in view, the invention consists of certain novel features of construction and combinations of parts, the essential elements of which are set forth in appended claims, and a preferred form or embodiment of which is hereinafter described with reference to the drawings which accompany and form a part of this specification.

In the drawings:

Fig. 1 is a view in front elevation of the voucher severing and stripping device, together with the voucher receptacle which is shown in section for clearness.

Fig. 2 is a detail top plan view of the stacker and the voucher retaining fingers.

Fig. 3 is a detail transverse sectional view of the friction platform for use when the voucher box is adjusted beyond the limit of the smaller platform, to receive larger-sized vouchers.

Fig. 4 is a longitudinal sectional view of the friction platform for the voucher box.

Fig. 5 is a view in side elevation of the voucher box removed from the machine.

Fig. 6 is a view showing a representation of one form of voucher, with its stub.

General description

The printing mechanism with which the present invention is intended to be used includes, generally, a plurality of groups of type elements, only one of which is indicated. The type elements are differentially adjusted under the control of depressible keys or other manipulative means usually associated with the cash register or accounting machine in connection with which the printing mechanism is to be used. A printing hammer takes impressions from one of the groups of type elements on a record strip contained in the machine and the strip is fed step by step at each operation of the machine.

Another printing hammer takes two impressions at each operation of the machine from another group of type elements on an inserted record material.

The record material, when in the form of a slip, such as bills of public service corporations, tax bills, or restaurant or other stub checks, is placed on a supporting table and manually positioned in accordance with a suitable gauge on the table, so as to be beneath the type elements with its leading edge between suitable normally separated feed rolls, and between the cutting edges of the severing device. The first impression is, therefore, made on the stub portion of the material.

After the first of the two successive impressions above mentioned, is made, the record material is advanced one step to bring the body portion of the record material beneath the type elements, the leading end or stub portion of the inserted record material advancing between the knife blades and over a depending storage receptable, the open mouth of which lies substantially on a line with the plane of the record material as it is advanced. Advance of the inserted record material brings the second printing area beneath the type elements, whereupon the printing hammer effects a duplicate impression on the body portion of the inserted slip, after which a second step of feed is imparted to the inserted slip to position the severing line between the two imprints beneath the cutting edges of the severing mechanism, which now operates to sever the stub or voucher from the body portion of the bill.

The severing mechanism conveniently comprises a stationary knife blade and a movable knife blade, and a stacker is operated to press the severed vouchers into a storage receptacle containing a platform of substantially the same cross-sectional area, and supported by friction against the side walls of the receptacle. Stripping fingers insure that the severed vouchers shall remain in the receptacle and not be drawn out by suction when the stacker is raised. The entire voucher severing, stacking and stripping means is operated by a single cam.

The printing mechanism, including the voucher cut-off mechanism, together with the cash register or accounting machine with which the printing mechanism is intended to be used, is well adapted for use in such places of business as hotels and restaurants; public utilities, including gas, electric light and power companies, and telephone companies; as well as by incorporated cities in preparing assessment and water bills, and by counties in preparing tax bills, or briefly, in any place of business or corporation where statements are prepared, a portion of each of which statements is to be severed from the main body thereof as a record of the transaction.

Detailed description

The printing mechanism is supported on a base 30 (Fig. 1) which may rest upon a cabinet, desk, counter, or any suitable support, as indicated at 31.

Only that part of the printing mechanism which has a bearing on the present invention is illustrated herein. For a complete understanding of the entire printing device, reference may be had to the patent to Shipley, No. 1,524,755, heretofore referred to.

Type wheels and printing hammer

The type wheels 32 (Fig. 1), only one of which is shown, for printing upon an inserted slip, are journaled on a rod 33 projecting forwardly from a printer frame 34, and carry types adapted to print numerals representing the amount of the transaction. Others of the type wheels may carry types in the form of symbols to indicate the nature of the transaction, the clerk, etc.

A printing hammer formed of an arm 35 pivotally supported on a stud 36 projecting from the printer frame 34, and extending beneath the type wheels 32, carries a platen 37 at its free end to be thrown sharply against the types of the type wheels 32 to take impressions therefrom on a record material 38 resting on a suitably apertured table 39 in position to receive the impressions. The table may be suitably supported on rods (not shown) projecting forwardly from the printer frame 34.

The slip is placed on the table 39 before the machine is operated. During the operation

of the machine, mechanism (not shown) operates the hammer 35 to take the impression on that part of the inserted slip which is to be severed. The slip is then fed into position so that the second impression will be made on the body thereof. The hammer again operates to take the second impression, after which the slip is again fed forwardly into position to have the stub or voucher severed from the main body of the slip.

Before the slip can be fed, however, it is necessary to place tension thereon in order that the machine may grip the slip. When placing the slip on the table 39 in the first printing position, its right-hand or leading end is inserted between two knurled feed rollers 40 and 41, one of which is journaled on a fixed member projecting from the printer frame 34, the remaining feed roller being carried by a pair of pivoted arms (not shown) and adapted to be swung into contact with the co-acting feed roller to grip the inserted slip 38, after which, and at the proper time, one of the rollers is rotated to feed the slip toward the right, as viewed in Fig. 1.

The feed rollers 40 and 41 are located between the printing wheels 32 and the severing mechanism, and adjacent the latter mechanism, and the leading ends of the slips or record material are introduced between the rollers 40 and 41 and between the cutting edges of the severing mechanism.

Severing mechanism

The severing mechanism includes an upwardly extending knife blade 42 mounted on a holder 43 pivoted on a rod 44 supported in lugs 48, only one of which is shown herein, projecting upwardly from the machine base 30; and a movable blade 49 extending at right angles to the blade 42 and secured to a transverse bar 50 mounted on the free ends of a pair of arms 51 and 52 rigidly connected to a stub shaft 53 projecting outwardly from the printer frame 34, and supported at its outer end in a bracket 54 secured to the base 30.

This enables the movable blade 49, which lies above the leading end of the record material to rock downwardly relatively to the blade 42, to sever the stub or voucher from the record material, and then return to its normal raised position. A spring 55 coiled about a stud 56 projecting upwardly from the base 30, and compressed between the base and an arm 57 projecting from the holder 43, normally presses an extension 58 on the knife blade 42 against the adjacent edge of the movable blade 49. The extension 58 is provided to prevent the blade 42 from rocking under the blade 49 at any time. This extension 58 projects upwardly from the blade 42 at a point to one side of the path of the slip or record material 38, so that an opening is normally left between the blades 42 and 49 for the passage of the record material. When the movable blade 49 is rocked downwardly to sever the voucher, the spring 55 presses the blade 42 against the movable blade 49 to effect the shearing operation.

To rock the arms 51 and 52 supporting the movable blade 49 counter-clockwise at each operation of the machine, a cam 59 (Fig. 1) fast on a printer drive shaft 60, as disclosed in the Shipley Patent, No. 1,524,755, above mentioned, makes one complete rotation in counter-clockwise direction at each operation of the machine. A pitman 62 slidably mounted at one end on the shaft 60 and pivoted at its other end to an arm 63 of a bell crank 64, rocking on a stud 70, carries a roller 61 which projects into a cam groove 71 formed in the face of the cam 59.

The configuration of the cam groove 71 is such that, near the end of each operation of the printer, it shifts the pitman 62 first to the left, as viewed in Fig. 1, and then to the right to rock the bell crank 64, the remaining arm 73 of which carries a projection 72 entered in an open slot formed in a connecting lug 74 depending from the arm 52, to rock the blade-supporting arms 51 and 52 first counter-clockwise, and then clockwise to normal. As a result, the movable blade 49 is first lowered to sever the voucher from the body of the slip 38, which, in the meantime, has been fed into the proper position, the blade 49 then being restored to its normal position.

The printer drive shaft 60 may be rotated from the cash register or accounting machine in connection with which the printing mechanism is to be used, or independently thereof, in any suitable manner.

The foregoing mechanism is found in substance in the Shipley Patent, No. 1,524,755, above mentioned, and constitutes a part of the present invention only insofar as it combines with the novel features now to be set forth.

Stacker

As heretofore explained, an inserted slip 38 after being manually positioned, with its leading end entered between the severing blades 42 and 49, is first printed upon, such imprint being made on the voucher or stub portion, after which the record material is advanced one step, and again printed upon, such last-named impression being made on the body of the slip, after which the record material is again advanced one step to bring the line of severance between the body portion and the stub or voucher into position at the meeting edges of the knife blades 42 and 49, whereupon the severing mechanism operates to sever the voucher from the body or main portion of the slip, which may then be removed from the table 39 and another substituted.

The severed portions, or vouchers, are stored in a compartment or voucher box having walls 90 and 97 and a bottom 89, the box being removably secured to and depending from the machine. The upper open end of the voucher compartment lies in a horizontal plane just below the limit of travel of the movable blade 49, the upper edge of the vertical wall 90 of such compartment extending to a point beside the blade 42, as indicated by the dash lines, so that the voucher, when severed, may drop into the compartment.

It is not desirable, however, to depend on gravity to carry the severed voucher from the position where it is severed into the receptacle provided to receive it, as the vouchers would fall in irregular order and lie in disorderly positions in the receptacle. For this reason, means is provided to forcibly carry the severed vouchers down into the receptacle, and to press them upon a yieldingly supported platform. This insures that the vouchers will be stacked smoothly and in the regular order.

The stacker is given a more rapid movement and is caused to travel a longer distance than the knife 49, and one of the novel features of this invention resides in so arranging the movable knife and the stacker, that the stacker shall travel with the knife 49 on its severing stroke until after the voucher is severed, whereupon the stacker is given a more rapid travel downwardly throughout a much greater distance than the blade 49 travels.

The knife blade 49 overlies the forward edge of a transverse stacker plate 75 secured to the free ends of a pair of arms 76 and 77, the opposite ends of which are fast on a shaft 78 projecting from the side of the printer frame 34 and journaled at its outer end in the bracket 54. The stacker plate supporting arms lie substantially parallel with and underneath the blade-supporting arms 51 and 52.

As the cam 59, rotating in counter-clockwise direction, draws the pitman 62 towards the left, it rocks the bell-crank 64 clockwise to lower the knife blade 49.

As the knife blade 49 with its arms 51 and 52 rocks downwardly on its severing stroke, it presses downwardly the stacker plate 75 with its pair of arms 76 and 77. The longitudinally extending free edge of the stacker plate 75 is bent upwardly at a slight angle and normally rests within a longitudinal seat formed in the under face of the movable knife blade 49 for clearance. A spring 79 connected at one end to the rearward extension 47 of the blade-supporting arm 52, and at its opposite end to a depending finger from the plate-supporting lever 77 normally holds the stacker plate 75 in its raised position, as shown in Fig. 1.

The stacker plate 75 and arms 76 and 77 are lowered with the blade 49 and at the same rate of speed until the extended end of the arm 73 of the bell crank 64 strikes a stud 80 projecting laterally from the stacker plate-supporting arm 77 at a point intermediate its ends. The extended end of the bell crank arm 73 contacts the stud 80 at about the time the knife blade 49 has completely severed the voucher, and continued movement of the bell crank 64 lowers the knife blade 49 slightly farther. The arc of travel of the extended end of the arm 73 being much greater than the arc traversed by the projection 72 nearer the fulcrum of the arm, rocks the stacker-supporting arms 76 and 77 and the stacker plate 75 counter-clockwise at a greater rate of speed than the knife 49 and for a greater distance.

The stacker plate 75, upon such additional movement, strikes and carries the newly severed voucher downwardly into the voucher box.

Obviously if there is a pile of previously deposited vouchers in the box, the stacker plate 75, which has a constant path of travel, will press the last-severed voucher on top of the pile already deposited and compact the pile of vouchers.

The base 31 of the machine is apertured to accommodate the upper end of the voucher box, and fastenings passing through brackets 122 and 123 fast on the sides of the voucher box secure the box to the base of the machine.

Continued rotation of the cam 59 drives the pitman 62 to the right (Fig. 1) to rock the bell crank 64 counter-clockwise, thereby restoring the movable blade 49 to its normal raised position and withdrawing the extended end of the arm 73 of the bell crank 64 from the stud 80 on the arm 77 supporting the stacker plate 75, to free the arms 76 and 77 and the plate 75 to the action of the tensioned restoring spring 79, which causes the stacker plate to follow the blade 49 upwardly. Owing to the difference in leverages between the blade-supporting arms 51 and 52 and the plate-supporting arms 76 and 77, the spring 79 quickly withdraws the stacker plate 75 from the open end of the voucher box so that the up-turned free edge of the plate catches up with and contacts the blade 49, after which the stacker plate moves with the severing blade 49 to its normal position.

Voucher retainer fingers

Stripping means is provided to insure the retension of the vouchers in the voucher box and prevent them from following the stacker plate 75 upwardly due to suction or other causes, as the plate is restored to its normal position above the mouth of the box.

Conveniently, such stripping means may take the form of opposed groups of angularly-shaped fingers 81 and 82 (Figs. 1, 2 and

5) located adjacent the upper open end of the voucher box, the inturned ends of such fingers extending partway towards each other across the top of the box, to strip the vouchers from the stacker plate and retain them in the box.

The upper edges of the side walls 90 and 97 and of a partition 93 may be notched as at 88 (Fig. 5) at points opposite the stripping and retaining fingers to afford clearance therefor.

The fingers 81 are spaced apart along and project upwardly from a small shaft 83 journaled in brackets 84 fast on the outer face of the left-hand side wall 90 of the voucher box near its upper end, as viewed in Fig. 1. The set of fingers 82 are similarly fast on a shaft 91 journaled in brackets 92 supported by the partition plate 93 extending upwardly from the bottom 89 of the voucher box, and adjustably secured therein. A third set of retainer fingers 94, fast on a shaft 95 journaled in brackets 96 on the outer face of the right-hand side wall 97 of the voucher box, are provided for the same purpose as the fingers 81 and 82, but are used only when vouchers of the maximum width are to be severed and stacked in the voucher box, as will be hereinafter explained.

The upper ends of the fingers are inturned to project over the edges of the respective plates to which they are secured, and serve as stripping and retaining flanges for the vouchers. The shafts 83, 91 and 95 lie parallel with each other and preferably in the same horizontal plane.

A link 98 connects an upwardly extending arm 99 fast on the inner end of the finger shaft 83 with a downwardly extending arm 100 fast on the inner end of the finger shaft 95. A stud 101 on a downwardly extending arm 102 fast on the inner end of the finger shaft 91 on the adjustable partition plate 93, projects through one of a plurality of elongated openings 103 in link 98, and a spring 104 connected to the link 98 normally holds a shoulder 110 thereon against a stop stud 111, the tension of the spring operating through the link and the arms 99, 100 and 102 to rock the shafts 83, 95 and 91 and the sets of fingers 81, 94 and 82 so that their inturned ends normally extend over the upper edges of the compartment.

Obviously, the inturned ends of the fingers 81, 82 and 94 normally lie in the path of the voucher as it is deposited in the box, and hence the fingers must be shifted out of the path of the voucher, and then restored to effective position after the voucher has been carried past them, so as to prevent the accidental withdrawal of the vouchers. Means is provided to properly control the fingers, as follows.

An elbow lever 114 is pivotally mounted on the arm 63 of the bell crank 64 which raises and lowers the knife blade 49, the pivot point of the elbow lever preferably being coincident with the pivotal connection between the reciprocating pitman 62 and the bell crank.

A stud 112 on an arm 113 of the elbow lever 114 lies behind a laterally extending lug 115 on the link 98, and as the cam 59 draws the pitman 62 to the left (Fig. 1) to rock the bell crank 64, the latter carries the elbow lever along to press the stud 112 against the lug 115, forcing the link 98 to the left against the tension of its restoring spring 104.

The link 98, as it shifts to the left, turns the arms 99, 100, 102 and their shafts 83, 95 and 91 to rock the sets of fingers 81, 94, 82 out of the path of the descending voucher. Shortly after the voucher, carried downwardly by the stacker plate 75, passes the fingers 81 and 82, a shoulder 116 on the elbow lever 114 strikes a stud 117 projecting from the printer frame 34, and continued movement of the pitman 62 towards the left causes the elbow lever 114 to rotate counter-clockwise about its pivot, thus raising the stud 112 clear of the lug 115, whereupon the tensioned spring 104 draws link 98 quickly to the right until it is arrested by the shoulder 110 striking the stop stud 111. The reciprocatory movement of the finger-operating link 98 towards the right, rocks the arms 99, 102 and 100, and their shafts 83, 91 and 95 to restore the groups of fingers 81, 82 and 94 to their normal effective positions to retain the vouchers in the voucher box. The link 98 moves towards the right relatively to the stud 112 which then rests on the upper edge of the link, so that when the pitman 62 rocks the bell crank 64 counter-clockwise to restore the knife blade 49 and the stacker plate 75, the stud 112 rides along the edge of the link until it clears the lug 115, whereupon a spring 118 rocks the elbow lever 114 clockwise to restore the stud 112 to its normal position behind the lug 115. Clockwise movement of the elbow lever 114 is limited by the arm 119 thereof striking a stud 120 in the arm 62 of bell crank 64.

Clearance notches 126 (Fig. 2) are cut or formed in the stacker plate 75 and in a supplementary stacker plate 121, also fast on arms 76 and 77, whereby these plates, as they swing upwardly to their normal positions, clear the stripping and retaining fingers 81 82 and 94, which latter restore to normal prior to the withdrawal of the stacker plates to prevent the escape of the vouchers from the compartment, as the stacker plates are returning to normal.

The retaining fingers 81, 82, 94 are rocked to idle positions just prior to the time when the descending stacker plates would contact the fingers, so that even if the springiness of the piled vouchers tends to force the uppermost vouchers above the upper end of the

box, the pile is immediately thereafter compressed by the stacker plates to prevent loss or displacement of the vouchers during the time the fingers remain displaced.

Adjustment for vouchers of different sizes

It frequently happens that the different purchasers of cash registers, for instance, desire vouchers of different lengths from top to bottom, depending upon the amount of printed matter to be carried thereon, the sizes of the permanent filing compartments in which the vouchers are ultimately stored, ease of handling, or what not, the requirements of one purchaser differing from those of another.

It is a comparatively easy matter to arrange the slip-feeding rollers 40 and 41 to advance the slip 38 different distances, and in order to avoid the necessity of carrying stocks of voucher boxes of different sizes to correspond with the different sizes of vouchers which may be required, a single voucher box of standard size is provided, equipped with a partition 93 adjustable within the voucher box to vary the size of the compartment in which the vouchers are stacked.

As one means to adjustably retain the partition in any of its positions, the rear wall 88 (Fig. 1) of the voucher box has a row of apertures 87 formed therein corresponding to a similar row of apertures formed in the front wall (not shown) of the box, there being a similar row of apertures 86 formed in the bottom plate 89.

Suitable fastenings passing through ears 85 projecting from the side and bottom edges of the partition 93 into selected apertures of the rows of apertures in the front and rear walls and bottom of the voucher box, retain the partition in adjusted position.

The series of openings 103 in the link 98 are provided to enable the finger-shaft 91 carried by the upper end of the partition 93 to be connected with the link in any of the positions to which the partition may be adjusted.

When the partition 93 is adjusted to the extreme right-hand side of the voucher box, or entirely omitted, it is desirable that the additional or supplemental stacker plate 121 above-mentioned, be provided to insure that the long vouchers shall lie flat, and prevent curling or bulging of the vouchers at their right-hand ends.

Such supplemental stacking plate 121 is secured to and extends between the supporting arms 76 and 77 at a point intermediate the outer stacking plate 75 and the pivotal point of the arms 76 and 77.

The link 98 insures the removal of the group of stripping and retaining fingers 94 from the path of the wider vouchers simultaneously with the removal of the sets of fingers 81 and 82.

Insuring the proper positioning of the vouchers in the voucher box

To prevent the vouchers from dropping in helter-skelter fashion on edge or otherwise to the bottom of the voucher compartment, a table or platform is usually provided in the compartment, which, at the beginning of the series of operations of the machine, is manually positioned near the upper end of the voucher box to form a false bottom on which the stacking plates deposit the vouchers successively.

And as the pile of vouchers increases in height, the pressure of the stacking plate on its depositing stroke against the top of the pile, will gradually force the table or platform downwardly so that the upper end of the pile of vouchers lies just below the mouth or open end of the voucher box at all times. The platform is yieldingly supported between the left side wall 90 and the partition 93 of the voucher box. Each downward stroke of the stacking plate 75 carries a newly-severed voucher into the space between the wall 90 and the partition 93, and presses the platform downwardly a distance equal to the thickness of one voucher.

The platform comprises a pair of overlapping angle plates 124 and 125 (Figs. 1 and 4. The vertical flange of the plate 124 carries two horizontally extending studs 130 and 131 telescoped into two hollow studs 132 and 133 respectively, extending from the oppositely located vertical flange of the plate 125. Coiled springs 134 and 135 surrounding the studs 132 and 133, respectively, press the vertical flanges of the plates 124 and 125 into frictional contact with the wall 90 and the partition 93 of the vouched box to retain the stacking platform in any position to which it may be adjusted.

When it is desired to sever a larger portion from the inserted slip, the partition 93 is adjusted towards the right (in Fig. 1), thereby enlarging the receiving compartment of the voucher box to accommodate the larger vouchers.

The table or platform readily adapts itself to the larger area thus formed, the springs 134 and 135 (see also Fig. 4), expanding to force the angle plates 124 and 125 apart so as to hold the vertical flanges of the angle plates in contact with the side wall 90 and partition 93, respectively.

When the voucher box is enlarged beyond a certain point, it may exceed the limit of expansion of the smaller platform illustrated in Fig. 1, and render advisable the use of a platform of greater width, such as is illustrated in Fig. 3. This platform differs from the one described above, only in that the horizontal body-portions of the plates 140, 141 are wider and the studs 142 and 143 are longer.

The angle plates 140 and 141 carry the

horizontal studs 142 and 143, respectively, the studs 142 of the plate 140 being telescoped within the hollow studs 143 of the plate 141. The coil springs 144, compressed between the vertical flange of the plate 140 and the collars 150 adjustably supported on the hollow studs 143, presses the vertical flanges of the plates 140 and 141 against the walls of the receiving compartment of the voucher box when the platform is inserted in its position within the box. As the box is enlarged to accommodate still larger vouchers, the collars 150 may be adjusted towards the left, as viewed in Fig. 3, to maintain the correct friction between the vertical flanges of the plates 140 and 141 and the side wall 90 and the partition 93, or in case the partition 93 is removed, between the walls 90 and 97 of the voucher box.

When the stacking platform, moving gradually downward, as the vouchers are accumulated thereon, arrives at the bottom of the voucher box, the vertical flange of the plate 124 (Fig. 1), strikes a stud 136 (Figs. 1 and 5), on an arm 137 fast on a shaft 138 journaled at its opposite ends in the side walls 90 and 97 of the voucher box, which stud extends through an opening 129 in the side wall 90. The platform causes the shaft to rock counter-clockwise, as viewed in Fig. 5, to operate mechanism (not shown), whereby when a sufficient number of vouchers have been piled in the voucher box, the cash register or accounting machine in connection with which the present invention is used, is locked against operation until the severed vouchers are removed from the voucher box and the stacking platform is restored to a position higher up in the box, preferably near the top thereof.

When the platform is raised from its lowered position, a spring 139 (Fig. 1) restores the arm 137 and shaft 138 to their normal positions and frees the machine for operation. This locking mechanism with its platform control forms the subject-matter of a separate application, and no further description or illustration thereof is included in this application.

While the form of mechanism herein shown and described is admirably adapted to fulfill the objects primarily stated, it is to be understood that it is not intended to confine the invention to the one form or embodiment herein disclosed, for it is susceptible of embodiment in various forms all coming within the scope of the claims which follow.

What is claimed as new, is:

1. The combination with a voucher-severing device; actuating means therefor; and a receptacle in which the vouchers are successively deposited; of a voucher-stacking means initially operated by the severing means, and finally operated directly by the actuating means to move the stacking means relatively to the severing means to deposit the severed vouchers in the receptacle.

2. The combination with a voucher-severing device; actuating means therefor; and a receptacle to accommodate the vouchers; of a separately operable voucher-stacking means lying in the path of travel of the severing device, to deposit the vouchers in the receptacle, and initially actuated by the severing device; and means on the actuating means to impart a final movement to the stacking means relatively to the severing device to complete the depositing stroke of the stacking means.

3. The combination with a shiftable voucher-severing member; actuating means therefor; and a receptacle to accommodate the severed vouchers; of a separately operable voucher-stacking means initially actuated by the severing member and having a path of travel of greater extent than the path of travel of the severing member, to deposit the severed vouchers in the receptacle; and means on the actuating means to effect a final movement of the stacking means relatively to the severing device on its depositing stroke.

4. In a machine of the class described; the combination with means to sever portions of record material; actuating means for the severing means; and a receptacle to receive the severed portions; of stacking means to deposit the severed portions in the receptacle; the stacking means initially operated by the severing means, and later, directly operated by the actuating means to move the stacking means relatively to the severing means to complete the operation of stacking the severed portions in the receptacle.

5. In a machine of the class described, the combination with voucher-severing means; and a receptacle for the severed vouchers; of a pivotally-supported voucher stacking means mounted in the path of the severing means; means to drive the voucher-severing means and the voucher-stacking means, successively, in one direction, the voucher-severing means adapted to initially drive the voucher-stacking means until the driving means becomes directly effective upon the stacking means to drive the stacking means relatively to the severing means.

6. In a machine of the class described; the combination of a receptacle for vouchers; means to stack the vouchers in the receptacle; means extending over the entrance of the receptacle to retain the vouchers therein; and a separate member to displace the retaining means to admit additional vouchers.

7. In a machine of the class described; the combination of a receptacle for vouchers; means to stack the vouchers in the receptacle; means normally effective to strip the vouchers from the depositing means and

to retain the vouchers in the receptacle, such stripping and retaining means extending over the entrance of the receptacle; a separate member to shift the stripping and retaining means out of the path of the vouchers; and means to restore the stripping and retaining means prior to the withdrawal of the stacking means, to hold the vouchers in the receptacle when the stacking means is withdrawn.

8. In a machine of the class described, the combination with a receptacle for the vouchers and means to stack the vouchers in the receptacle; of stripping and retaining means to insure the retention of the vouchers in the receptacle, such stripping and retaining means normally lying in the path of the vouchers as they are stacked in the receptacle; and means to shift the stripping and retaining means out of the path of the vouchers as the stacking means approaches the receptacle and to restore the stripping and retaining means to effective position after the voucher has been stacked in the receptacle and prior to the withdrawal of the stacking means from the receptacle.

9. In a machine of the class described; the combination with a receptacle to receive vouchers and means to stack the vouchers successively in the receptacle; of a plurality of stripping and retaining fingers to prevent withdrawal of the vouchers from the receptacle, the fingers normally lying in the path of the vouchers; means to connect the fingers; actuating means operable upon the connecting means to shift the fingers to their ineffective positions; means to disconnect the actuating means from the finger-shifting means; and means to restore the fingers to their effective positions.

10. In a machine of the class described; the combination with a voucher-severing means; a receptacle for the severed vouchers; and means to operate the severing means; of means to stack the vouchers successively in the receptacle; fingers normally effective to prevent the withdrawal of the vouchers from the receptacle, such fingers normally lying in the path of the vouchers; means to connect several fingers; means joined to the means to operate the severing means and operated as an incident to the operation of the severing means to actuate the connection and shift the fingers to ineffective position; means operated as an incident to the operation of the stacking means to uncouple the connection and its actuating means; and means to move the connection in the opposite direction to restore the fingers to their effective positions after the deposit of a voucher into the receptacle and before the stacking means is withdrawn.

11. In a machine of the class described, the combination of a receptacle for vouchers; means to stack the vouchers successively in the receptacle; shiftable fingers normally effective to prevent the withdrawal of the vouchers from the receptacle; operating means to shift the fingers to their inoperative positions out of the paths of the vouchers; drive means for the operating means, the drive means having a constant path of travel; a normally effective coupling member between the drive means and the operating means to enable the drive means to withdraw the fingers to ineffective position; means to restore the fingers to their effective positions; and means to cause the coupling to release the fingers to the action of their restoring means.

12. In a machine of the class described, the combination with a receptacle for vouchers; means to stack the vouchers successively in the receptacle; and shiftable fingers normally effective to prevent the withdrawal of the vouchers from the receptacle; of operating means to shift the fingers to their ineffective positions; drive means for the operating means; a latch to releasably connect the drive means and the operating means; means to restore the fingers to their effective positions; and release means contacted by the latch near the end of the travel of the drive means in one direction to free the fingers and their operating means to the action of the restoring means.

13. In a machine of the class described; the combination with a receptacle to receive vouchers; and means to stack the vouchers in the receptacle; of a plurality of fingers normally effective to block the entrance of the receptacle to prevent the withdrawal of the vouchers; shafts supporting the fingers; arms on the shafts; a link common to all of the arms; and means to actuate the link to rock all of the fingers to ineffective positions.

14. In a machine of the class described; the combination with a receptacle for vouchers; and means to stack the vouchers in the receptacle; of a plurality of fingers normally effective to block the entrance to the receptacle to prevent withdrawal of the vouchers; shafts supporting the fingers; arms on the shafts; a link common to all of the arms; means to actuate the link in one direction to rock the fingers to ineffective positions; and means to release the link from its actuating means.

15. In a machine of the class described; the combination with a receptacle to receive vouchers; and means to stack the vouchers in the receptacle; of a plurality of groups of fingers normally effective to block the entrance to the receptacle to prevent the withdrawal of the vouchers; shafts supporting the groups of fingers; arms on the shafts; a link common to all of the arms; means to actuate the link in one direction to rock the fingers to ineffective position; means to release the link from its actuating means; and means to move the link in the opposite direc-

tion to restore the fingers to their effective positions.

16. In a machine of the class described; the combination of a receptacle having a partition adjustable to several positions to enable the receptacle to accommodate vouchers of different widths; means to stack the vouchers in the receptacle irrespective of the widths of the vouchers; groups of means normally effective to retain the vouchers against withdrawal from the receptacle; one such group supported on the adjustable partition; means common to the several groups of retaining means, to connect such groups, that group of retaining means mounted on the adjustable partition being adjustable relatively to such common means; and means to operate the connecting means to render the retaining means ineffective and effective in timed relation to the operation of the stacking means.

17. In a machine of the class described; the combination with means to sever portions of a record material; a receptacle to receive the severed portions; stacking means lying in the path of travel of the severing means, and initially actuated by the severing means to deposit the severed portions in the receptacle; a bell crank to operate the severing means and to impart final movement to the stacking means relatively to the severing means to complete the depositing stroke of the stacking means; a plurality of stripping and retaining means normally lying in the path of the severed portions; a connection between the several stripping and retaining means; an elbow lever supported on the bell crank; a lug on the connection; a stud on the elbow lever effective upon operation of the bell crank to contact the lug and move the connection in one direction to displace the stripping and retaining means; means to trip the elbow lever to release the connection; and means to move the connection in the opposite direction to restore the stripping and retaining means to effective position.

18. In a machine of the class described; the combination of a receptacle to accommodate the vouchers; a partition adjustably secured within the receptacle to vary the cross-sectional area of the receiving compartment to accord with vouchers of a plurality of widths; means to deposit the vouchers in the receptacle; an expandable platform in the receiving compartment to support the vouchers; and means to press the sides of the platform against the side walls of the receiving compartment to enable the platform to accommodate itself to compartments of various cross-sectional areas, and to enable the upper end of the pile of vouchers to remain at the upper end of the receptacle as additional vouchers are deposited in the receptacle.

19. In a machine of the class described; the combination of a receptacle to accommodate record material; of a partition adjustable to a plurality of positions to adapt the receptacle to accommodate record material of different widths; an expandable platform, including a pair of angle plates; hollow studs on one of said angle plates; studs on the other angle plate telescoped within the hollow studs; and springs surrounding the studs to press the angle plates against the inner walls of the receptacle to yieldingly support the platform.

20. In a machine of the class described; the combination of a receptacle to accommodate record material; a partition adjustable to a plurality of positions to vary the size of the receptacle in accordance with the width of the record material; and a platform yieldingly and frictionally supported between one of the side walls of the receptacle and the partition, to support the record material.

21. In a machine of the class described; the combination of a receptacle to accommodate record material; means to stack the record material in the receptacle; a partition adjustable within the receptacle to vary the size of the receptacle to accord with the width of the record material; an expandable platform yieldingly and frictionally supported in the receptacle; and means to expand the platform as the partition is adjusted to increase or decrease the size of the receptacle.

22. In a machine of the class described; the combination of a receptacle to accommodate record material; a partition adjustable to vary the size of the receptacle; a platform on which the record material is supported; means operable upon the stack of record material to move the platform in one direction to increase the capacity of the receptacle; and means to expand the platform in another direction to increase the supporting area of said platform.

23. In a machine of the class described; the combination of a receptacle to receive record material; stacking means to deposit the record material in the receptacle; a bell crank to operate the stacking means; a plurality of stripping and retaining means normally lying in the path of the record material; a connection between the several stripping and retaining means; a lever supported on the bell crank; a lug on the connection; means on the lever effective upon operation of the bell crank to contact the lug and move the connection in one direction to displace the stripping and retaining means; means to trip the lever to release the connection; and means to move the connection in the opposite direction to restore the stripping and retaining means to effective positions.

In testimony whereof I affix my signature.

BERNIS M. SHIPLEY.