

Sept. 1, 1953

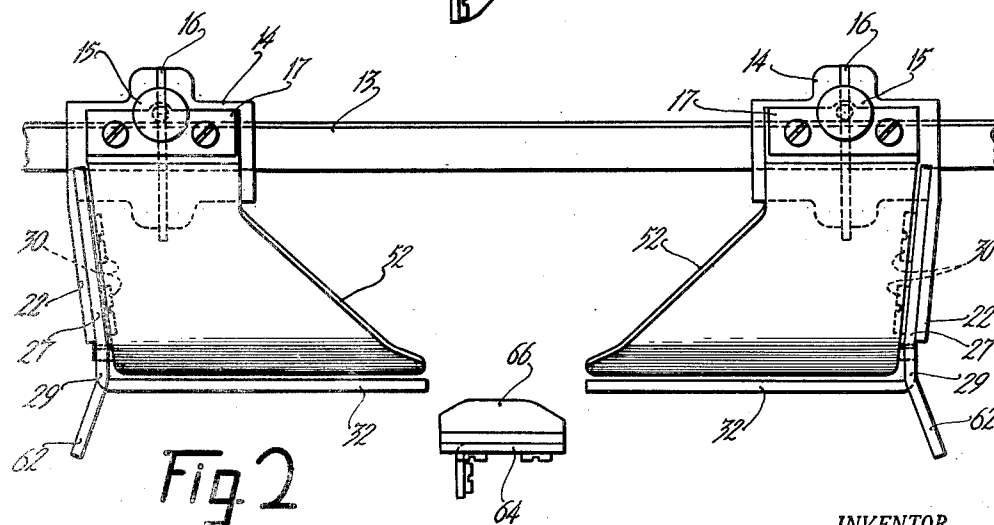
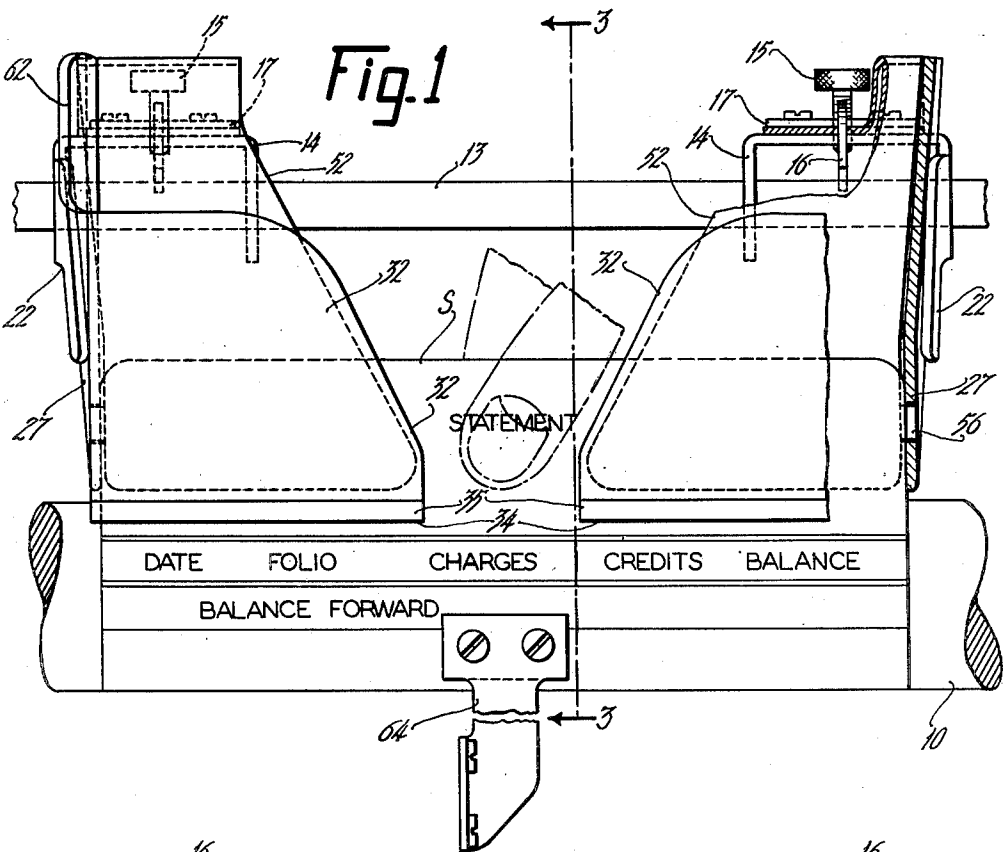
W. A. ANDERSON

2,650,688

PAPER GUIDE FOR ACCOUNTING MACHINES

Filed Nov. 2, 1951

2 Sheets-Sheet 1



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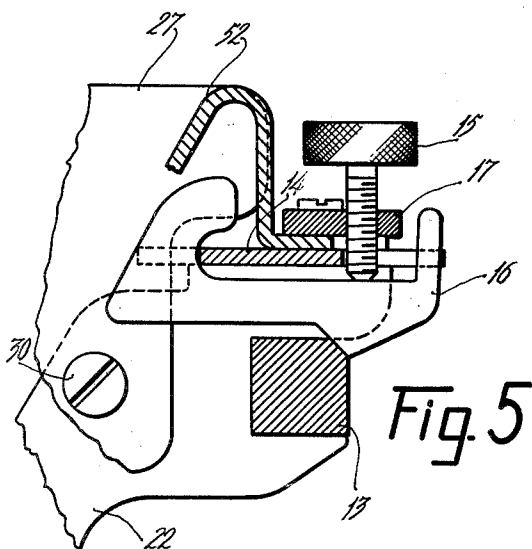
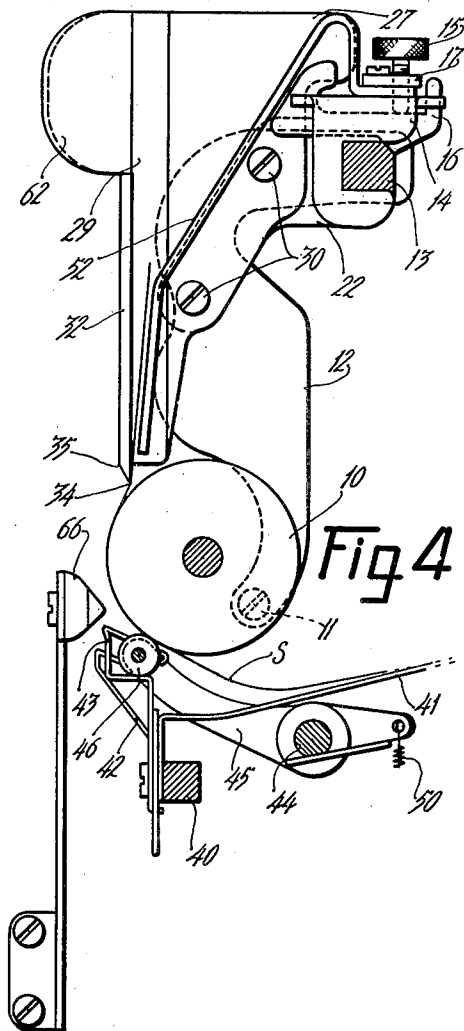
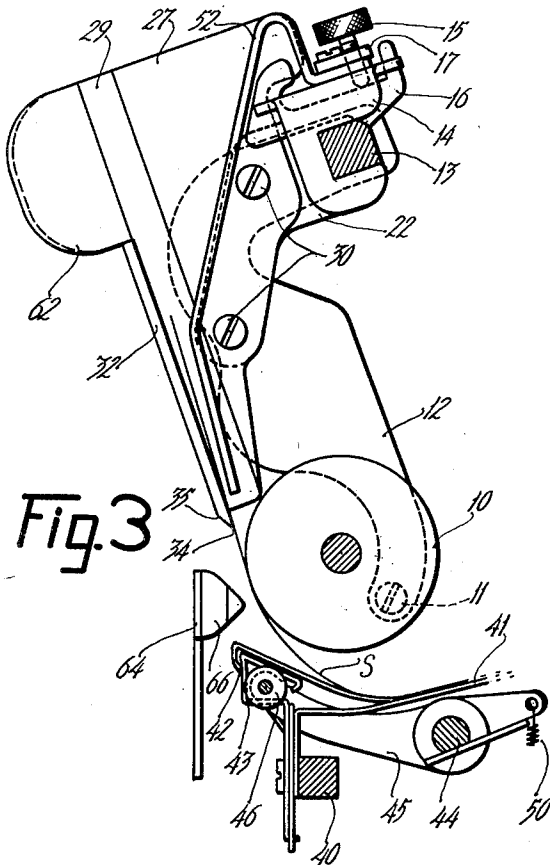
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2,650,688

PAPER GUIDE FOR ACCOUNTING MACHINES

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Application November 2, 1951, Serial No. 254,543

3 Claims. (Cl. 197—127)

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This invention relates to accounting machines having a traveling paper carriage arranged for lateral, column by column, movement thereon, and more particularly to means for guiding and holding in printing position therein, the various types and sizes of work sheets that are commonly used in modern accounting practice.

Modern accounting machine carriages are usually provided with mechanism for guiding and holding a plurality of work sheets which are to be inserted in the carriage in separate locations and held in position for successive printing operations. The work sheets that are used vary substantially in sizes, both in length and width, their sizes ranging from the short forms including checks, pay envelopes, record cards, etc., to the longer forms such as statements, ledger sheets, employees record sheets, etc., all of which may vary substantially in width.

In many instances, there is but a single line posting to be printed on these work sheets, or forms, and it is therefore desirable that they be inserted in front of the platen to facilitate their rapid insertion and removal. Most carriages designed for such front insertion of work sheets have one or more transversely extending rods supporting the paper guiding and holding means which rods usually make it inconvenient for the operator to insert short forms to the depth required, and which may also reduce the visibility of the printing on the work sheets. The paper guiding means of such carriages also have finger openings to accommodate the various work sheets or forms, which limit the lateral adjustability of the paper guiding means, and thereby limit the use of various widths of forms, to the extent that forms having a width extending beyond the structure supporting the paper guiding and holding means require the provision of special equipment adapted to accommodate a specific type of work. Furthermore, the paper guiding means provided in such special equipment are arranged for guiding the work sheets laterally into printing position by means of one edge only thereof, permitting easy rocking and misalignment of the work sheets of the printing line on the platen during their rapid insertion in the carriage. Such structure, in general, tends to permit interference between the bottom edge of the work sheets and the carriage structure, during the vertical movement of all widths of forms into printing position.

One object of the present invention, then, is to provide a front feed guiding and holding mechanism for forms which permits rapid inser-

tion and removal of such forms in correct horizontal alignment, and in such manner that lateral adjustability of the guides to accommodate forms of varying widths is limited only by the capacity of the carriage in which such mechanism is embodied.

Another object of the present invention is to provide a front feed guiding and holding mechanism for forms that enables full and complete visibility of the printings being made on the forms.

Still another object of the present invention is to provide a paper guiding and holding means that directly guides work sheets into the front feed throat of the carriage and locates the side edges of said sheets to thereby facilitate the insertion of the work sheets.

A further object of this invention is to provide a front feed guiding and holding mechanism wherein the work sheets, or forms, are guided laterally by means of both of their side edges into accurate alignment with the printing line on the platen.

A still further object of this invention is to provide a front feed guiding and holding mechanism as above described that guides the work sheets or forms, directly, and without interference from the carriage structure, into printing position during their rapid insertion in the carriage.

Still another object of the present invention is to provide a front feed guiding and holding mechanism which is adjustable for varying widths of work sheets or forms, which is simple in construction, economical to manufacture, easy to assemble in the machine, and dependable in operation.

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

In the drawings:

Figure 1 is a view in front elevation showing the present invention,

Figure 2 is a top plan view,

Figure 3 is a sectional view as seen from the line 3—3, Figure 1, showing the front feed bail and guiding and holding mechanism, and front feed paper rollers, in their open position, with relation to the platen,

Figure 4 is a view similar to Figure 3 showing

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the parts in their closed position, enabling clear and clean printing to be effected on the work sheets, and

Figure 5 is a detail view illustrating the adjustable attachment mechanism for securing the front paper guides to the rail on the carriage.

The invention is exemplified herein in an accounting machine similar to the machine disclosed in U. S. Patent No. 2,194,270 of Oscar J. Sundstrand, and in the U. S. Patents Nos. 2,536,524 and 2,536,525 issued to Walter A. Anderson, January 2, 1951, to which patents reference may be made for an understanding of features of construction not fully described or illustrated herein.

Referring to the drawings, the work sheets S are supported in the machine carriage, not shown, partly around a cylindrical platen 10. Pivoted on screws 11, Figures 3 and 4, on the carriage side plates, not shown, are arms 12 connected by a square bar 13, forming a bail connected with the bail opening mechanism disclosed in the above Anderson Patent No. 2,536,524. Adjustably supported for slidable movement laterally on the bar 13 are brackets 14 slotted to embrace bar 13 and secured in position on said bar by means of a thumb screw 15 and a clamp 16, see Figure 5. The clamp 16 is formed with a pair of upwardly extending ears which pass through a slot in the horizontal arm of bracket 14 to permit vertical movement of the clamp 16 and also with a camming nose on the lower surface to engage a bevelled surface on the bar 13. Screw 15 is threaded in a plate 17 secured to the upper side of bracket 14 and bears on the upper edge of clamp 16 to secure the bracket 14 in set position on bar 13.

Rigidly secured to forward extensions 22, one to the right and one to the left of the brackets 14, are paper guides 27, made from a suitably transparent material. Each of the paper guides 27 is provided with a forwardly extending side that is angularly disposed inwardly toward the companion guide to match the angularly disposed leg 22 of the bracket 14 and is secured thereto by screws 30. The angularly disposed side of guide 27 extending forwardly from the bracket 14, merges into a narrow section 29 that is vertical in the closed position of bail 13 and perpendicular to the platen 10, and extends substantially the full depth of the paper guide as is clearly illustrated in Figures 3 and 4.

Forming part of each guide 27, and at a right angle to the side 29 thereof, is a front plate 32 extending laterally toward the other guide in front of and parallel with the platen 10. To accommodate the various work sheets used in the machine, and to provide a more or less suitable working height level for the machine operator, the front plates 32 extend, when the bail is closed as shown in Figures 1 and 4, from a level near the center of bar 13 downwardly to a line where their lower edge 34, bevelled as at 35 to provide clear visibility, provides a line finding gauge for locating the work sheets vertically with respect to the platen 10, Figure 1, when the sheets are inserted with bail 13 in its open position as shown in Figure 3. The front plates 32 are each cut away on their inner side providing, as they stand in spaced relation on the shaft 13 to accommodate a work sheet, a suitable finger opening, shown in Figure 1, for enabling the quick and easy insertion of the work sheet to the desired depth.

The supporting of the paper guides 27 only at their sides by their attachment to the brackets

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14, combined with the transparency of the material permits full and clear visibility of the items printed on the work sheets to the machine operator.

Fixed in the carriage, not shown, is a bar 40, Figures 3 and 4, supporting a paper table 41 and paper deflectors 42 and 43, and rotatably supported in the carriage is a shaft 44 supporting arms 45 carrying front feed paper rollers 46, the details of construction and mode of operation of this mechanism being described in the above Anderson Patent No. 2,536,524. Normally, with the bail 13 in its closed position, Figure 4, the feed roller arms 45 are tensioned by means of springs 50 to press their rollers 46 against the work sheets and platen 10 to effect feedup of the work sheet. With the movement of the bail to its open Figure 3 position, the feed rollers 46 and paper deflectors 43 are moved by shaft 44 away from the platen 10 forming a throat for front insertion of the work sheets.

The proper insertion of the work sheets is enabled by locating the lower portions between the straight, square sides 29 of the paper guides 27 and forcing it downwardly in front of the platen 10 into the throat wherein its bottom edge is deflected rearwardly by the paper deflectors 42 and 43 onto the paper table 41. In most of the present front feed type carriages, it is more or less difficult to insert very wide work sheets into the throat without interference from the carriage structure, due to buckling of the work sheet. The present invention provides means for preventing buckling of wide work sheets and for permitting movement of the work sheet directly into the throat without interference from associated parts. For this purpose, a paper guide rear plate 52 is firmly secured to each of the brackets 14 under clamps 17. The rear plate 52 extends downwardly between the platen 10 and the paper guide front plate 32 to a position slightly above the lower edge 34 of the paper front plate 32, and its lower portion extends laterally substantially the width of the front plate 32. The lower edge of the rear plate 52 is positioned so as to form a narrow slot through which the paper may be fed, without buckling, into the throat in which position plate 52 is held by means of a lug 56, Figure 1, in a slot in the side plate of the guide 27. Extending upwardly from its bottom edge, the rear plate 52 follows substantially the contour of the paper guide front plate 32 providing a suitable rear support for the work sheet.

In order to obtain a maximum degree of accuracy of alignment of the work sheet S with the printing line on the platen 10, the straight square sides 29 of the paper guides 27 are usually positioned in as close proximity to the edge of the work sheet as is practical, while leaving the work sheet freely movable vertically therebetween. It therefore follows that, due to such narrow clearance, to obtain a maximum of speed in work sheet insertion and machine operation, it is necessary to laterally guide the work sheet S into position between the paper guides 27.

The paper guides 27 are therefore provided with a section for bringing the work sheet laterally into position between the sections 29 of the guides. For such adjustment the rear portions of the sides of guides 27 are angled outwardly to widen the rear of the opening, thus laterally moving a sheet into the space between the straight sides 29 of the guides as the sheet S is inserted between the front plate 32 and the rear plate 52. Projecting from the straight, square

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portion 29 of each of the paper guides 27 is an ear extending forwardly therefrom, above the top edge of front plate 32 to substantially the same height as the rear plate 52. The ear 62 is formed at an angle extending outwardly from the side 29 of the guide 27 so that, in the combination of the right and left paper guides 27, the ears 62 form a chute of a substantially greater width at the outer extremity than that which exists between the sides 29 of the paper guides 27 when they are positioned to accommodate a desired width of work sheet.

These ears 62 form a substantially horizontally converging chute to guide a work sheet S laterally into position between the guides 27 without requiring precise movement by the operator who passes a sheet rearwardly between the guides 27 until the bottom of the sheet snaps over the top edge of front plate 32 into the chute. The sheet S is then moved downwardly into the front feed throat, the forwardly converging rear walls of the guides precisely centering the sheet between the straight sections 29. The sheet is released at the correct depth of insertion and due to resilience of the sheet, it assumes the position of Figure 3 wherein it is guided at both edges for horizontal alignment. The angularity of the inner edges of the front sections 32 permits the sheets to be inserted to a depth enabling printing close to the top edge, the wide opening permitting entry of the operator's hand as shown in Figure 1, without sacrificing any of the aligning features of the guide.

When work sheets having a width greater than approximately eight inches are used, it becomes necessary to spread the paper guides 27 to positions on the shaft 13 where a substantial gap exists between the inner edges of the paper guide front plates 32. In such a case, the wider work sheet tends to buckle in the area between the paper guides, and strike the carriage structure as the sheet is inserted into printing position. Therefore, to enable the use of wider work sheets, a paper deflector 64 is firmly secured to the machine case, not shown, and so positioned as to be near the center of the opening between chutes 27 at the position of the carriage wherein the work sheet is to be inserted. The deflector 64 comprises an upstanding leg carrying a block 66 that is parallel with the platen 16. Block 66 has an upper bevelled face which guides a buckled portion of the lower edge of the work sheet into the carriage throat and is also bevelled at the side corners to prevent the catching of the work sheet thereon during the lateral movement of the carriage.

The above description of a preferred embodiment of my invention is not to be taken in a limiting sense as substantial changes are possible without departure from the features of the invention as defined in the following claims.

What is claimed is:

1. In an accounting machine of the class described having a work sheet supporting carriage, a platen in said carriage and feed rolls forming therewith a throat for front insertion of a work sheet, the combination of a paper guide support extending parallel to said platen, a pair of paper guides mounted thereon for guiding a work sheet

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into said throat, said guides being oppositely formed, each guide comprising a bracket adjustably secured to said support, a member forming a chute secured to an outer side of said bracket, and extending first inwardly toward the other guide at a slight angle, then having a narrow perpendicular face parallel to the corresponding face of the other guide and formed at its forward end with a front plate parallel to said platen and approximately tangent thereto and with an ear at the upper edge divergent from said other guide, and a rear plate fixed to said bracket to form with said member a converging chute.

2. In an accounting machine of the class described having a work sheet supporting carriage, a platen in said carriage and feed rolls forming therewith a throat for front insertion of a work sheet, the combination of a paper guide support extending parallel to said platen, a pair of paper guides mounted thereon for guiding a work sheet into said throat, said guides being formed as mirror images of each other and positioned on said support to enable guided passage of a work sheet between said guides, each guide comprising a bracket adjustably secured to said support, a member secured to an outer extension of said bracket, said member formed with a front plate substantially parallel to and tangent to said platen, a work sheet edge guiding portion perpendicular to said front plate and extending rearwardly therefrom, a divergent section from said edge guiding portion to said bracket to lead a work sheet into said edge guiding portion, and a diverging ear above said front plate to guide a sheet edge to the inside of said pair of paper guides, a rear plate fixed to said bracket to insure forward movement of the lower edge of a work sheet to between said edge guiding portions during insertion of a sheet between said guides and into said throat and a stationary member positioned between said guides when a sheet is to be inserted therebetween to engage a free center of said sheet and direct it into said throat.

3. In an accounting machine of the class described having a carriage, a platen in said carriage and feed rolls cooperative with said platen to form a throat for insertion of a work sheet in front of said platen, the combination of a paper guide supporting ball, and a pair of paper guides mounted thereon to guide a work sheet into said throat, said guides comprising front and rear sections converging into a narrow parallel sided aperture so positioned as to direct a work sheet into said throat, side walls to the rear of the parallel sides of said aperture and converging from a wide opening at the upper rear to the width of said aperture at the front to laterally position a sheet during its insertion into said aperture, and a pair of diverging ears in front of said parallel sides to guide the sides of a sheet passing between them into the space between said guides.

W. A. ANDERSON.

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Number	Name	Date
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