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PAPER GUIDE FOR ACCOUNTING MACHINES

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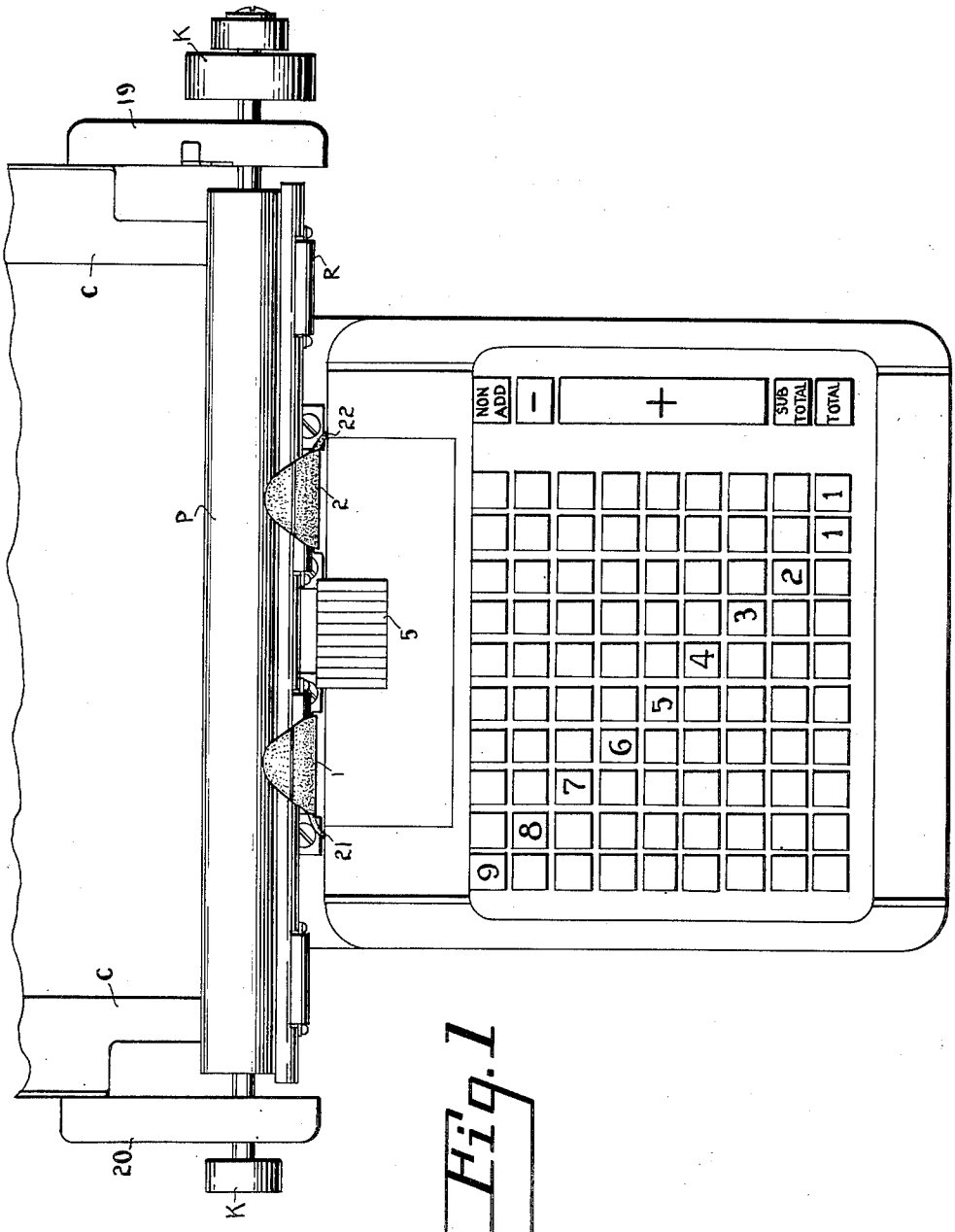


Fig. 1

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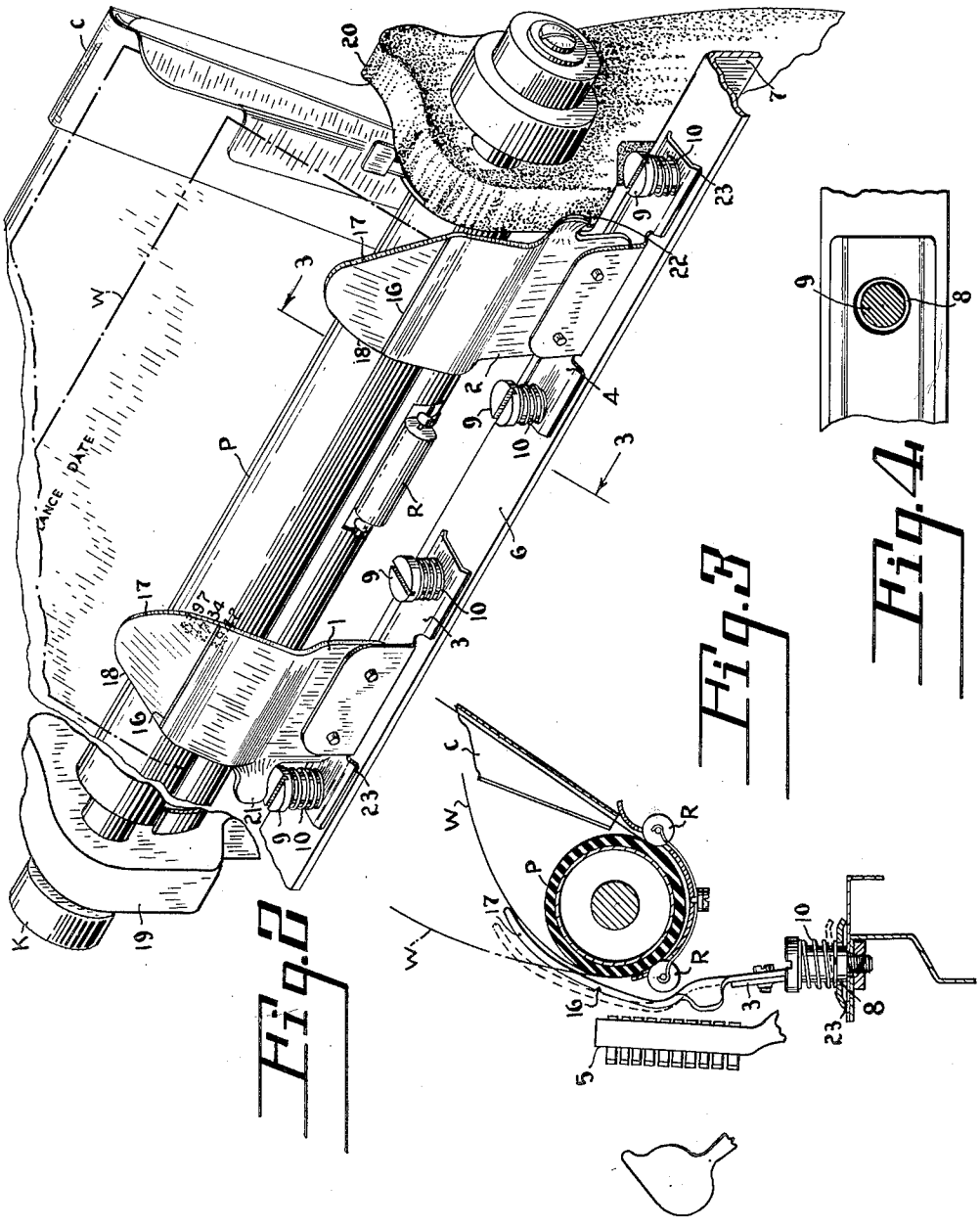


Fig. 2

Fig. 4

Fig. 3

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PAPER GUIDE FOR ACCOUNTING MACHINES

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3 Claims. (Cl. 197—127)

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This invention relates to printing tabulating means for accounting machines and the like and, more particularly, to an improved combination line finder and work sheet guide for collating work sheets upon the printing platen supported in the shiftable paper carriage of such machines having their printing devices supported within the stationary portion of the machine.

In machines of this character, line spacing guides for assisting an operator in properly positioning a work sheet to the desired printing line are well known in the art. It has been the usual practice, however, to support paper guide line finding devices in the left and right end plates of the shiftable carriage. Thus, said devices extend along the full length of the platen, which not only increases the weight of the carriage but also obscures much of the work sheet. The present invention contemplates the provision of an improved combination line finder and work sheet guide, easily attached to or removed from the stationary portion of the machine and providing an improved view of the work sheet. The invention further provides a plurality of mutually cooperable work sheet guides that are independently adjustable. Novel means are provided for automatically adjusting the work sheet guides whereby full capacity of the printing platen for column spacing is obtained.

Other advantages of the invention will appear from the specification and drawings.

The invention consists in the novel construction and combination of parts as defined in the appended claims, one embodiment thereof being set forth in the specification and drawings in which:

Fig. 1 is a diagrammatic plan view of a machine embodying the invention,

Fig. 2 is a fragmentary perspective view of the platen carriage and rear support frame of the machine showing the collating guides,

Fig. 3 is a right hand sectional view taken substantially on line 3—3 of Fig. 2, and

Fig. 4 is an enlarged fragmentary view showing the means for securing the guides to the machine.

The invention herein disclosed is applicable to well known business machines such, for instance, as the Monroe adding-listing machine disclosed in Patent No. 2,323,205, issued on June 29, 1943, to Loring P. Crosman, employing a shiftable platen carriage for supporting paper sheets including a work sheet. In machines of this type a work sheet W may be inserted into the machine between the usual adjustable right and left end guide chutes C and is guided around the platen

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P and between pressure rolls R upon rotation of said platen, which may be rotated by the usual twirler knobs K in well-known manner.

The novel line finder and paper guide device of the present invention as illustrated in the drawings comprises a pair of transparent plastic fingers 1—2, each suitably secured to separate brackets 3—4. Said fingers are located one on each side of the usual printing type members 5 supported from the stationary base of the machine (Fig. 1) and are mounted upon a flange 6 of the stationary member or rear framing 7 of the machine. The fingers 1 and 2 are supported in such a manner as to permit rocking of said fingers, each independently of the other, as follows: Brackets 3—4 are provided with suitable openings 8, adapted for loosely admitting the lengthened shank portion of screw bolts 9, secured to the flange 6 of rear frame 7. That is, the shank portions of screw bolts 9 are made smaller in diameter than the openings 8 of brackets 3—4 to provide for a slight clearance between said bolts and the related walls of said openings in the brackets to permit relative movement between the brackets and bolts. Mounted upon bolts 9 between the head portions thereof and the top side of brackets 3—4 are compression springs 10 serving to force brackets 3—4 against the flange 6, thereby holding fingers 1—2 in the position relative to the platen P as illustrated by the solid lines of Fig. 3.

Fingers 1—2 are formed with the upper portion thereof arched upwardly and rearwardly and positioned relative to platen P in such a manner as to be engaged by the work sheet W as it is fed around platen P and serve to guide and hold the work sheet backwardly against the platen, as illustrated in Fig. 3. A scoring mark 16 is cut laterally across each of the fingers 1—2 in position to indicate the printing line of the type printing devices 5. Said scored line 16 is clearly visible to the operator and serves as a line finder for indicating the position with reference to which the work sheet is to be brought. If it is desired to print a value on the same line as a previous entry but in some other columnar position, an operator will adjust the work sheet until the top of the last entry is immediately below the scored mark 16. To print on a succeeding line to the last line of an entry, however, the work sheet is fed until the bottom edge of the last entry is just above the scored mark.

In machines wherein work sheet collating guides are supported within the framing of a shiftable carriage, it is customary to use the

top or bottom edge of said guides as indicating the line to which a work sheet is to be brought for proper printing position. Under such conditions, the collating guide obscures entries previously printed upon the work sheet unless and until the platen is rotated sufficiently to bring said entries into view from the position as hidden by the guide. By removing the collating guide from the shiftable carriage to the stationary structure of the machine it has been possible to greatly reduce the length and size of said guides, as is apparent from fingers 1—2 of the drawings. Thus, considerable area of the work sheet, both above and below the printing line indicator mark, is now viisble, thereby materially assisting an operator in selecting and bringing from either direction a previously printed entry into proper position relative to the printing position of a new entry. Reduction of length and size of said guides also provides more accessibility for manually adjusting, if need be, a work sheet parallel to the platen P, suitable well known means, not shown, being provided for releasing the pressure rolls R during said adjustment. Also, work sheets are less apt to become jammed and creased while being inserted around platen P. As earlier set forth, fingers 1—2 may also be constructed of a transparent material, such as plastic, to further improve visibility.

In the machine herein illustrated guide chutes C are adjustable laterally for permitting entries upon work sheets of varying widths. It may occur, therefore, that during transverse shifting of the platen carriage the left or right edge of a work sheet may be carried at certain times beyond engagement with the fingers 1—2, either to the right or left thereof, in which case one edge of the work sheet, in being released from a finger 1 or 2, is apt to move slightly forward away from the platen P. Means are therefore provided for automatically returning the work sheet to a position rearward of said fingers during a shifting movement of the carriage in which a disengaged edge reengages the finger 1 or 2. As clearly shown in Figs. 1 and 2 of the drawings, the right and left sides of the upper portions of fingers 1—2 respectively are cut away to form converging cam edges 17—18. During a transverse movement of the carriage, the leading edge of the work sheet W is adapted to engage the cam edges 17 in a leftward direction of movement of the carriage as illustrated by the dotted lines of Fig. 3, or cam edges 18 in a rightward direction of movement thereof, whereupon the work sheet is cammed to the rear, i. e., backwardly toward platen P and subsequently passes through to the rear of said fingers. Since it is desirable that the fingers 1—2 be in close proximity to the platen P, as shown in Fig. 3, the end plates 19—20 of the carriage and possibly control devices mounted thereon, such as twirler knobs K, normally would interfere with said fingers and limit the extent to which the platen carriage may be shifted. So that the platen carriage may be shifted to the full capacity of columnar positions permitted by the platen P without interference with fingers 1 and 2, the latter are yieldably mounted for a rocking movement independently of each other in the manner as previously set forth, i. e., against the restraining action of springs 13, and are automatically adjusted or rocked in the following manner:

Guide finger 1 is provided on the left edge thereof with a projection 21, and finger 2 is provided on its right edge with a similar projection

22. Projections 21 and 22 are each bent forwardly and in such a manner that the rearward faces thereof form a camming surface relative to the end plates 19—20 respectively of the platen carriage. Near the end of a rightward shift of the carriage, the end plate 19 thereof will contact cam projection 21 and rock finger 1 with its bracket 3 forwardly (to the position illustrated by the dotted lines of Fig. 3) about the forward edge 23 of said bracket, as guided by the screw bolts 9, permitting plate 19 to pass to the rear of said finger. In like manner, end plate 20, during a movement of the carriage toward the left, will engage cam projection 22 and rock finger 2 with its bracket 4 forwardly and permit plate 20 to pass to the rear of said finger. It is to be noted that during the above described forward displacement of finger 1, finger 2 will remain effective to hold the work sheet 11 rearward toward platen P and while finger 2 is rocked forwardly, finger 1 will remain in active position for holding the work sheet.

Having now described a preferred embodiment of my invention for line finding paper guide devices which are mounted in the non-shiftable base portion of an accounting machine and adapted for adjustment by the adjustable platen carriage to provide full use of the printing platen for column printing, what I claim is:

1. In printing tabulating means for accounting machines, the combination of a stationary member, printing devices, and a shiftable carriage having a platen mounted therein, with a plurality of cooperating spaced paper guides mounted on said stationary member each having converging cam edges arched away from the plane of said guides and mutually cooperable with said platen to guide and hold a work sheet in printing relation thereto, yieldable means securing said guides to said stationary member whereby the guides may move relatively to said carriage, a cam member on each of said guides comprising a forwardly bent lateral projection on the left edge below the guiding cam edge of one of said guides and a corresponding projection on the right edge below the guiding cam edge of another of said guides, and means on said carriage cooperable with said cam members for adjusting said guides to and away from said carriage each independently of the other.

2. In printing tabulating means for accounting machines, the combination of a stationary member, printing devices, and a shiftable carriage having a platen mounted therein, with cooperating spaced paper guides mounted on said stationary member and mutually cooperable with said platen and adapted to hold a work sheet in printing relation thereto, and yieldable means securing said guides to said stationary member whereby said guides may move relatively to said carriage; wherein the means for yieldably securing each paper guide to the stationary member includes at least one screw bolt provided with a lengthened shank terminating in a threaded end engaging said stationary member, a base for each guide having at least one opening therein, said opening being of slightly larger diameter and encompassing the shank of said bolt, and a spring mounted around the shank of said bolt between the head end thereof and the top surface of said guide base.

3. In printing tabulating means for accounting machines, the combination of a stationary member, printing devices, and a shiftable carriage having a platen mounted therein, with co-

operating spaced paper guides mounted on said stationary member and mutually cooperable with said platen and adapted to hold a work sheet in printing relation thereto, and yieldable means securing said guides to said stationary member whereby said guides may move relatively to said carriage; wherein the means for yieldably securing each paper guide to the stationary member includes a plurality of screw bolts each provided with a lengthened shank terminating in a threaded end engaging said stationary member, a base for each guide having a plurality of openings therein, said openings being of slightly larger diameter and encompassing the shanks of said bolts, and a compression spring mounted around the shank of each bolt between the head

end thereof and the top surface of said guide base.

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