Feb. 22, 1949. E. H. METCALF 2,462,273

COPY HOLDER

Filed July 6, 1945 2 Sheets-Sheet 1

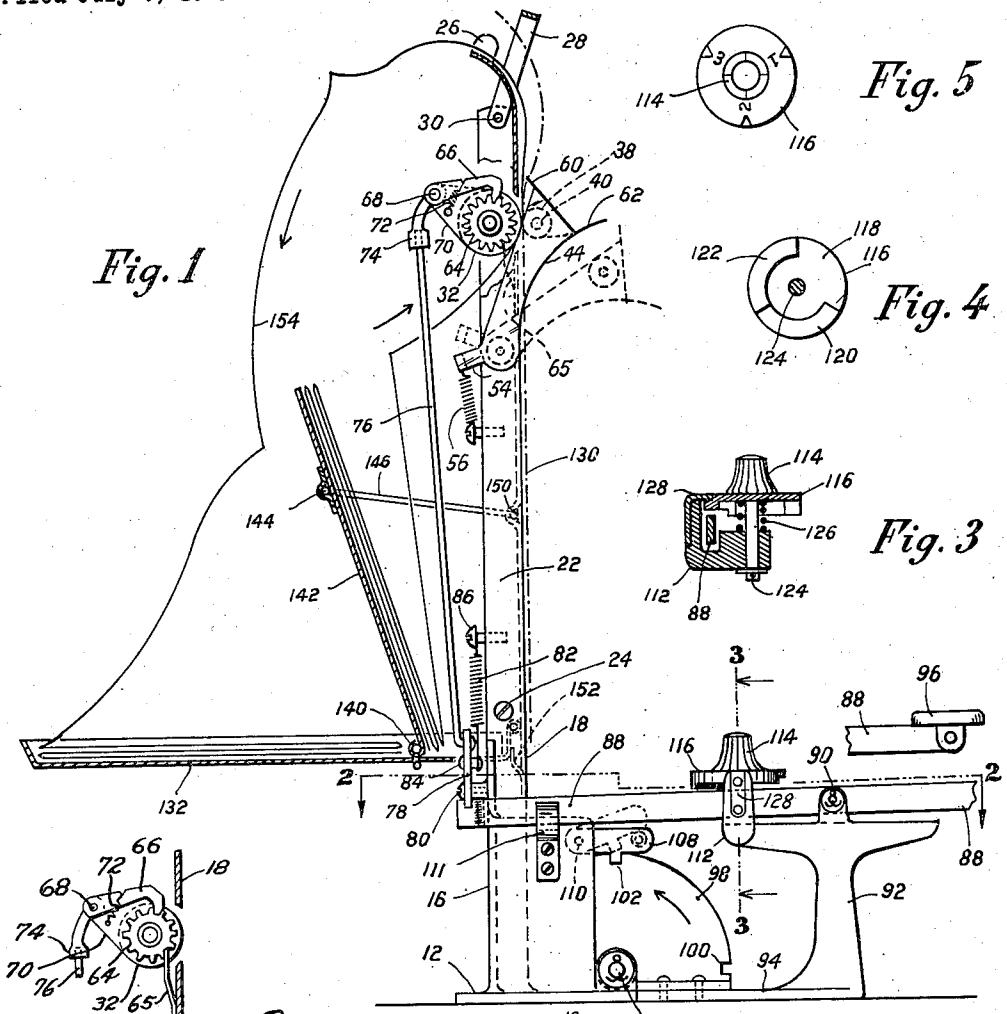

Fig. 1

Fig. 5

Fig. 4

Fig. 3

Fig. 1a.

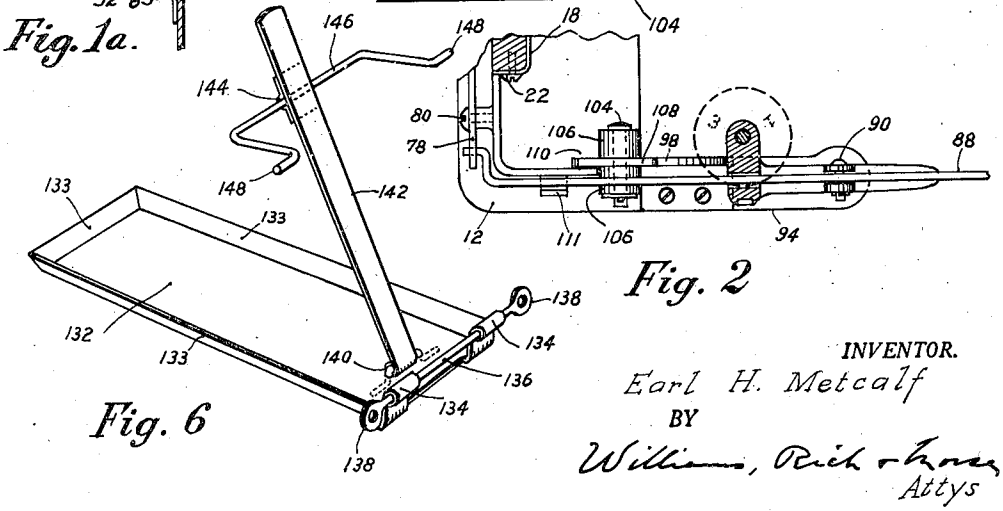

Fig. 2

Fig. 6

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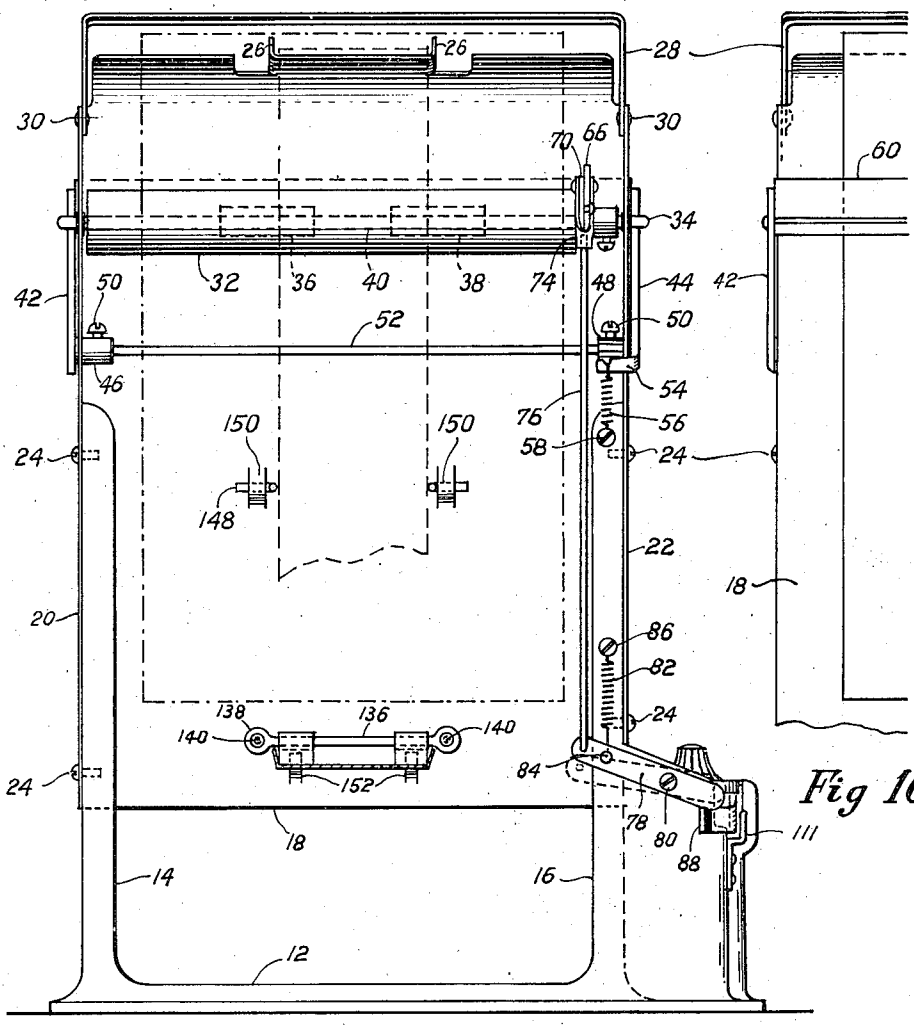

Fig 10

Fig. 9

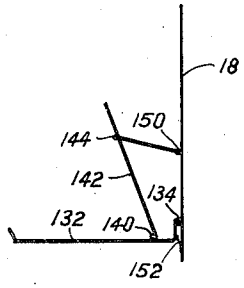

Fig. 7

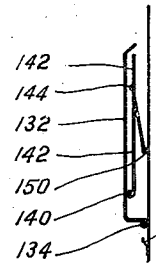

Fig. 8

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UNITED STATES PATENT OFFICE

2,462,273

COPYHOLDER

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Application July 6, 1945, Serial No. 603,419

6 Claims. (Cl. 120—32)

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This invention relates to copy holders of the type having a stationary backing plate, a line indicator cooperative therewith and means for moving the paper to be copied upwardly over the surface of said backing plate and past the line indicator.

A general object of the invention is to provide a new and improved copy holder which will handle not only sheets of paper but also a folded-paper-ribbon. Subsidiary objects of the invention are to provide a copy holder of this kind which may be readily collapsed when not in use. Other subsidiary objects are to provide a copy holder of this kind with new and improved means for feeding the copy, whether it is in the form of a paper sheet or a folded-paper-ribbon, by feeding steps which may be of various lengths.

With these and other objects in view, the invention comprises the novel features and combination of parts hereinafter described and shown in the accompanying drawings in which Fig. 1 is a side elevation of the device; Fig. 1*a* is a fragmentary elevation of a portion of Fig. 1; Fig. 2 is a fragmentary sectional view on the line 2—2 of Fig. 1 looking in the direction indicated by the arrows; Fig. 3 is a sectional elevation on the line 3—3 of Fig. 1, showing the means for varying the length of the paper feeding step; Fig. 4 is a bottom plan view of the button of the device shown in Fig. 3; Fig. 5 is a top plan view of said button; Fig. 6 is a perspective view of the part of the device which is the folded-paper-ribbon holder; Figs. 7 and 8 are diagrammatic views of the folded-paper-ribbon holder shown in Fig. 6 in its extended and in its folded positions; Fig. 9 is a rear elevation of the device; and Fig. 10 is a fragmentary front elevation of one edge of the upper part of the device.

Referring particularly to Figs. 1, 2 and 9, the device is shown as having a base 12 having upwardly extending side members 14 and 16 to which is secured a stationary backing plate 18 having side lips 20 and 22 which are secured to the upwardly extending side members 14 and 16 by screws 24. It will be noted that the backing plate 18 at its top edge is curved rearwardly and is provided with forwardly extending ears 26, as shown at the tops of Figs. 1 and 9. These lips 26 serve as guides for the folded-paper-ribbon, as will be hereinafter described. It will also be noted that the backing plate is provided near its top with a U-shaped guide member 28 pivotally connected at 30 to the lips 20 and 22 of the backing plate 18. This guide member 28 serves to insure that the paper sheets or the folded-paper-ribbon will move backwardly over the top of the guide plate when the device is in use.

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It will also be noted that the backing plate 18 is provided near its top portion with an opening into which extends a feed roller 32, preferably rubber covered, which has a shaft 34 journaled in the lips 20 and 22 of the backing plate. The feed roller 32 projects through the opening in the backing plate 18 slightly beyond the front surface thereof and cooperates with rollers 36 and 38 preferably of rubber which are freely rotatable upon a shaft 40. The shaft 40 is secured at its ends to levers 42 and 44, the lower ends of which carry hubs 46 and 48 which are journaled in the lips 20 and 22 of the backing plate 18, and the hubs 46 and 48 are rigidly attached by set screws 50 to the ends of a shaft 52. Extending from the lever 44 is a lug 54 to which is attached a coil spring 56 secured at its lower end to a post 58 extending from the frame member 16. This spring 56 obviously serves to yieldingly hold the rollers 36 and 38 in engagement with the feed roller 32. Besides carrying the shaft 40 upon which the rollers 36 and 38 are mounted, the levers 42 and 44 carry a line indicator 60 the upper edge of which extends horizontally and parallel to and spaced a slight distance from the front surface of the backing plate 18. As shown in Fig. 1, the lever 44 is provided with a projection 62 adapted to be engaged by the finger of the user when the user desires to swing the rollers 36 and 38 and the line indicator 60 forwardly during the threading of a sheet of paper or a folded-paper-ribbon into the device.

The means for effecting step-by-step rotation of the feed roller 32 will now be described. As shown in Figs. 1 and 1*a* the shaft 34 of the feed roller 32 has rigidly secured thereto a ratchet wheel 64. This ratchet wheel 64 is engaged by a holding pawl 65 and by an actuating pawl 66 which is pivotally connected at 68 to a lever 70 pivotally mounted on the shaft 34. The pawl 66 is yieldingly held in the position shown in Fig. 1 by a coil spring 72 connected at one end to the pawl 66 and at the other end to the lever 70. Pivotally connected at 68 to the lever 70 is a fitting 74 secured to the upper end of a downwardly extending rod 76. This rod 76 is pivotally connected at its lower end to a lever 78 which is pivotally mounted at 80 on the base portion of the machine. The lever 78 is biased to the position shown in Figs. 1 and 9 by the spring 82 which at its lower end is connected at 84 to the lever 78 and at its upper end is connected to a pin 86 secured to the side member 16. The right hand

end of the lever 78 (as viewed in Fig. 9), is engaged by a manually operable lever 88 (see Fig. 1) which is pivotally mounted at 90 in an upwardly extending portion 92 of an auxiliary base member 94. As shown in Fig. 1, the lever 88 is provided at its end with a finger piece 96 by which the outer end of the lever 88 may be depressed by the finger of the user of the device. The auxiliary base member 94 carries a segment 98 provided with notches 100 and 102, and the segment 98 is journaled on a stub shaft 104 mounted in two lugs 106 extending upwardly from the base member 12. Thus the segment 98 and the auxiliary base member 94 having the extending portion 92 are pivotally mounted on a transverse horizontal axis on the stub shaft 104. The notches 100 and 102 in the segment 98 are adapted to be engaged by a latch 108 pivotally mounted on the main frame 12 of the machine at 110 as shown in Fig. 1, said latch being gravity actuated. As shown in Fig. 1, the latch 108 is engaging the notch 102 in the segment 98, and the auxiliary base member 94 is in the extended position in which it must be when the device is in use.

When the outer end of the lever 88 carrying the finger piece 96 is depressed, it causes the rotation of the feed roller 32 through the medium of the lever 78, rod 76 carrying the fitting 74, pawl 66 and ratchet wheel 64, as will be obvious from Figs. 1 and 9; and when pressure on the finger piece 96 is released, the lever 88 and the parts which transmit its motion to the feed roller 32 are restored to their normal positions by the spring 82. A guide 111, attached to the base of the device, cooperates with the lever 88 and confines the latter to its proper path of movement. Since it is desirable that the feeding of the paper by movement of the feed roller 32 be regulatable as to extent, means is provided for so limiting the movement of the lever 88 that the extent of the rotation of the feed roller 32 will correspond to 1, 2 or 3 teeth of the ratchet wheel 64. That limiting means is shown in Figs. 1 to 5. It will be evident from those figures that the lever 88 moves within a space defined at its bottom and on its sides by a rearwardly extending part 112 of the upwardly extending portion 92 of the auxiliary base member 94, and defined at its top by a rotatable button having an upwardly extending knurled portion 114 and a base portion 116. As shown in Figs. 3 and 4, the said base portion 116 is provided on its bottom with three step formations, 118, 120 and 122, each of which extends over the lever 88 according to the position at which the rotatable button is set. As shown in Fig. 3, the rotatable button is secured to a pin 124 which is slidably and rotatably mounted in the frame part 112, a spring 126 being arranged as shown in Fig. 3 to yieldingly hold the button in its upper position. As will be obvious from Figs. 3 and 5, the top of the base portion 116 is provided with three notches (shown in Fig. 5 adjacent the indices 1, 2 and 3) which cooperate with a finger 128 carried by the member 112. It will be understood that when the button is depressed against the force exerted by the spring 126, the button may be rotated so as to bring any one of its three notches in alignment with the finger 128. Thus the button may be set with any one of its three step formations 118, 120 and 122 above the lever 88, thereby controlling the extent of the paper-feeding movement of the lever 88 and the extent to which the feeding roller 32 is rotated.

In Fig. 1, a sheet of paper which has been inserted in the device between the feed roller 32 and the cooperating rollers 36 and 38, is indicated in dash and dot lines at 130. It will be understood that the insertion of such a sheet of paper is easily accomplished by applying a finger to the projection 62 and swinging the rollers 36 and 38 and the line indicator 60 forwardly against the tension of the spring 56. Feeding of the paper upwardly is accomplished by depressing the lever 88, and the rate of feeding at each depression of the lever 88 is determined by the setting of the rotatable button having a knurled portion 114, as hereinbefore described.

The means whereby the device is made capable of handling a folded-paper-ribbon will now be described. This means is best shown in Figs. 1 and 6; and Figs. 7 and 8 show in a diagrammatic way the folded-paper-ribbon supporting means in its active and inactive positions. As illustrated, this folded-paper-ribbon supporting means is hingedly attached to the rear side of the backing plate 18 and comprises a shelf 132 having turned up edges 133 and lugs 134 which surround and are rotatable on a pin 135 having at each end eyes 138 adapted to receive rivets 140 which pass through the backing plate 18. Pivotally attached at 140 to the shelf 132 is a bar 142 which extends upwardly and rearwardly as shown in Figs. 1 and 6 and is pivotally connected at 144 to a U-shaped member 146 having outwardly extending ends 148 which pivotally engage lugs 150 extending from the rear surfaces of the backing plate 18, as shown in Figs. 1, 6 and 9. Lugs 152 (Fig. 9) which may be secured to or punched out from the backing plate 18 engage the shelf 132 at its end below the lugs 134, and prevent the shelf 132 from dropping below the horizontal position shown in Fig. 1. Fig. 1 shows at 154 a folded-paper-ribbon threaded into the copy holder, and the arrows adjacent the ribbon 154 show the direction in which the ribbon travels during periodic rotation of the feed roller 32 in the manner hereinbefore described. It will be noted that the folded-paper-ribbon 154 is guided in its travel by the ears 26 at the top of the backing plate, and that as the ribbon 154 is drawn from the inclined position in which it rests against the bar 142, it drops down behind the bar 142 and folds itself into a neat pile on the shelf 132. Thus a folded pile of ribbon-paper may be inserted in the machine and, after being fed through it, may be removed in its folded condition.

From Figs. 7 and 8, it will be apparent how the means for holding the folded-paper-ribbon may be collapsed from its functioning position shown in Fig. 7 to its non-functioning position shown in Fig. 8. It will also be obvious from the foregoing description that the auxiliary base 94 and all of the parts carried by it, including the actuating lever and the adjustable button mechanism, may be folded from the position shown in Fig. 1 (with the latch 108 engaging the notch 102 in the segment 98) to a position in which the latch 108 engages the notch 100. Thus it is apparent that those portions of the device which project considerably rearwardly and forwardly from the backing plate 18 and the base 12 may be collapsed so that shipping and storing of the copy holder are facilitated.

What is claimed is:

1. A copy holder comprising a main base portion; a stationary backing plate having an opening therein supported by said base portion; an auxiliary base portion pivotably attached on a transverse horizontal axis to said main base portion; means for locking said auxiliary base portion either projecting forwardly in alignment

with said main base portion or projecting upwardly at substantially a right angle thereto; a line indicator pivotally supported with reference to said backing plate adjacent the opening therein; means for effecting step-by-step upward feeding of a paper between said backing plate and said line indicator including a manually operable lever pivotally mounted on said auxiliary base portion; manually adjustable means carried by said auxiliary base portion and cooperating with said lever for limiting the actuating movement thereof; and collapsible means attached to and extending rearwardly from the back of said backing plate for supplying to and receiving from said paper-feeding means a folded-paper-ribbon.

2. A copy holder according to claim 1, in which the means for locking said auxiliary base portion either in alignment with said main base portion or at substantially a right angle thereto comprises a notched segment carried by said auxiliary base portion, and a latch carried by said main base portion and cooperating with said notched segment.

3. A copy holder according to claim 1, in which the means for effecting step-by-step upward feeding of a paper between said backing plate and said line indicator includes a roller rotatably supported with reference to said backing plate adjacent the opening therein, a roller carried by said line indicator and cooperating with said feed roller, a pawl and ratchet mechanism cooperating with said feed roller, and means operatively connecting the manually operable lever with said ratchet mechanism.

4. A copy holder according to claim 1, in which the manually adjustable means carried by said auxiliary base portion and cooperating with said lever for limiting the actuating movement thereof comprises a rotatable button supported by said auxiliary base portion and provided with step formations any one of which is adapted to cooperate with said lever and limit movement thereof.

5. A copy holder according to claim 1, in which the collapsible means supported behind said backing plate for supplying to and receiving from said paper feeding means a folded-paper-ribbon comprising a shelf pivotally mounted at the rear of said backing plate, a bar pivotally attached to said shelf, and a U-shaped member pivotally mounted at the rear of said backing plate and pivotally attached to said bar.

6. A copy holder comprising a main base portion a stationary backing plate having an opening therein supported by said base portion; an auxiliary base portion pivotally attached to and projecting forwardly from said main base portion; means for locking said auxiliary base portion either in alignment with said main base portion or at substantially a right angle thereto comprising a notched segment carried by said auxiliary base portion, and a latch carried by said main base portion and cooperating with said notched segment; a line indicator pivotally supported with reference to said backing plate adjacent the opening therein; means for effecting step-by-step upward feeding of a paper between said backing plate and said line indicator comprising a roller rotatably supported with reference to said backing plate adjacent the opening therein, a roller carried by said line indicator and cooperating with said feed roller, a pawl and ratchet mechanism cooperating with said feed roller, a manually operable lever pivotally mounted on said auxiliary base portion, and means operatively connecting said lever with said ratchet mechanism; means for limiting the actuating movement of said lever comprising a rotatable button supported by said auxiliary base portion and provided with step formations any one of which is adapted to cooperate with said lever and limit the movement thereof; and collapsible means for supplying to and receiving from said paper-feeding means a folded-paper-ribbon comprising a shelf pivotally mounted at the rear of said backing plate, a bar pivotally attached to said shelf, and a U-shaped member pivotally mounted at the rear of said backing plate and pivotally attached to said bar.

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