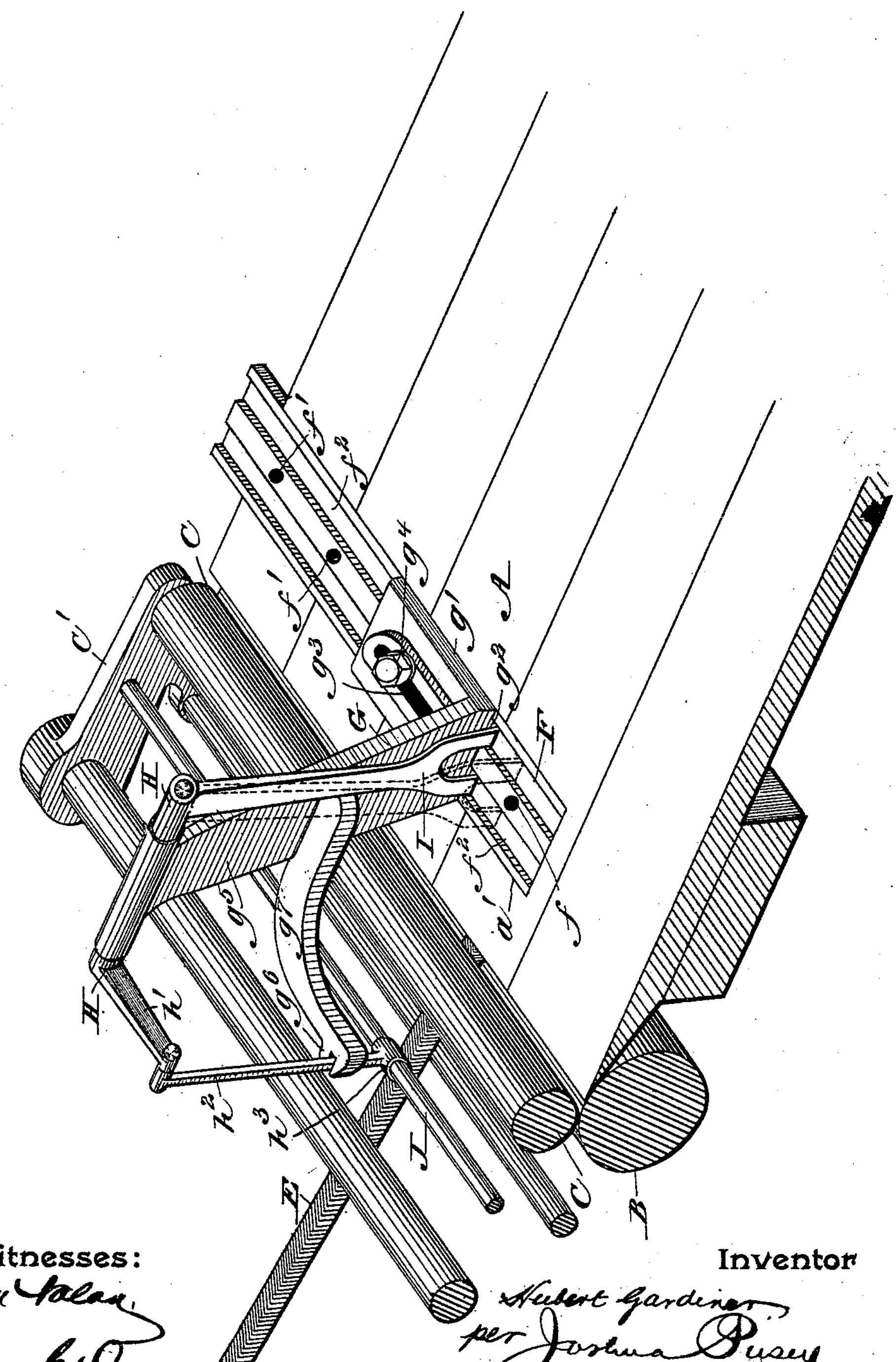
(No Model.)

H. GARDINER.

SIDE GUIDE FOR PAPER FOLDING MACHINES.

No. 438,804. Patented Oct. 21, 1890.



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SIDE GUIDE FOR PAPER-FOLDING MACHINES.

SPECIFICATION forming part of Letters Patent No. 438,804, dated October 21, 1890.

Application filed May 14, 1889. Serial No. 310,775. (No model.)

To all whom it may concern:

Be it known that I, HUBERT GARDINER, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Side Guides for Paper-Folding Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, which is a perspective view of the invention as applied to the well-known Chambers newspaper-folding machine, only so much of the latter being shown as is necessary to illustrate the invention.

The nature of this invention is a paper-guide for folding and analogous machines, said guide being adapted to determine the proper position in which to place the side edge of a sheet of paper that is to be seized by the drop-rollers or grip mechanism of such machines, then to automatically recede so as to allow the sheet to be drawn in obliquely, if desired, or to allow the sheet, if wider at its back than at its forward end, to pass the guide without the edge of the sheet in either case being drawn or scraped against said guide.

The invention consists, primarily, in the combination, with the feed-table and the grip mechanism of a machine of the character stated, of a movable guide-bar adapted to be operated in concert with said mechanism, substantially in the manner and for the purpose hereinafter fully described.

The invention consists, also, in certain features of construction, details, and combinations, which will be duly explained and definitely claimed.

Referring to the drawing, A represents a section of the feed-board of a paper-working machine—such, for example, as the well-known Chambers newspaper-folder.

B is the carrying roller or drum.

C is the drop-roller mounted in the frame C′, and E is one of the sheet-carrying tapes.

In the top of the board A near its delivery end is cut a transverse groove a', in which snugly fits flush with the board a double grooved or channeled metal plate F. This plate is stationary, and has mounted and adapted to slide thereon a bracket G, whose base g' is provided with ribs g^2, that register with said grooves. The base is also provided with a central longitudinal slot g^3, through which passes a bolt g^4, that enters the plate F and thus secures the bracket in place. By properly turning this bolt the bracket may be adjusted sidewise and fixed at the point of adjustment. A series of bolt-holes f' is formed in the plate F, so that the range of adjustment of said bracket may be increased as desired.

In the top of the upright g^5 of bracket G is journaled a rock-shaft H, to whose near end is secured a guide-bar I. The lower end of the latter is bifurcated, as seen, and its limbs extend into the grooves f^2 in the fixed plate F. On the other end of this shaft H is a fixed horizontal arm h', whose free end is connected by means of a rod h^2 with a transverse bar J in the drop-roller frame C′. The lower end of this rod is provided with a sleeve h^3, which slides freely on the bar J, and said rod passes through a notched boss g^6 on the end of the guide-bar g^7, that extends from the bracket G.

From the foregoing-described construction it will be seen that when the bracket G is moved for adjustment, as above mentioned, all the parts mounted thereon will go with it without changing their positions relative to each other and to the drop-roller frame. Hence the device as a whole may be moved sidewise, as circumstances may require, without necessitating any rearrangement or readjustment of the parts.

Following is the operation: As the drop-roller is raised in the usual manner, the machine being ready to receive a sheet for folding or other purposes, the rock-shaft arm h', which is connected with the roller-frame, is likewise raised by the latter, thus turning the shaft H and throwing forward the side guide I thereon, as indicated by the dotted lines. When in this outward position, the edge of the sheet is placed against the guide, or near thereto, the position of the end of the sheet being determined in the usual manner by the well-known sight or other gages. (Not shown.) When the drop-roller and its frame descend, the guide I is returned by the intermediate mechanism described to its first or back po-

sition, as shown, the sheet being seized between the drop-roller C and carrying-roller B and drawn into the machine in the direction in which it may have been started. Thus if the sheet be started slightly oblique, or if its back end be wider than its forward end, the sides of the sheet will not rub or scrape against the guide, as would be the case if the latter were stationary. It will be evident that this guide device may also be advantageously used in connection with those well-known machines wherein the sheet is started obliquely in order to permit its being carried over sidewise to a certain position, so as to secure "side register," whereupon the paper strikes a long side guide, against which it squares itself before being operated upon by the machine.

I here remark that I do not restrict myself to the specific construction and arrangement of parts herein shown and described, as the same may be variously modified by one skilled in the art to which my invention appertains without departing from the essential principle thereof.

Having thus described my invention, I claim as new and wish to secure by Letters Patent—

1. In combination with the feed-board and the grippers of paper-folding or analogous mechanism, a reciprocating side guide-bar operated in concert with said grippers, being moved inward when the grippers are open or inactive, so as thereupon to act as a determinate side gage, and being retracted when such mechanism is closed or active, whereby an obliquely-fed or oblique-sided paper sheet whose position with lateral relation to said grippers has been determined by the guide-bar will pass to the folding or analogous mechanism without impinging against said bar, substantially as described.

2. In a paper-folding or analogous machine, the combination, with the feed-board and the grip mechanism, of a movable side guide arranged with relation to said board and grip mechanism, substantially as described, and connected with and operated by said mechanism, substantially as and for the purpose set forth.

3. In a paper-folding or analogous machine, the combination, with the feed-board and the grip mechanism, of the supporting-bracket, the rock-shaft, and the side guide-arms thereon, said shaft being connected with and operated by said grip mechanism, substantially as and for the purpose set forth.

4. The combination, with the feed-board and drop-roller frame of a paper-folding or analagous machine, of the supporting-bracket, the rock-shaft journaled therein, its arm h', the rod connecting said arm with said frame, and the side guide-bar connected with said rock-shaft, substantially as described.

5. In a paper-folding or analogous machine, the combination, with the feed-board and the drop-roller frame, of the base-plate, the bracket adjustably secured thereto, substantially as described, the rock-shaft journaled in said bracket, the arm h', and the rod connecting said frame and arm and movable laterally on said frame, together with the guide-arm connected with said rock-shaft, substantially as and for the purpose set forth.

6. In a paper-folding machine, &c., the combination, with the feed-board and the drop-roller frame, of the base-plate, the slotted bracket provided with the notched or recessed arm g^7, the connecting-bolt, the rock-shaft, its arm h', the guide-bar, and the connecting-rod h^2, provided with the sleeve at its lower end, together with the transverse bar J, all substantially as described.

7. The combination, in a paper-folding machine, &c., with the feed-board and the drop-roller frame, of the grooved or channeled base-plate, the ribbed and slotted bracket provided with the notched or recessed arm g^7, the connecting bolt or screw, the rock-shaft, its arm h', the bifurcated guide-arm engaging with said base-plate, and the connecting-rod provided with the sleeve at its lower end, together with the transverse bar J, all substantially as and for the purpose described.

In testimony whereof I have hereunto affixed my signature this 19th day of March, A. D. 1889.

HUBERT GARDINER.

Witnesses:
FRANCIS W. POLLOCK,
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