(No Model.)

A. H. WALKER.

MECHANISM FOR FEEDING BOARDS TO BE PRINTED.

No. 324,195. Patented Aug. 11, 1885.

Fig. 1.

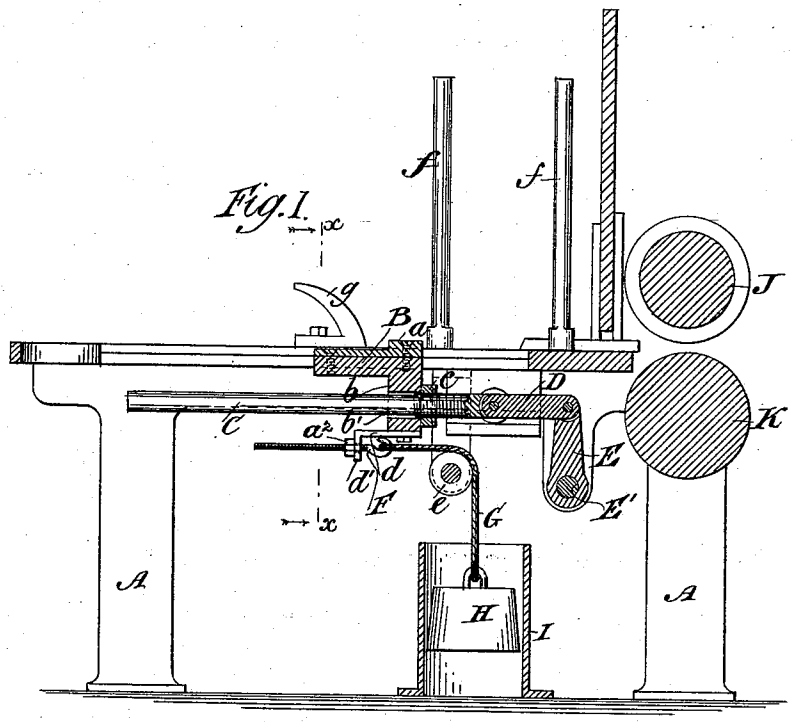


Fig. 4.

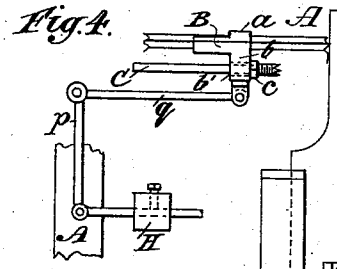


Fig. 2.

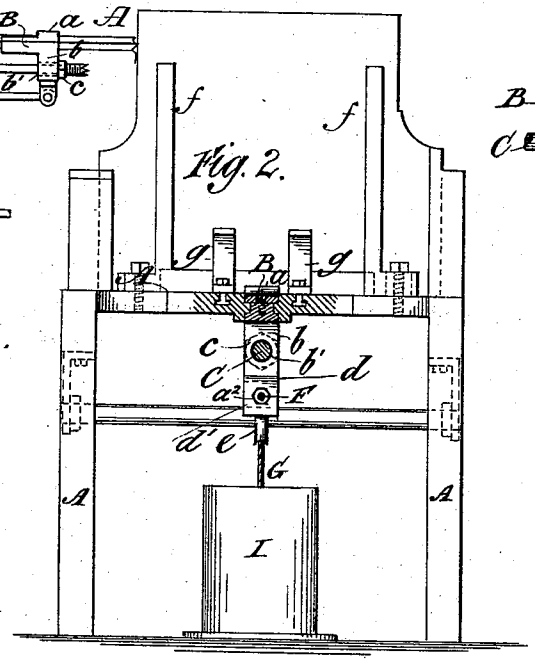
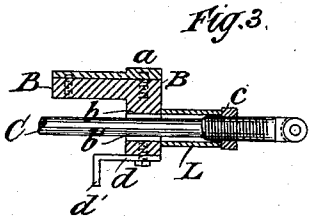


Fig. 3.



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UNITED STATES PATENT OFFICE.

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MECHANISM FOR FEEDING BOARDS TO BE PRINTED.

SPECIFICATION forming part of Letters Patent No. 324,195, dated August 11, 1885.

Application filed August 12, 1884. (No model.)

To all whom it may concern:

Be it known that I, ALBERT H. WALKER, of Brooklyn, in the county of Kings and State of New York, have invented a certain new and useful Improvement in Mechanism for Feeding Boards to be Printed, of which the following is a specification.

The improvement relates particularly to box and label printing machines, and in this class of machines consists in novel mechanism for feeding boards to be printed to the printing-rollers.

In the accompanying drawings, Figure 1 is a sectional side elevation of a portion of a printing-machine embodying my improvement. Fig. 2 is an elevation of the same taken on the lines *x x*, and looking in the direction of the arrow, Fig. 1, showing certain parts in section; and Figs. 3 and 4 are views of modifications thereof.

Similar letters of reference designate corresponding parts in all the figures.

The general construction of this printing-machine may be the same as that shown and described in Letters Patent granted to W. F. Widmayer, December 25, 1877, and numbered 198,479, to which I refer, and I have therefore chosen to illustrate such parts of said machine as embody my improvement.

A designates the frame of the machine. B is a feed-dog adapted to feed the boards to be printed forward. The said feed-dog, as shown, is composed of two portions secured together by screws in such manner as to form grooves extending in the direction of the length of the dog. Ribs or projections on the frame are shown as fitting in said grooves, by which the said dog is guided in its movements backward and forward. The forward end of said feed-dog has upon it a projection, *a*, which extends slightly above the bed of the machine, and upon its under side a downwardly-extending portion, *b*, near the lower extremity of which is an aperture, *b'*, extending in the direction of the length of the machine. Passing loosely through this aperture is a rod, C. Near its forward end said rod is screw-threaded to receive a nut, *c*, which abuts against the face of the dog B. The extreme forward end of said rod is pivotally connected to one end of a pitman-rod, D. The other end of said pitman-rod is pivotally connected to a crank, E, which is fast on a shaft, E', by which means motion is imparted to the parts.

Secured to the under side of the portion *b* of the dog B, I have shown a plate, *d*, near the extremity of which is a downwardly-projecting shoulder, *d'*. An aperture passes through the said shoulder, through which passes loosely the screw-threaded end of a hook, F. A nut, a^2, is arranged upon said hook, whereby the latter may be adjusted. I have shown a rope or chain, G, attached at one end to said hook and at the other to a weight, H. The said rope or chain preferably passes over a pulley, *e*. Preferably the weight H is guided in its up and down movements by a case or shell, I.

Boards to be printed are piled one upon the other between side-guides, *f*, and rear guides, *g*, on the bed of the machine.

When the machine is operated, the rod C in its backward excursion is actuated by the crank and pitman rod, as before described, and carries the feed-dog B past the forward faces of the guides *g*. On the forward excursion of the feed-dog the projection *a*, coming in contact with the edge of the lowest board of the pile which rests upon the bed of the machine, carries it forward from under the superposed boards and between the rotary printing-roller J and pressure-roller K, where the same is printed. The feed-dog then makes another backward excursion, a second board drops down in front of the projection *a*, and is in turn carried forward like the first, and so on. The forward excursion of the feed-dog, or the one which causes the forward movement of the board, is effected by the descent of the weight H as fast as permitted by the nut *c* on the rod C, the said rod being moved forward by the crank E. The nut *c* thus prevents the too rapid forward movement of the feed-dog, and the speed of the feed-dog in moving forward is therefore approximately uniform with that of the rod C. It not infrequently happens, however, that in feeding a board in the manner described it may strike against some portion of the machine and its forward movement be stopped. If, under such circumstances the rod C be rigidly attached to the feed-dog B, a breakage in the machine is

quite apt to ensue. By my improvement, should a stoppage of such character occur, the rod C and the pitman D may still continue their forward movement.

In the modification of my improvement shown in Fig. 3 I have arranged a sleeve, L, fitting between the nut *c* and the face of the feed-dog. By using sleeves of different lengths I am enabled to readily adjust the feeding mechanism to feed boards of varying lengths.

In Fig. 4 I have shown the weight H as attached to one arm of a bell-crank lever, *p*, which is fulcrumed upon the frame A of the machine. To the other end of said bell-crank lever is pivotally connected one end of a link, *q*, which link has its other end pivotally connected to the feed-dog. The forward excursion of the feed-dog is caused by the operation of the said weight H through said lever and link. By adjusting the weight upon the lever-arm the force with which it operates may be varied.

I may use links of different lengths, and may thereby accommodate the machine to varying lengths of boards to be fed.

I do not wish to be understood as limiting myself to the use of my improvement upon machines for printing boards and labels, as the same is applicable to other printing-machines.

It will be observed that according to my improvement the crank E only impels the feed-dog B rearwardly. This crank does absolutely nothing, directly or indirectly, toward effecting the forward movement of the feed-dog. So entirely independent of the crank is the feed-dog during the forward movement of the crank that should the feed-dog be held back by any means the crank would move forward without exerting upon it the slightest tendency to move forward. The crank E may prevent the feed-dog from being moved forward too fast, but this is the only action it has upon the feed-dog during its forward movement. The forward movement of the feed-dog is effected wholly by the weight H, and the weight has no connection whatever with the crank E or the rod C actuated thereby.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a printing-machine, the combination, with a feed-dog, of a crank, a rod connected with the crank, and provided with a projection for abutting against the feed-dog in order to move it rearwardly, and a weight having a connection with the feed-dog, but unconnected with said rod and crank, except by the bearing the feed-dog has against said projection, and serving to move the feed-dog forward, substantially as specified.

2. In a printing-machine, the combination, with a feed-dog, B, of a rod, C, the nut *c*, a crank, E, for imparting a backward movement to said rod, the hook F, the rope or chain G, and the weight H, connected to the feed-dog for imparting a forward movement to it, substantially as specified.

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Witnesses:
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