No. 840,211. PATENTED JAN. 1, 1907.

F. E. HODGKINSON.

DEVICE FOR FEEDING SHEETS TO PRINTING AND LIKE MACHINES.

APPLICATION FILED SEPT. 29, 1905.

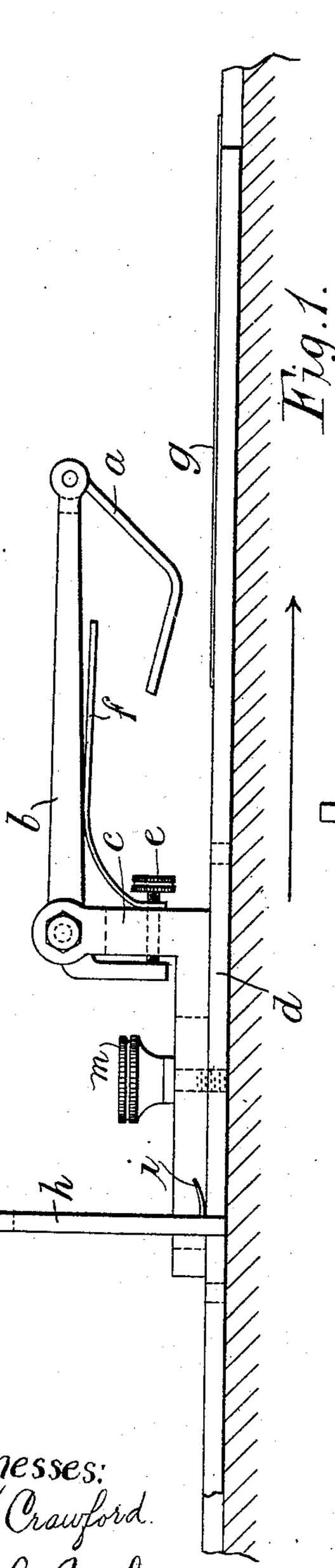

Fig. 1.

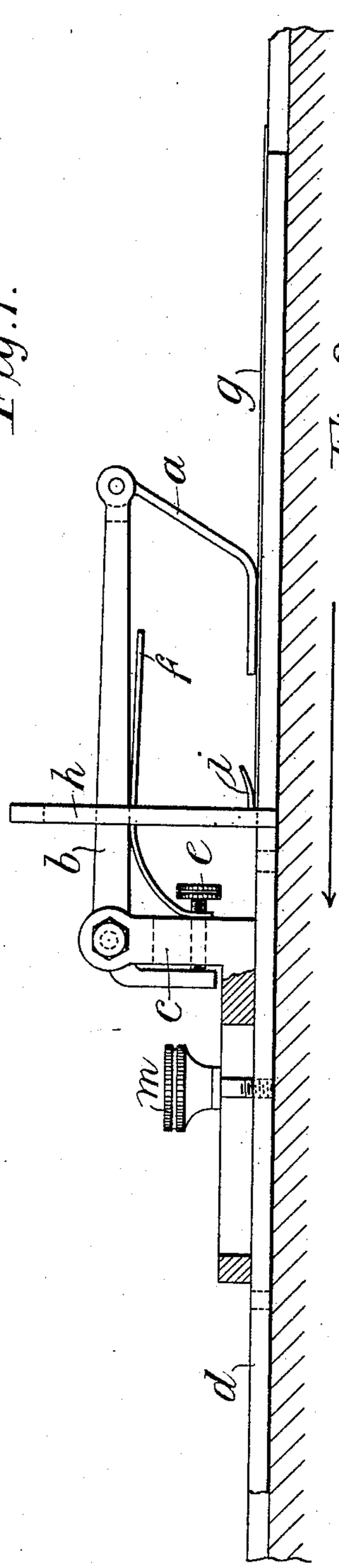

Fig. 2.

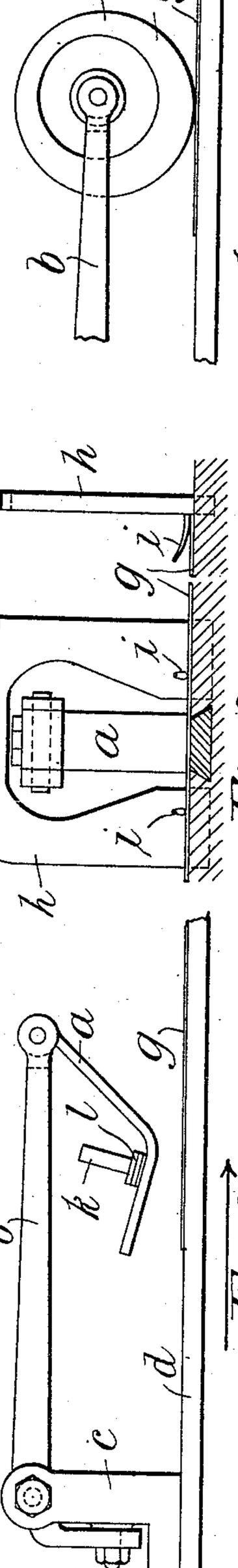

Fig. 3.

Fig. 5.

Fig. 6.

Fig. 4.

Witnesses:
J. H. Crawford.
W. C. Isel.

Inventor
Frank Edward Hodgkinson.
By Fred H. Bowersock
Attorney

UNITED STATES PATENT OFFICE.

FRANK EDWARD HODGKINSON, OF LONDON, ENGLAND, ASSIGNOR TO THE PRINTING APPLIANCE AND ENGINEERING COMPANY LIMITED, OF LONDON, ENGLAND.

DEVICE FOR FEEDING SHEETS TO PRINTING AND LIKE MACHINES.

No. 840,211. Specification of Letters Patent. Patented Jan. 1, 1907.

Application filed September 29, 1905. Serial No. 280,570.

To all whom it may concern:

Be it known that I, FRANK EDWARD HODGKINSON, a subject of the King of Great Britain and Ireland, and residing at 12 Warner street, Clerkenwell, London, E. C., England, have invented certain new and useful Improvements in Devices for Feeding Sheets to Printing and Like Machines, of which the following is a specification.

This invention relates to the feeding of sheets to printing and like machines, and more particularly to the obtainment of an accurate side lay.

Devices have hitherto been employed which when the sheets are fed up to a front lay move toward the sheets from the side, grip them, recede and pull the sheets against the side lay or stop, and then release them. These devices are, however, of a complex nature, and consequently expensive to make. They are also not reversible—that is to say, a separate device has to be made for laying the sheets to each side.

The object of the present invention is to produce a device which is of very simple construction, having a minimum number of parts, is reversible and yet is very efficient in action, simple means being provided to permit adjustment relatively to the sheets to be fed.

The invention consists, broadly, in reciprocating a pivoted weight or cam laterally over the sheet, so that it freely passes onto the sheet, but binds the same against a movable bar or surface beneath the sheet and draws it to one side on its return movement.

The invention consists, more specifically, in freely pivoting a cam or weight upon the end of a lever, which is suitably supported and reciprocated in such a manner that when advanced toward a sheet from the side the inertia imparted to the cam or weight causes it to rise, so that it is carried forward clear of the sheet, the cam or weight falling onto the sheet and pressing the same against a movable bar or surface beneath with sufficient friction on the return movement of the lever to pull the sheet against the side lay or stop.

The invention further consists in providing an adjustment whereby the effective weight or pressure of the cam upon the sheet may be regulated as desired.

The accompanying drawings illustrate one mode of carrying out the invention.

Figure 1 is a side elevation showing the device when moving forward, and Fig. 2 a similar view when moving backward and gripping the sheet. Figs. 3 and 4 are two views of one form of side lay or stop which may be employed. Figs. 5 and 6 show two modified forms of weight or cam.

In carrying out the invention according to one mode a curved weight or cam *a* is freely pivoted on the end of the long arm of a bell-crank lever *b*, which in turn is pivoted on a bracket *c*, secured in any suitable manner to a reciprocating bar or other member *d*, near the side of the lay-board of the printing or other machine to which the invention is to be applied. The bracket may be slotted so that it can be adjustably secured to the reciprocating bar by a set-screw *m* or the like. The bar *d* extends across the lay-board, being fitted to slide in a groove therein flush with the surface of the board.

An adjusting-screw *e* may be fitted on the bracket *c* so as to bear on the short arm of the bell-crank lever *b* and regulate the position of the long arm of the lever relatively to the surface of the paper *g*, whereby the cam *a* is caused to bear with more or less of its weight upon the sheet. A spring *f* may be fitted to the bracket, tending to cause the lever *b* to raise the cam off the sheet, the adjusting-screw acting against the spring when such is employed. Any other suitable adjustment may be employed. For instance, as shown in Fig. 5, the screw *e* and spring *f* may be dispensed with and small washers or other weights *l* be threaded on a pin *k* to adjust the weight of the cam *a*, in this case the lever *b* being preferably fixed to the bracket.

The device having been fitted to the reciprocating bar *d* and adjusted, it is reciprocated in such a manner at the correct time that the inertia imparted to the cam on the forward movement causes it to rise or jump, as shown in Fig. 1, the forward velocity being sufficient to maintain the cam in its raised condition until the lever is well over the sheet *g* and starting on it sreturn stroke, whereupon the cam falls or is brought down smartly onto the sheet and bears on the same, pressing it against the bar with sufficient friction to

draw the sheet up to the side lay *h* as the device continues its backward stroke and as shown in Fig. 2. The device may be applied to work from either side, as desired. The side lay or stop *h* may be fitted with curved pins *i*, which prevent the paper buckling, such as might occur with very thin paper, the two pins bearing on the top of the sheet and stiffening the portion between them.

The form of cam and supporting member may be varied. For instance, the lever may be fixed to its bracket and the latter be made adjustable. The cam or weight may be in the form of a freely-mounted eccentric roller or wheel *n*, as shown in Fig. 6.

In small machines, or in other cases where it is desirable to push the sheets up to the side lay or stop, the cam or weight may be reversed and adapted to push the sheet on the forward stroke, freely sliding and leaving the sheet on the return stroke. By this arrangement the cam may bear with sufficient pressure to push the sheet forward until it encounters the side lay or stop, when the cam slides.

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

1. An automatic side-lay device for printing and like machines, comprising a reciprocating bar, a freely-pivoted weight adapted to rest on the bar when stationary or when moved in one direction and to raise under the influence of its inertia when moved in the opposite direction, and means for supporting the pivot of the weight.

2. An automatic side-lay device for printing and like machines, comprising a bar, a bracket mounted thereon, means for adjusting the relative position of the bracket on the bar, an overhanging arm on said bracket, a weight freely pivoted on the end thereof, said weight being free to rise due to its inertia when the device is moved in one direction and being free to fall and bind against the bar when the device is moved in the reverse direction.

3. An automatic side-lay device for printing and like machines, comprising a bar, a bracket mounted thereon, an overhanging arm on said bracket, means for relatively adjusting said arm and bracket a weight freely pivoted on the free end of the arm said weight being free to rise due to its inertia when the device is moved in one direction and being free to fall and bind against the bar when the device is moved in the reverse direction.

4. An automatic side-lay device for printing and like machines, comprising a reciprocating bar, a freely-pivoted weight above said bar adapted to rise under the influence of its inertia when moved in one direction and to fall against the bar when moved in the opposite direction, means for supporting said weight, and means for adding to or subtracting from said weight to adjust the pressure thereof on the bar.

5. An automatic side-lay device for printing and like machines, comprising a bar, a bracket thereon an overhanging arm pivoted on the bracket, means for securing said arm in its adjusted position, a weight freely pivoted on the free end of the arm and free to rest on the bar when stationary, or when moved in one direction and means on the weight for receiving additional weights.

6. An automatic side-lay device for printing and like machines, comprising a bar, a bracket secured thereon by a screw-and-slot device, an overhanging arm on said bracket, means for adjusting said arm, a weight freely pivoted on the free end of said arm and adapted to rest on the bar when stationary or when moved in one direction, and a stationary side lay or stop consisting of a plate having an opening therein to permit the passage of the bar and appurtenances thereon, and upturned pins adjacent said opening, substantially as and for the purposes hereinbefore set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK EDWARD HODGKINSON.

Witnesses:

FRANCIS J. BIGNELL,

BERTRAM H. MATTHEWS.

Correction in Letters Patent No. 840,211.

It is hereby certified that the name of the assignee in Letters Patent No. 840,211, granted January 1, 1907, upon the application of Frank Edward Hodgkinson, of London, England, for an improvement in "Devices for Feeding Sheets to Printing and Like Machines," was errroneously written and printed "The Printing Appliance and Engineering Company Limited," whereas the said name should have been written and printed *The Printing Appliances and Engineering Company Limited;* and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 12th day of February, A. D., 1907.

[SEAL.]

F. I. ALLEN,

Commissioner of Patents.