(No Model.)

T. J. PORTER.

TYPE SETTING MACHINE.

No. 255,667. Patented Mar. 28, 1882.

FIG. 1.

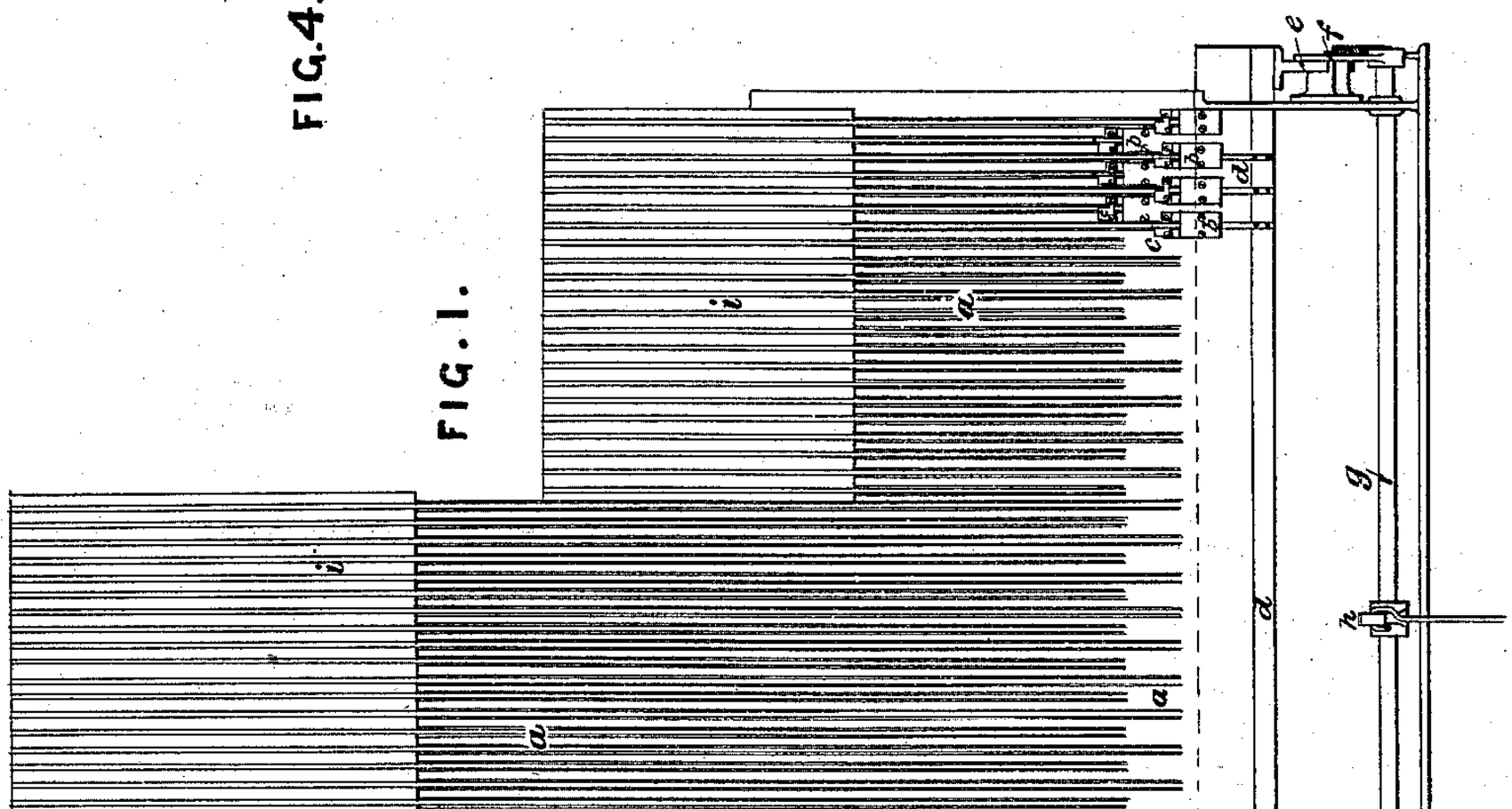


FIG. 2.

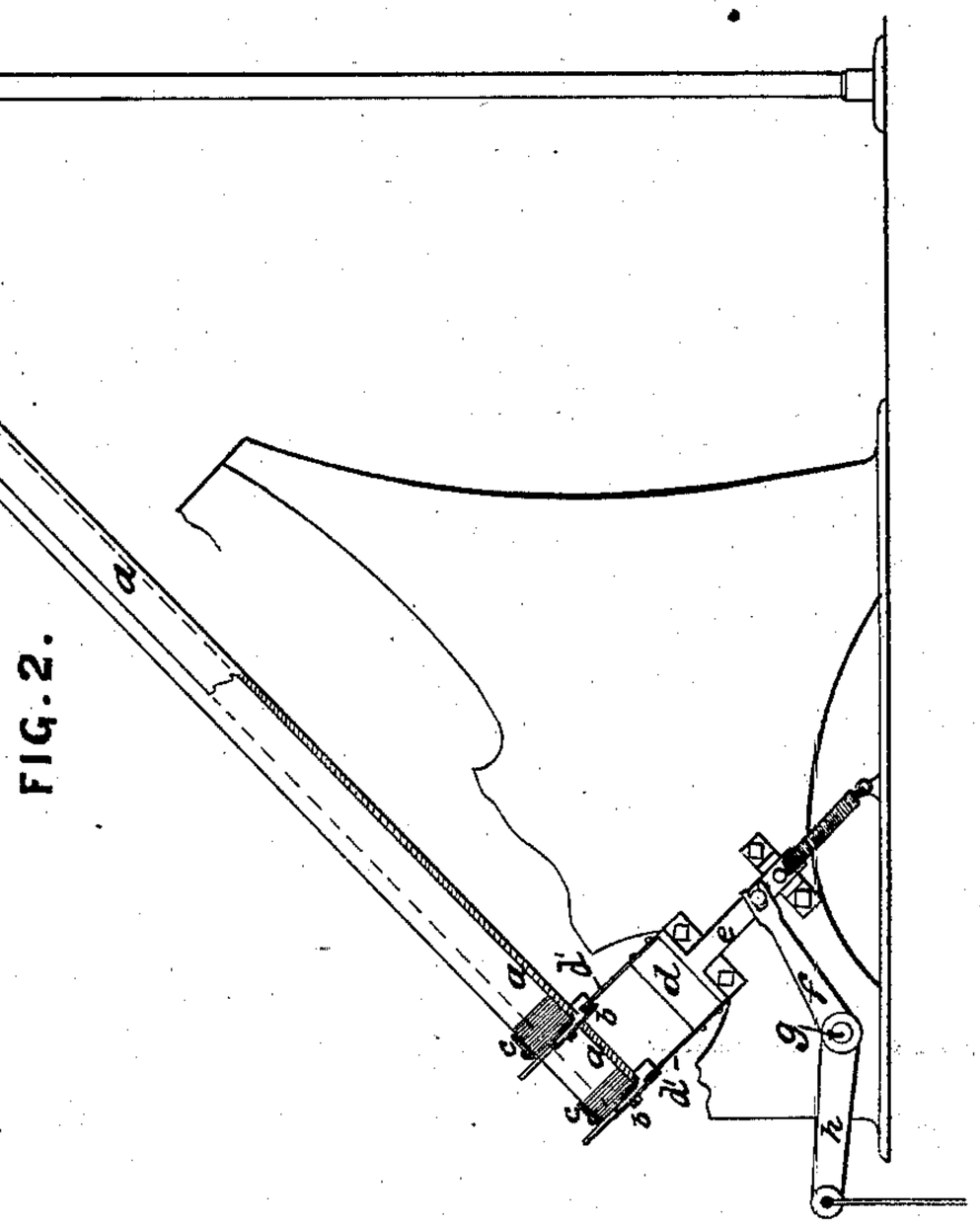


FIG. 3.

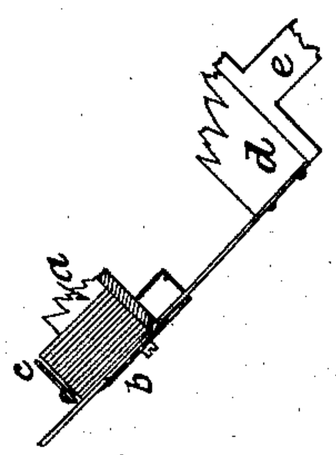


FIG. 4.

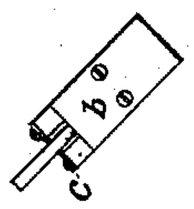
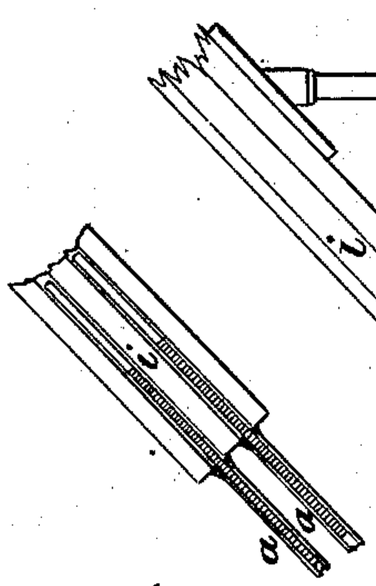


FIG. 5.

FIG. 6.



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UNITED STATES PATENT OFFICE.

THOMAS J. PORTER, OF FLEETWOOD, COUNTY OF LANCASTER, ENGLAND.

TYPE-SETTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 255,667, dated March 28, 1882.

Application filed October 25, 1881. (No model.) Patented in England January 27, 1880.

To all whom it may concern:

Be it known that I, THOMAS JAMES PORTER, of Fleetwood, in the county of Lancaster, England, printer, have invented a new and useful Type-Setting Machine, (for which I have obtained a patent in Great Britain, No. 356, bearing date January 27, 1880,) of which the following is a specification.

My invention consists in certain improvements in type-setting machines, whereby the work of the compositor is greatly accelerated and facilitated.

I place the troughs holding the type at an angle, so that the type will slide freely down to the lower end by its own weight, where it rests against a plate which forms the termination of the trough, and is there retained, so that the lowest letter in each trough is in position to be raised by a punch, so as to be ready to be taken up by the compositor. At the upper end of the troughs I place trays containing type at the same angle as the troughs, so that the type in the trays may slide into and supply the troughs as they become emptied. I fix the punches for raising the type all on one cross-bar, and they are caused to act simultaneously by treadle or otherwise. I place the troughs a little distance apart, by preference about three-eighths of an inch, and each alternate trough terminates at the lower end about one inch and three-quarters, or other convenient distance, either higher up or lower down than the trough next it, so as to enable the compositor to take up the types readily and in succession without having to place them separately in the stick or holder. I attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation, and Fig. 2 is a side elevation, in section, of a type-setting machine to which my invention is applied, and Figs. 3, 4, 5, and 6 are detail views of parts of the same.

a are the troughs containing the type.

b are the stop-plates at the bottom of the troughs.

c are retaining-plates fixed above the ends of the troughs and allowing sufficient space for one letter at the end of each trough to be raised by the punch, but preventing more than one letter from rising in each trough at the same time. These retaining-plates form an index, each one having the letter contained in the trough above which it is fixed engraved upon it.

d is a bar to which all the punches *d'* are fixed, one punch sliding in the bottom of each trough and raising the lowest letter. The punch-bar is held at each end by sliding rods *e*. On each rod is a stud, which studs fit in slots in the levers *f*. These levers are fixed on a shaft, *g*, on which is fixed another lever, *h*, connected by a cord or wire to a treadle or foot-lever. When the treadle is depressed by the foot of the compositor the lever *h* is drawn down and the levers *f* are raised, and they cause the rods *e*, carrying the punch-bar *d*, to slide upward, and the punches push up the bottom letter in each trough until the foot of the letter is within the sixteenth (or more or less) of an inch of the top of the stop-plate, where it remains till taken by the compositor, when another letter moves forward. So long as the first letter remains raised the punch passes up and down in the space between the stop-plate and the second letter; but when the first (raised) letter is removed by the compositor the next letter takes its place and is raised in like manner, and so on until the troughs are emptied. I place a clump at the upper end or back of each row of type to insure the letters coming forward as required. The first letters in the troughs stand up across the machine in two rows, one row being about one and three-quarters inch behind or above the other, and the raised letters in each row stand three-quarters of an inch apart, with their nicks turned to the left and the right way for placing in the stick.

At the upper ends of the troughs are the trays (marked *i*) containing type. The bottoms of the grooves in the trays containing the type are raised a little above the bottoms of the troughs, and where the trays join the troughs the troughs are widened a little to allow the type to slide freely from the trays into the troughs.

Figs. 3, 4, and 5 are enlarged views showing a letter that has been raised by a punch, and also the stop-plate and the retaining-plate. Fig. 6 is an enlarged view showing a plan of part of a tray and troughs.

Having thus stated the nature of my invention and described the manner of performing the same, I wish it to be understood that I do not limit myself to the exact details given as to the distance apart of the troughs, or of their alternate terminations, which may be varied; but what I claim as my invention is—

1. In a type-setting machine, the combination, with the reciprocating punches *d'*, and means, substantially as described, for operating them, of the series of inclined troughs *a*, alternating in length and provided with the stop-plates *b* and the guard-plate *c*, as and for the purpose set forth.

2. In a type-setting machine, the combination, with the inclined troughs *a*, alternating in length, and provided with the stop-plates *b* and guard-plates *c*, of the bar *d*, the punches *d'*, the sliding rod *e*, provided with studs, the levers *f*, having forked or slotted ends, the rock-shaft *g*, and lever *h*, connected to a treadle, substantially as and for the purpose set forth.

THOMAS JAMES PORTER.

Witnesses:
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