(No Model.)

J. McADAMS.

PAGING MACHINE.

No. 277,310. Patented May 8, 1883.

Fig 1.

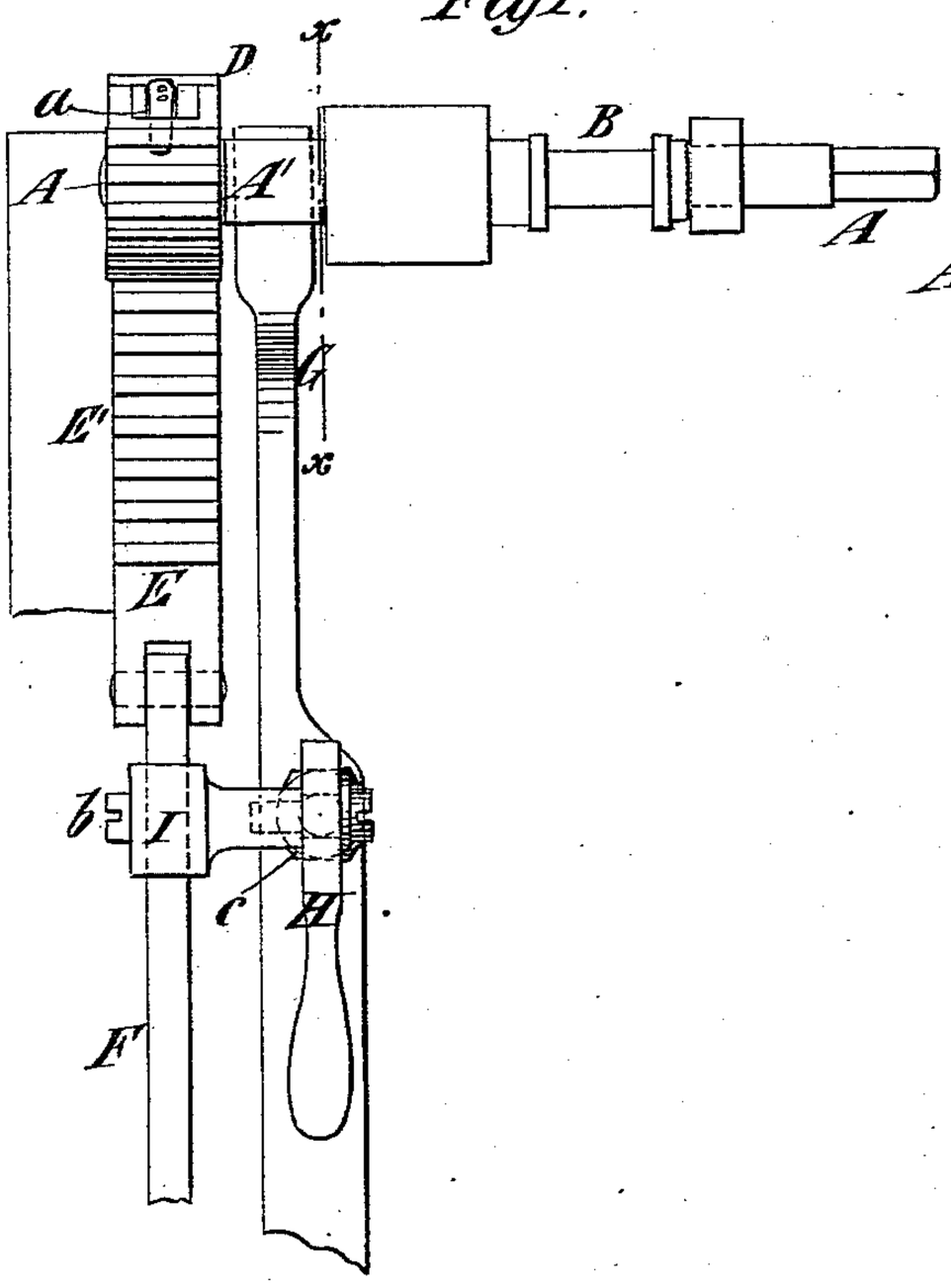


Fig 2.

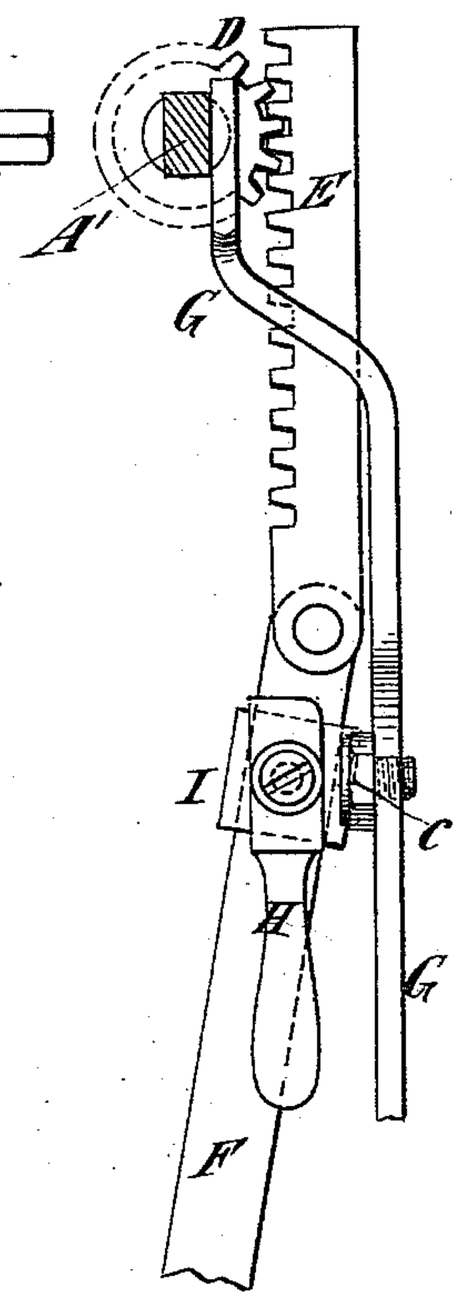
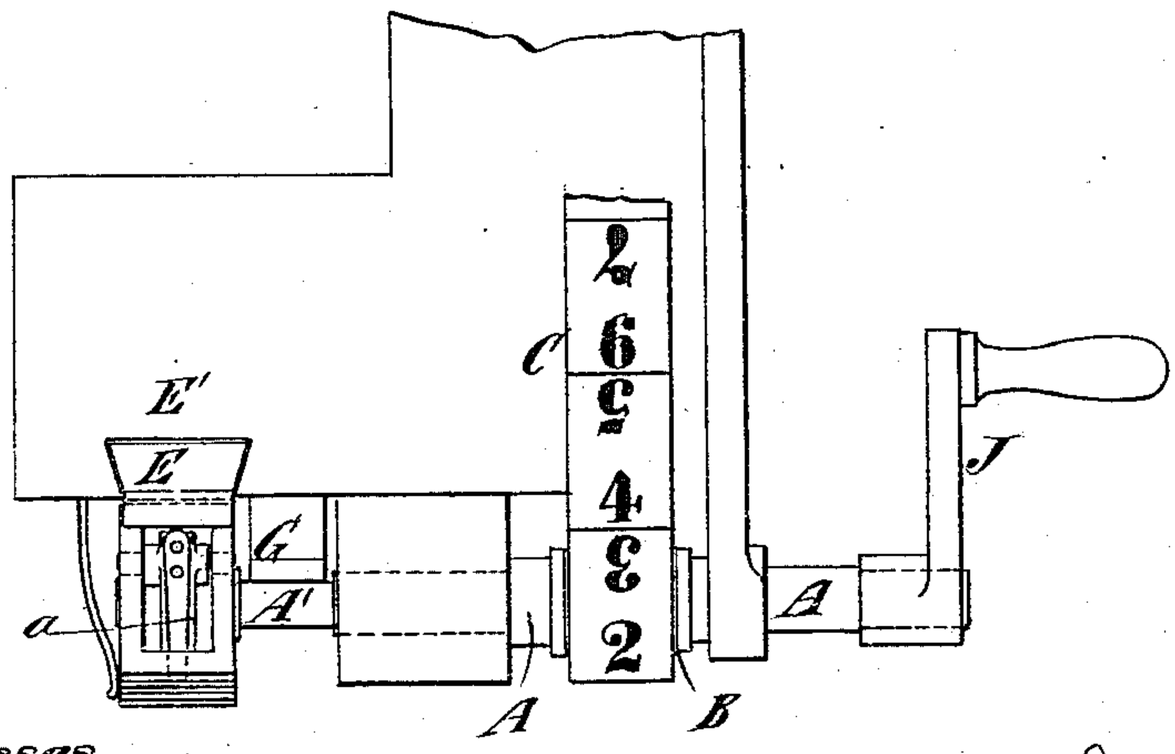


Fig 3.



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UNITED STATES PATENT OFFICE.

JOHN McADAMS, OF BOSTON, MASSACHUSETTS.

PAGING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 277,310, dated May 8, 1883.

Application filed November 24, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN MCADAMS, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Paging-Machines, of which the following is a specification.

My invention relates to paging-machines of the kind shown and described in my Letters Patent No. 87,693, dated March 9, 1869. In such machines the numbers or types are formed upon a chain which passes over a flat turning plate fixed or formed upon a shaft which I term the "type-shaft." Upon this shaft is a pinion which has a clutch-connection with the shaft, so that it can turn freely thereon in one direction, but engages with the shaft and imparts motion thereto when turned in the reverse direction. A reciprocating rack engages with the pinion, and by each double movement turns the type-shaft a half or a fraction of a turn, and through the flat turning plate imparts the necessary feeding movement to the to the type chain. To aid in completing the half-revolutions of the type-shaft and to hold such shaft when turned, a flat spring is employed, which bears on flattened portions or sides of the shaft. When it is desired to move the type-chain backward before commencing numbering, a hand-crank is applied to the end of the type-shaft, and the latter is thereby turned continuously. The flattened portion of the shaft turning on the flat spring has heretofore been objectionable, because of the clicking noise produced in turning back, and because the pressure of the spring increases the amount of power necessary to so turn the shaft back and forth.

The object of my present invention is to enable the type-shaft to be turned back and forth freely and quickly, and thus obviate the above-described objections.

To this end the invention consists, essentially, in the combination, in a paging-machine, with the type-shaft having flattened portions, a rack and pinion for operating said shaft, and a spring bearing on such flattened portions, of a device connected with said rack, for moving and holding the spring out of contact with said flattened portions when it is desired to turn the type-shaft by hand.

The invention further consists in novel details of construction and combinations of parts hereinafter described.

In the accompanying drawings, Figure 1 represents a front view of such parts of a paging-machine of the kind above described as are necessary to illustrate my invention. Fig. 2 represents a section on the dotted line *x x*, Fig. 1; and Fig. 3 represents a plan of the parts shown in Fig. 1.

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

A designates the type-shaft, upon which is fixed a flat turning plate, B, which carries, moves, or feeds the type-chain C forward intermittently. Upon the shaft A is a pinion, D, which is connected with the shaft by a spring-actuated pawl, *a*, as described and shown in my aforesaid Letters Patent, or by any other suitable form of clutch-connection which will permit of the pinion moving freely on the shaft when turned in one direction, but will cause it to actuate the shaft when turned in the other direction.

E designates a rack, which is movable vertically in a guide, E′, and is reciprocated by means of a rod, F, and a treadle, (not here shown,) or by any other suitable means.

One portion, A′, of the shaft A has its opposite sides flattened, as shown most clearly in Fig. 2; and G designates a spring or spring-bar which bears upon the flattened portion A′. Only the upper part of this spring or spring-bar is here shown; but it extends downward, and is rigidly attached to the frame or other rigid part of the machine.

H designates a cam-faced lever, which is pivoted to a stock or fulcrum-piece, I, secured upon the rod or bar F, so that it is movable with the rack E. The stock or piece I may be readily adjusted upward or downward on the rod or bar F to bring it into proper position, and then secured by a set-screw, *b*, or otherwise. Upon the spring G is a face or projection, *c*, which may consist of the head of a screw which is inserted into the spring, and may be adjusted by turning to cause a greater or less projection thereof. The stock or piece I is adjusted and secured in such position that when the rack E is at the upper end of its movement the cam-faced lever H will be opposite the projection *c*.

When it is desired to move the type-chain C backward, a hand-crank, J, is applied to the end of the shaft A, as shown in Fig. 3, and the spring G is moved and held out of contact with the flattened portion A′ of the shaft by swinging the lever H so as to bring its cam-face to bear on the projection *c* of the spring, and the spring will be held out of contact with the shaft all the time that the shaft is being turned back. This obviates the disagreeable noise caused by the clicking of the spring on the flattened portions of the shaft, and it permits of the shaft being turned back or forth with less power and by using a smaller hand-crank J than would otherwise be necessary.

The lever H might be pivoted to a fixed part of a machine; but it would then have to be thrown off the spring as well as set on by hand, while, when pivoted to the rack or a part movable therewith, the first downward movement of the rack will throw off the lever or move it away from the projection *c*, and it will therefore have to be only set on by hand.

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

1. In a paging-machine, the combination, with a type-shaft having a flattened portion, a pinion and rack for operating said shaft, and a spring bearing on said flattened portion, of a device, substantially such as described, connected with said rack for moving and holding the spring out of contact with said flattened portion, when it is desired to turn the type-shaft by hand, substantially as and for the purpose set forth.

2. In a paging-machine, the combination, with a type-shaft having a flattened portion, a pinion and rack for operating it, and a spring bearing on said flattened portion, of a cam-faced lever moving with said rack and capable of being operated to move and hold the spring off said shaft, substantially as herein described.

3. The combination of the shaft A, having the flattened portion A′, the pinion D, the rack E, the rod F, the spring G, the lever H, and the stock or fulcrum-piece I, adjustable on said rod, substantially as herein described.

4. The combination of the shaft A, having the flattened portion A′, the spring G, having the projecting screw *c* inserted therein, and the cam-faced lever H, substantially as herein described.

JOHN McADAMS.

Witnesses:
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