

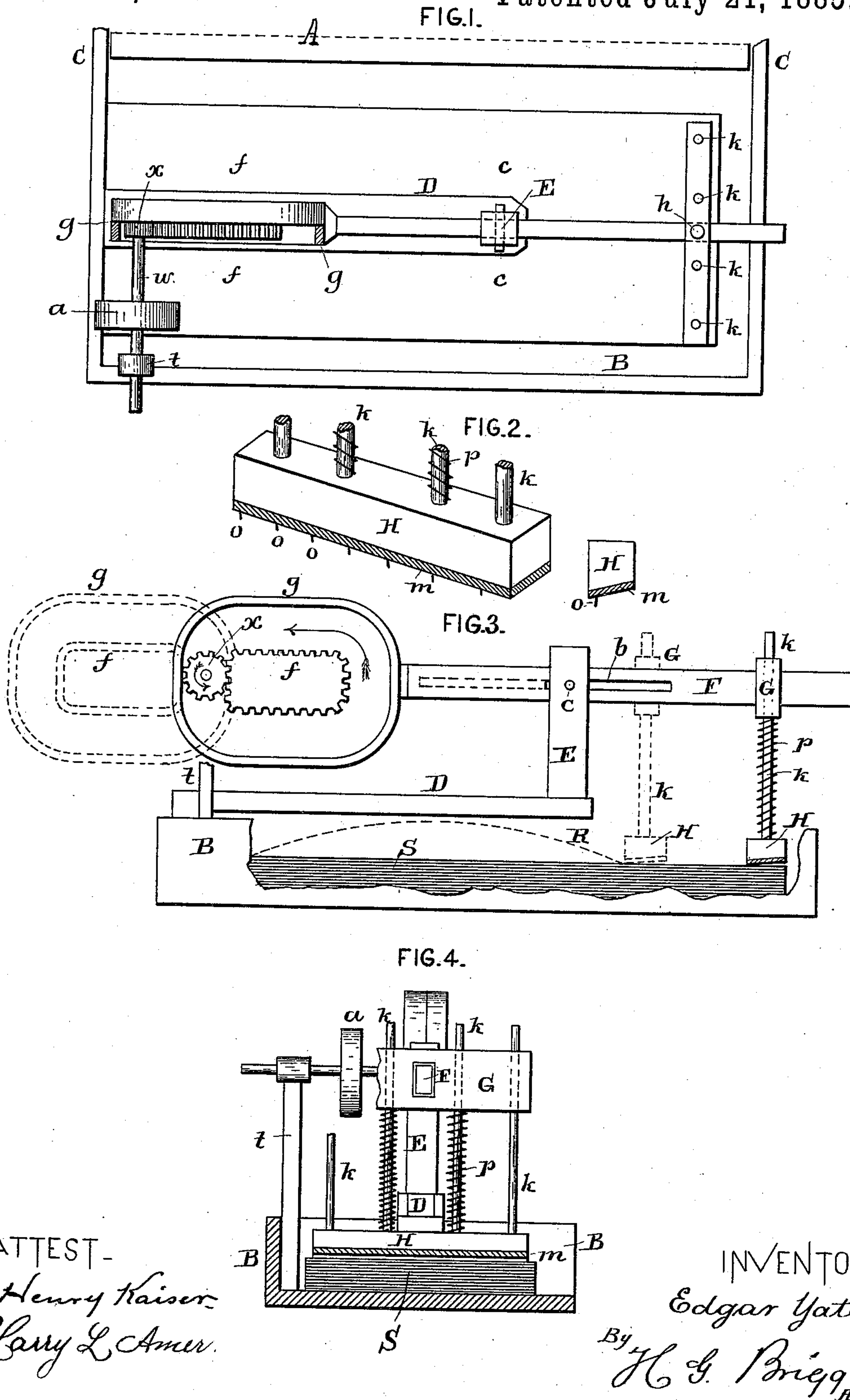
(No Model.)

E. YATES.

FEEDING ATTACHMENT FOR PRINTING PRESSES.

No. 322,670.

Patented July 21, 1885.



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FEEDING ATTACHMENT FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 322,670, dated July 21, 1885.

Application filed July 10, 1882. (No model.)

To all whom it may concern:

Be it known that I, EDGAR YATES, residing in Cape Elizabeth, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Feeding Attachments for Printing-Presses; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

The nature of my invention relates to certain new combinations and arrangements of mechanical parts whereby a novel and useful device for automatically manipulating sheets of paper arranged in successive layers, so that the same may be automatically fed into printing-presses, is produced, which does its work more expeditiously and effectively than any other similar mechanism now in common use for accomplishing the same result.

To this end my invention consists of a rectangular box-frame, and inwardly-projecting supporting-arm, one end of which is securely fastened by some convenient method to the side of such box-frame, an upright slotted standard located on the free inner end of said supporting-arm, a slotted actuating-bar, which being there held in place by means of a suitable pivot-pin; also, in providing said actuating-bar with an oblong-shaped toothed rack on one end, and attaching to the other end an adjustable carrying-bar, which has connected with it a peculiarly-constructed presser-foot and mechanisms, to be hereinafter fully elaborated; also, in attaching to the rectangular box-frame a suitable pinion-wheel which engages with the oblong-shaped toothed rack, and operates upon the same so as to throw the actuating-bar inwardly and outwardly and cause a sheet of paper upon which the force of the presser-bar is exerted to partially bow up or become elevated at or near its middle, so that the sheet can be readily and easily seized by suitable grippers and drawn into the printing-press.

The several functions belonging to each component part of my newly-organized printing-press attachment will be hereinafter described, and specifically pointed out in the claims.

Figure 1 of the drawings represents a top plan. Fig. 2 is a detail of the presser-foot. Fig. 3 is a side view of the invention with the box-frame partially broken out. Fig. 4 is an end elevation, partially in section.

Although I shall first describe my apparatus in combination with the platen of a common job-printing press, I will here state that the invention can by merely mechanical skill be applied to other kinds of presses.

In the annexed drawings, forming a part of this specification, the letter A represents the position of the platen of a job-printing press. B is a rectangular box-frame, which may be attached to the platen A in any convenient way, represented in this particular instance as connected by means of arms C. D is an inwardly-projecting supporting-arm rigidly fastened to the side of the frame B, and provided at its inner or free end with an upright standard, E, which has near its top a slot through which passes an actuating-bar, F. At the point where it passes through the slot the actuating-bar F is provided with a narrow longitudinal slot, *b*.

Extending from side to side of the standard E is a stout pivot pin or screw, *c*, which fits into the slot *b* and holds the actuating-bar F in place, and when in operation the bar F plays freely backward and forward on the pin *c*. The bar F is provided at one end with an oblong-shaped toothed rack, *f*, having rounded corners. Running around this rack *f* is a guideway, *g*.

On the inner end of the actuating-bar F is located a slotted carrying-bar, G, which is capable of being slipped about to any desired point on the bar F, and there securely held in position by means of a set-screw, *h*. The carrying-bar is provided with holes, through which pass rods *k*. Beneath the carrying-bar G is seen a presser-foot, H, into the top of which the rods *k* are securely fastened.

The peculiar manner in which this presser-foot H with its connected parts is constructed constitutes one of the chief characteristics of my invention. A rubber facing, *m*, is attached to the under side of the foot H, so that it shall readily and surely adhere or cling to any surface upon which it may be pressed; further, that the face of the presser-bar may have the

greatest possible tractive power, the rubber facing *m* is re-enforced with minute sharp points or pins *o*.

To regulate the downward pressure of the presser-bar H upon any given surface, the following arrangement of parts is made: Two of the rods *k k* are surrounded with a spiral spring, *p*. The upper ends of the springs bear directly against the carrying-bar G. The lower ends rest on the presser-foot H. At one corner of the box-frame B rises a standard, *t*. Journaled in the top of this standard is a shaft, *w*. On the inner end of the shaft *w* is attached a pinion-wheel, *x*, which engages with the toothed rack *f*. The teeth of the pinion *x* are kept at all times closely engaged with the toothed rack *f* by means of the guideway *g*.

a shows a driving-pulley located on the shaft *w*.

The operation of the apparatus is as follows: The attendant first deposits a number of paper sheets arranged in a package on the bottom of the box B, care being taken to so place the sheets that at one end they shall bear against the side of the box, and that their other ends shall be directly under the presser-foot H. (In the drawings the letter S indicates a package of paper sheets.) The rubber face of the presser-bar is then dropped upon the top sheet of the package S, its downward force being regulated by means of the elongating tendency of the springs *p p*. Motion is now imparted to the pinion *x* by means of the driving-pulley *a*. As the pinion *x* revolves, the rack *f* travels over it in the direction denoted by the arrow, and the actuating-bar F is drawn horizontally through the slotted upright E. Thus the end of the sheet of paper upon which the presser-foot H is pressing will be drawn in the same direction, and the paper sheet will be raised up or elevated at or near its middle part. If the parts at the beginning of the operation are in the position shown by the solid outlining in Fig. 3, the course of the rack will be as follows: The position of the pinion *x* is fixed. That of the actuating-bar is movable—that is to say, the bar F is free to pivot on the pin *c* and to reciprocate within the limits of the length of the slot *b*. As the pinion *x* begins to revolve in the direction of the arrow, the short side of the rack *f* will be raised up. consequently the rack-end of the bar F will be raised and the other end will be depressed, and the presser-foot H will bear hard upon the package of paper sheets. As the pinion *x* is so confined by the guideway *g* as to be constantly pressed against the toothed rack *f*,

it is obvious that the corner will be easily turned, and the course will be along the long side of the rack. This will cause the actuating-bar F to move horizontally through the slot in standard E. When the pinion *x* has passed the next rounded corner and is half-way up the short side, the parts will be in the position indicated by the dotted outlining. At this instant suitable grippers seize the bowed-up sheet of paper. The course of the rack now depresses the rack end of the actuating-bar F and lifts the presser-foot H from the paper package. The top doubled-up sheet can then be easily withdrawn by the grippers. R shows a sheet ready to be gripped. The course of the rack will now be under the pinion, and the actuating-bar will be carried inwardly as far as it has been carried outwardly. The passage of the rear short side of the rack *f* over the pinion will return the parts to the original starting-point, with the presser-foot H resting on the next sheet of paper, ready to repeat the operation just described.

This device is simple in its construction, is certain in its operations, it adds very little to the expense of a printing-press, and at the same time can be easily attached; also, the labor and time of an attendant constantly feeding sheets of paper in a printing-press is dispensed with, and the cost of operating a printing-machine is correspondingly diminished.

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

1. In a printing-press attachment, as described, the box-frame B, the supporting-arm D, provided with standard E and the actuating-bar F, combined with the carrying-bar G, the presser-foot H, the rack *f*, and pinion *x*, substantially as described.

2. In a printing-press attachment organized for the purpose of automatically handling sheets of paper, the box-frame B, the supporting-arm D, provided with the standard E, the slotted actuating-bar F, with its oblong rack *f* and guideway *g*, the carrying-bar G, the presser-foot H, having rubber facing *m*, and spring *p*, in combination with the pinion *x*, shaft *w*, and pulley *a*, substantially as described.

In testimony that I claim the foregoing as my own I have affixed my signature in the presence of two witnesses.

EDGAR YATES.

Witnesses:

FLORA L. YATES,
GEORGE E. HODGDON.