No. 623,371. Patented Apr. 18, 1899.

# W. C. HOPKINS.

## PAPER PILE JOGGING MECHANISM.

(Application filed Feb. 17, 1898.)

(No Model.)

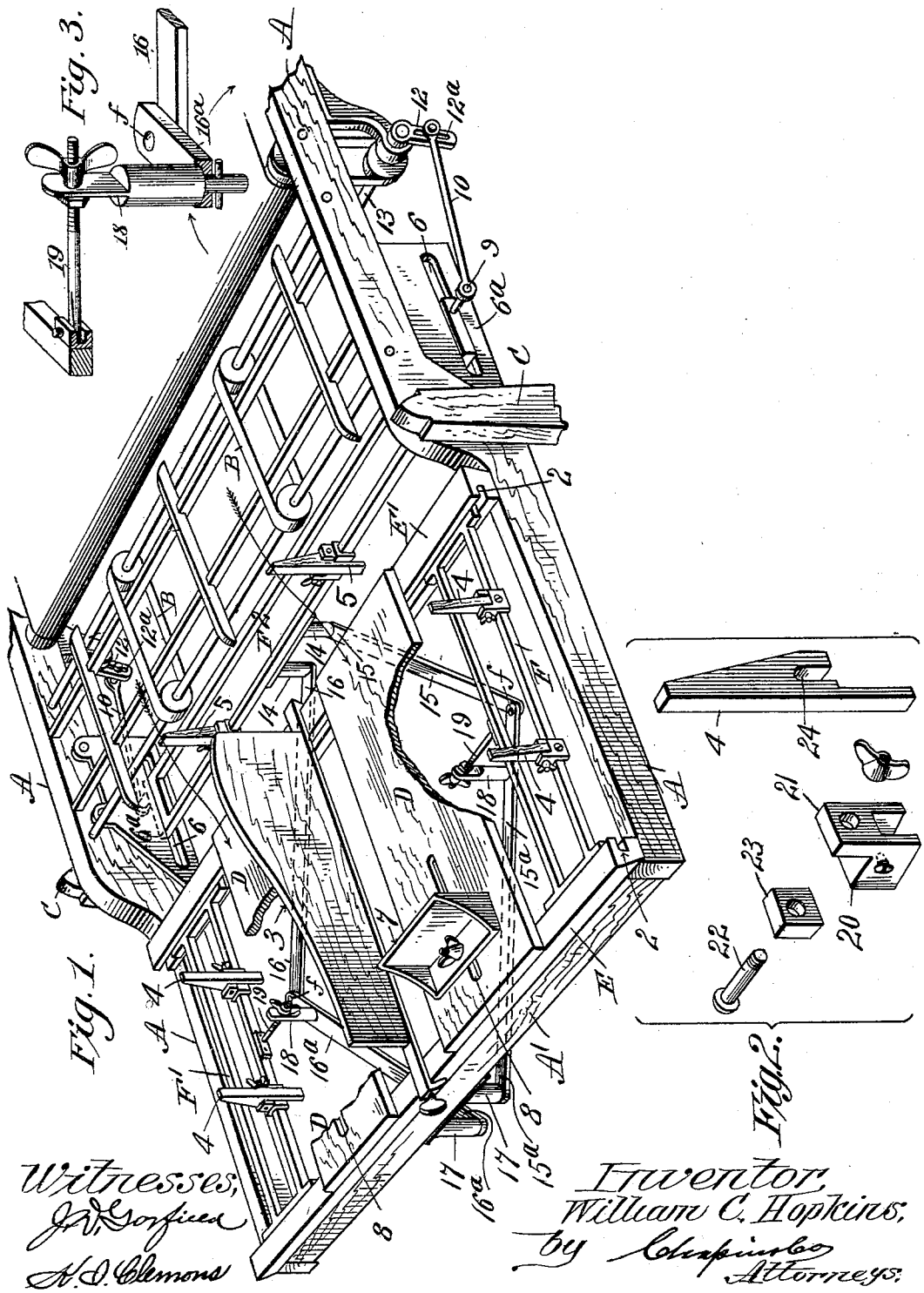


Fig. 1.



Fig. 2.

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# UNITED STATES PATENT OFFICE.

WILLIAM C. HOPKINS, OF HOLYOKE, MASSACHUSETTS.

## PAPER-PILE-JOGGING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 623,371, dated April 18, 1899.

Application filed February 17, 1898. Serial No. 670,664. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM C. HOPKINS, a citizen of the United States of America, and a resident of Holyoke, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Paper-Pile-Jogging Mechanism, of which the following is a specification.

This invention relates to devices for receiving and forming into properly-alined vertical piles sheets of paper delivered from ruling or printing machines, calender-rolls, &c., and has for its object the simplification of and improvement in the mechanism for "jogging" such sheets into proper position against suitable gages on the paper-receiving table and the improvement in ease and accuracy of the adjustment of such mechanism for operating on sheets of varying width and length.

The invention consists in the construction described in the following specification and pointed out in the claim.

In the drawings forming part of this specification, Figure 1 shows a perspective view of the delivery end of a paper-ruling machine having this improved jogging mechanism applied thereto. Fig. 2 shows in perspective the parts constituting one of the paper-engaging fingers. Fig. 3 is a perspective view, enlarged, of the united ends of one pair of toggle-levers and showing their connection to one of the finger-frames.

In the drawings the device is shown adapted to operate on two separate piles of sheets; but the operation thereof on a single pile of sheets is substantially identical with its operation on two piles of paper.

Referring to the drawings, A represents the end of the frame of a paper-ruling machine provided with the usual tapes B, &c. C represents portions of suitable supporting-legs. Between the extremities of said frame parts, which are united by a cross-bar A', are supported suitable bottom boards D. One end of said boards rests on a grooved bar E, secured to the cross-bar A', and the opposite end rests on a grooved bar E', secured to said frame parts A in a position parallel with the grooved bar E. On the inner edges of said bars E E' are grooves 2, in which the ends of the finger-frames F F' fit, and which frames slide freely in said grooves toward and away from each other. As above stated, the application of the invention to the ruling-machine shown in the drawings shows the device constructed for handling two separate piles of paper, and to that end a center gage 3 is provided, which is supported on said grooved bars E E', at right angles thereto. If only a single pile of sheets is to be handled, the gage 3 may be removed and the fingers 4 on the finger-frames F F', working toward each other, will square up the paper sheets between them on two sides, and the fingers 5 on the frame $F^2$, supported in grooves 6 in a plate $6^a$, secured to the frame A, (and which frame $F^2$ moves at right angles to frames F F',) will square up the sheets against the end gages 7, adjustably secured to the bottom boards D, in slots 8 therein. Said frames $F^2$ in the plate $6^a$ project through the latter, and in the ends of said frame are suitable pins 9, to which are pivotally connected one end of the connecting-rods 10, the opposite ends of which are connected to the cranks 12 on a shaft 13, which is rotated by a belt or other driving connection with some rotating part of the machine. Said cranks 12 are slotted, as at $12^a$, whereby the connection of the rods 10 therewith may be adjusted toward and from the center of said shaft 13 for the purpose of varying the length of the stroke of the said jogging-fingers.

The finger-frames F and F' are operated by the movement of the frames $F^2$, the latter, as stated, having reciprocating movements imparted thereto in lines parallel with the movement of the sheets of paper, and like reciprocating movements are imparted to the side frames, as follows: At a point near the center of said frame $F^2$ there is secured thereto two studs 14, to which are pivoted the ends of two links 15 and 16. Said links extend diagonally under the bottom boards D to a point near said finger-frames F and F', and their opposite ends are there pivotally connected at *f* with the ends of similar links $15^a$ and $16^a$, which extend from thence toward points near the center of the cross-bar A' of the frame A, where two studs 17 are secured to said cross-bar, to which studs are pivotally secured the opposite ends of the links $15^a$ and $16^a$, thus forming a toggle-link connection between said actuating-frame $F^2$ and the finger-

frames F F′. At a point near said pivotal point *f* on the link 15ª and the link 16ª are attached the posts 18, through the upper ends of which the screw-rods 19 pass, which ends are provided with suitable thumb-screws, and the opposite ends of said screw-rods are secured to the frames F and F′. By operating a thumb-screw and the lock-nut opposite the latter the finger-frames F and F′ may be brought toward the center gage 3 or moved away from said gage. As shown in Fig. 3, said posts 18 are pivotally secured to the links 15ª and 16ª, whereby freedom of movement may be insured for the connection 19, extending from the post 18 to the finger-frames F and F′, as said links 15ª and 16ª swing on the studs 17. The swivel connection of said posts 18 with the links 15ª and 16ª is necessary, owing to the rigid connection of the rod with the top of said posts.

From the above description it is clear that the rotation of the crank-shaft 13 will cause alternate reciprocatory movements to the finger-frames F, F′, and F², said frames F and F′ moving toward each other and in a direction at right angles to the movements of the frame F², and by means of the screw-rods 19 the side frames may be adjusted relative to the center gage 3 to adapt the device to any size of sheets required. It is thus seen that as the sheets of paper are shot onto the bottom boards D from the tapes B the fingers 4 on the frames F, F′, and F² are alternately moved toward and against the edges of said sheets on the sides thereof opposite the gages 3 and 7 and move them as much or as little as may be required to bring their edges against said gages and form a pile of sheets with true vertical sides. The fingers 4, secured to the said finger-frames, are removably secured to said frames and may be by the construction shown in Fig. 2 moved at will to any desired position on said frames. Said finger construction comprises a saddle 20, adapted to fit over one of the bars of the frames, (which are preferably made of the skeleton form shown,) and said saddle is secured to said frame by a set-screw or other suitable means. A projection 21 on the saddle forms an abutment against which the finger is clamped by a bolt 22, which passes through a block 23 and a hole in the said projection 21, and a thumb-screw on the end of the bolt secures the finger in position, said bolt passing through a slot 24 in said finger to more rigidly support the latter in a vertical position. This particular method of removably securing a finger to the frame is only one of a number of methods that may be used, the manner of securing said finger being unimportant.

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

Mechanism for jogging sheets of paper into vertical piles consisting of a frame suitably supported for a reciprocating movement toward and from one end of a pile of paper, side frames suitably supported for reciprocating movements against the opposite sides of said pile of paper, a crank connection between said first-named frame and a rotating shaft, toggle-levers, one end of which are pivotally attached to said first-named frame and whose opposite ends extend toward said side frames, levers attached pivotally to the frame of the machine by one end and whose opposite ends extend diagonally toward said side frames and are pivotally united to the ends of said first-named levers, a suitable connection between said side frames and said levers, sheet-engaging fingers on said side frames and end frame, and means for moving said end frame, substantially as described.

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