

No. 717,427.

Patented Dec. 30, 1902.

F. S. MATHEWS.

SHEET STRAIGHTENER FOR PRINTING PRESSES.

(Application filed Apr. 7, 1902.)

(No Model.)

Fig. 1.

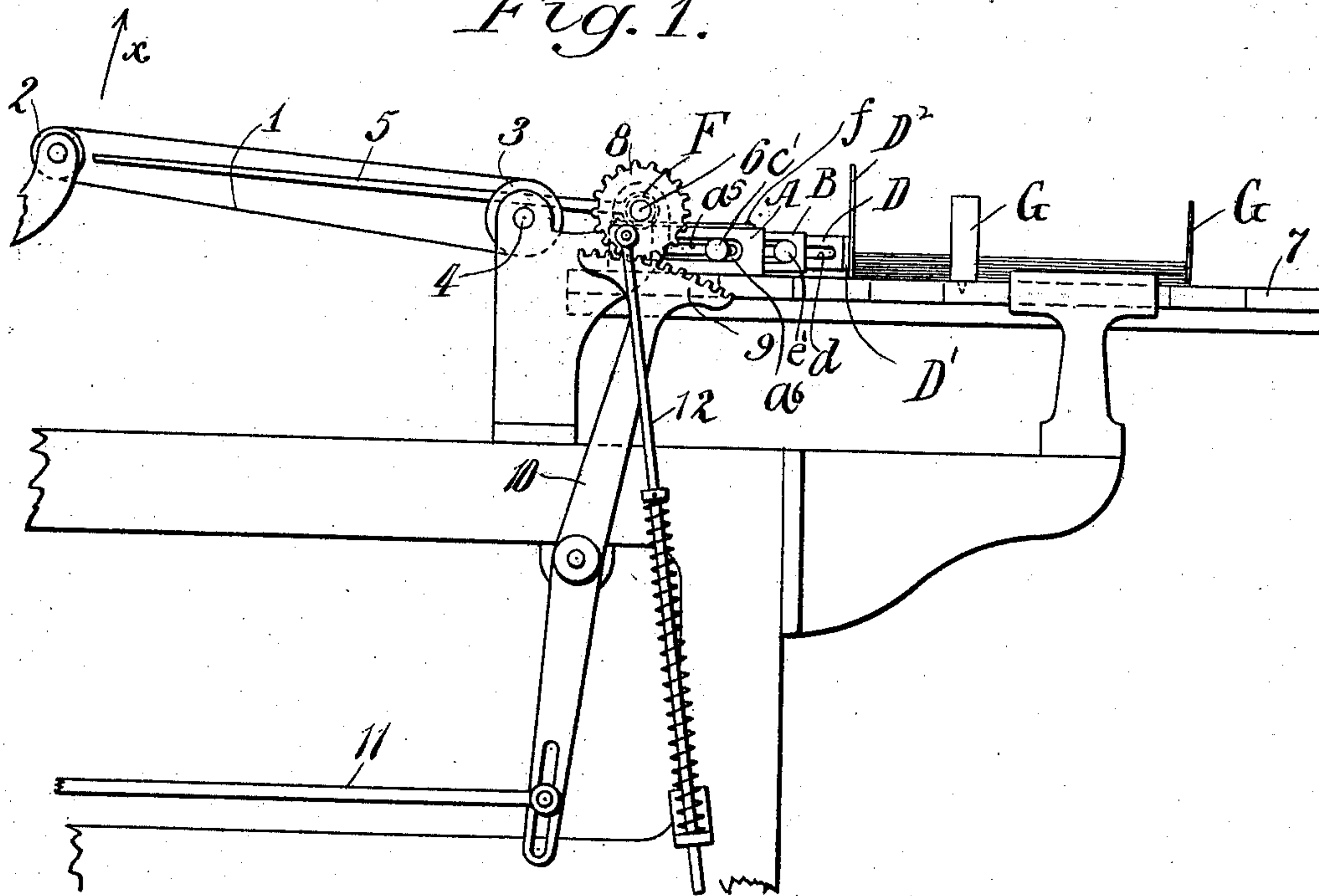


Fig. 2.

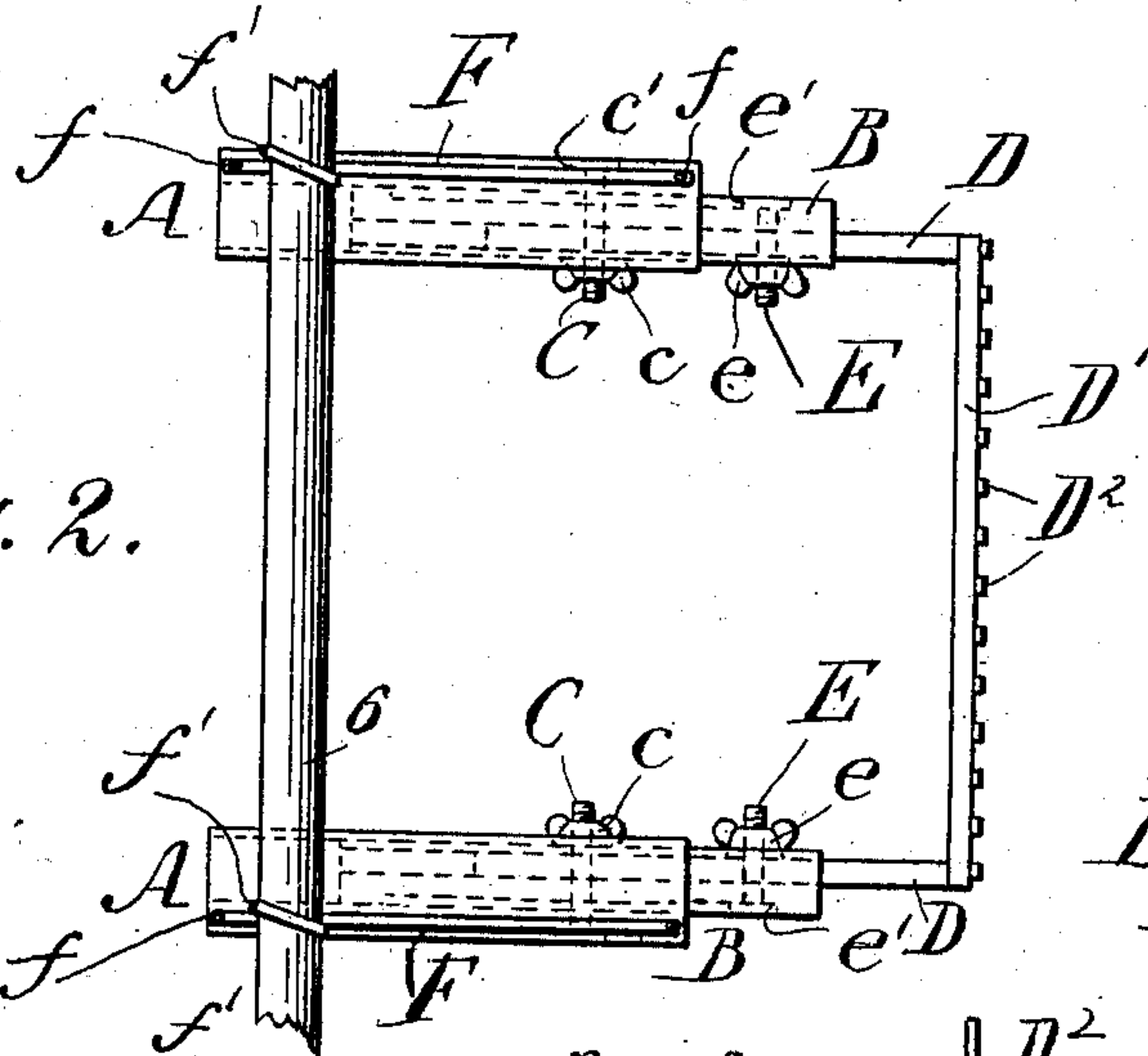


Fig. 3.

WITNESSES:

B. Patterson.
C. Blohm.

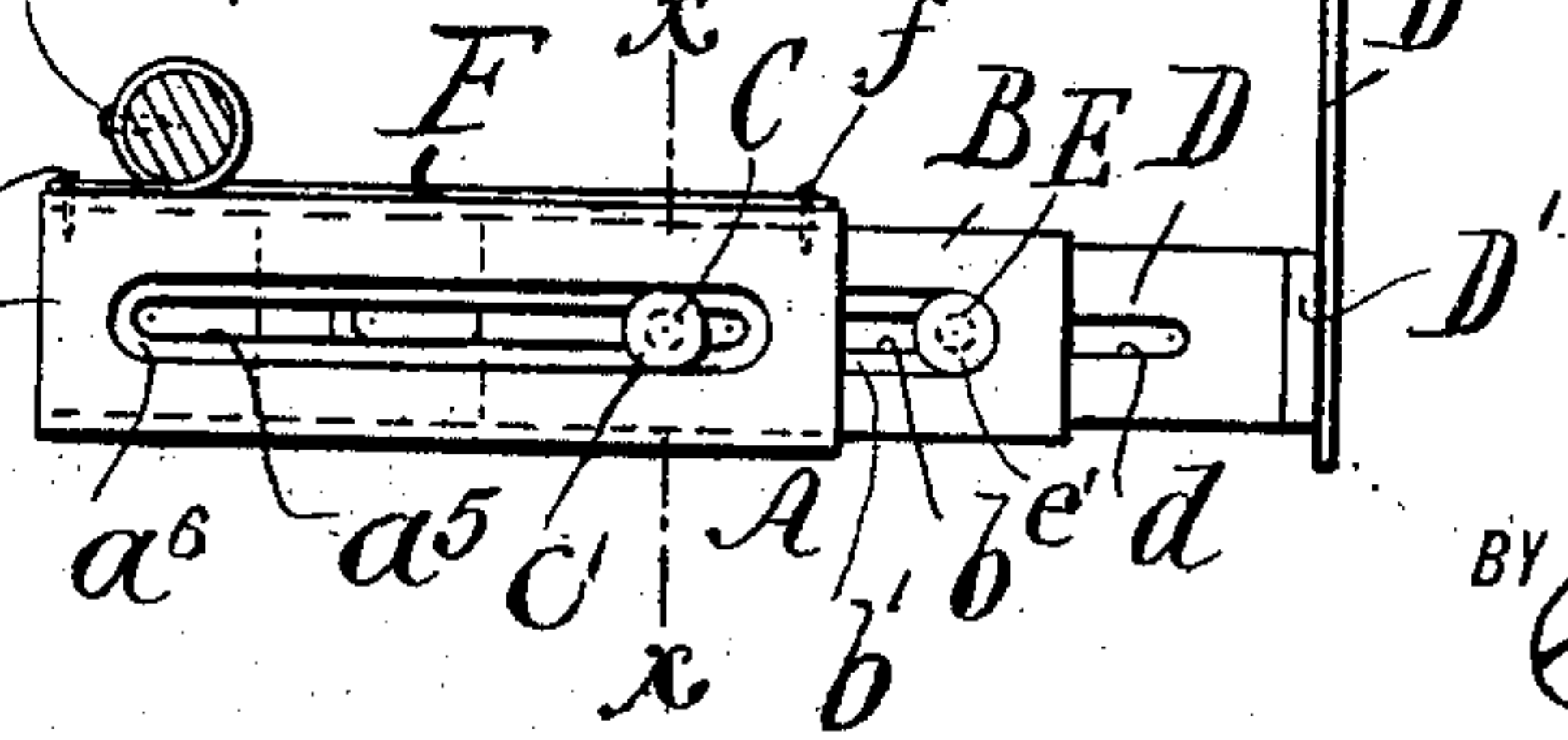
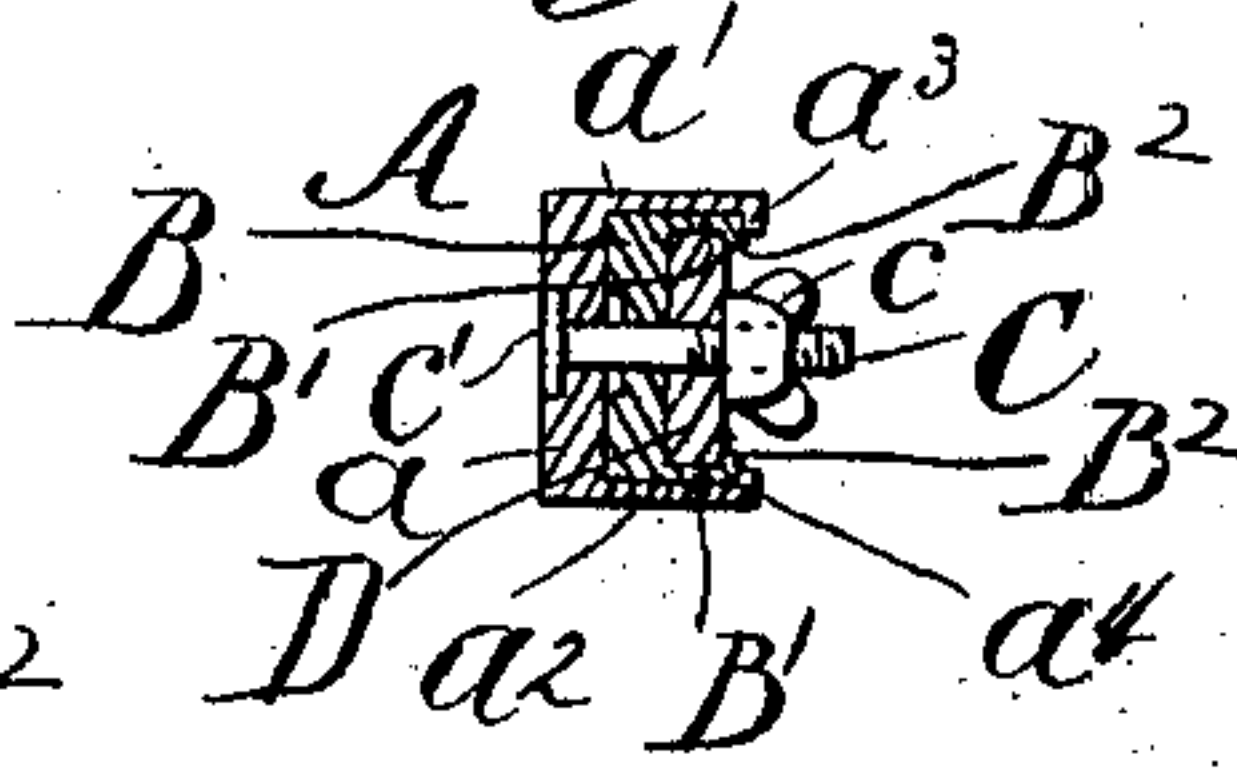


Fig. 4.



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UNITED STATES PATENT OFFICE.

FRANKLIN S. MATHEWS, OF NEW YORK, N. Y.

SHEET-STRAIGHTENER FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 717,427, dated December 30, 1902.

Application filed April 7, 1902. Serial No. 101,744. (No model.)

To all whom it may concern:

Be it known that I, FRANKLIN S. MATHEWS, a citizen of the United States, and a resident of New York, county of New York, and State of New York, have invented certain new and useful Improvements in Sheet-Straighteners for Printing-Presses, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar characters of reference indicate corresponding parts.

This invention relates to adjustable sheet-straighteners for printing-presses, the object thereof being to provide an efficient device of this character which is adapted for use in connection with a cylinder-press to automatically straighten the printed sheets by pushing them forwardly after they are delivered to the fly-table. The device is operated by means of the transverse oscillating shaft which carries the fly, and it embodies few and simple parts adapted for use in connection with any well-known and commonly-used cylinder-press without necessitating the alteration of any of its mechanism, and it is adjustable for the purpose of operating on sheets of various sizes.

The invention will be hereinafter fully described, and specifically set forth in the annexed claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation illustrating the fly-table, fly, and mechanism for operating the same and a part of a printing-press frame having my device attached in operative position. Fig. 2 is a plan view of the device, showing it attached to the oscillating shaft which operates the fly. Fig. 3 is a side elevation thereof, and Fig. 4 a detail vertical sectional elevation taken on the line *x x* of Fig. 3.

It is well known to those familiar with the art of printing that the printed sheets are delivered from the cylinders to an endless conveyor comprising a transverse series of endless cords, as 1, engaging around a roller 2 and forwardly-located pulleys 3, which are mounted upon a shaft 4. The fly, which takes the printed sheets from the said conveyor, embodies a transverse series of fly-sticks, as 5, mounted upon the oscillating

shaft 6, and this shaft is oscillated by means of any common and well-known mechanism adapted to intermittently oscillate the fly whereby it throws the printed sheets over upon the fly-table 7. In the drawings the oscillating mechanism comprises the pinion 8, which is secured to the shaft 6, the toothed segment 9, lever 10, connecting-rod 11, and spring-actuated bar 12; but this mechanism forms no part of my invention and is only illustrated to show the relative arrangement of parts of the press contiguous to and adapted for the operation of my improved device.

In the practice of my invention I provide, primarily, oppositely-located end parts A A. These parts each embody a longitudinal end wall *a* and inwardly-extended top and bottom walls *a'* *a''*. The inner edge of the top wall *a'* is provided with a downwardly-turned flange *a'''* and the bottom wall with an upwardly-turned flange *a''''*, thus forming a grooved way for the reception of adjustable slides, as will be hereinafter described. Each of the said ends is provided with a recess *a⁶* and a longitudinal slot *a⁵*, which registers with a similar slot *b*, formed in a horizontally-adjustable slide B, which is in slidable engagement within the guideway of the end piece A. This slide is also preferably provided with a guideway formed by the walls B' B' and flanges B² B² and which engages a slide D, having a slot *d* registering with the slot *b* of the slide B. A bolt C passes through the end A and the two slides B and D and is secured by the thumb-nut *c*, whereby the parts are securely clamped together, the bolt-head *c'* being countersunk within the recess *a⁶*, so that the said end may slide freely in contact with the inner surface of the frame-work of the press. The slides B and D are also fastened to each other by means of the bolt E and thumb-nut *e*, the bolt-head *e'* being countersunk within the recess *b'* of the slide B.

The object of the slides B and D is to adjust the device for sheets of various sizes, and I may employ any suitable number of them, according to requirements, depending upon the size of the printed sheets. The inner oppositely-located slides D are connected to each other by the transverse plate D'. This

plate acts as a means for pushing the printed sheets after they leave the fly, and the face of the plate is provided with a series of bars D^2 for direct contact with the sheets. The spaces
 5 between these bars admit of the free escape of air from beneath the sheet, thus facilitating the operation of the device. To attach the straightener, I employ at each end a tape or strap F, which is composed of leather or
 10 analogous material, or a chain may be substituted, if found desirable. This strap is secured at each end to the upper surface of the end piece A by means of pins or screws, as f , and it is coiled around and fastened to the
 15 fly-shaft by means of a pin or screw, as f' . Thus the device moves backwardly and forwardly with the oscillations of the shaft.

In the operation and use of the invention when the fly is moved in the direction of the
 20 arrow x to deliver a printed sheet to the fly-table the forward turning of the fly-shaft moves the straightener in a rearward direction, allowing the sheet to drop in front of the plate D' , the spaces between the bars D^2 allowing for full movement of the fly-sticks.
 25 Then by the return or backward movement of the fly-shaft the device is pushed forwardly, whereby the sheet is pushed to a predetermined position upon the fly-table and
 30 arranged upon a straight transverse line parallel with the plate D' . This operation is repeated after the delivery of each sheet, thus automatically arranging them in superposed
 35 piles having their rearward edges exactly registering with each other. The side and front edges of the sheets are kept in place by ordinary angle-plate stops, as G, whereby the necessity of straightening the sheets by
 40 hand is entirely obviated.

I do not confine myself to the specific details of construction and relative arrangement of the parts as herein shown and described, as it is obvious that under the scope
 45 of my invention I am entitled to slight structural variations.

Having now described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. As a sheet-straightener for printing-presses, the combination, with an oscillating
 50 fly-shaft, of the slides comprising longitudinally-adjustable ends and a transverse plate having vertical bars thereon, and straps fastened at their ends to the end parts of the
 55 device and coiled around and fastened to the said shaft, substantially as shown and described.

2. A sheet-straightener for printing-presses, comprising end parts each provided with a
 60 guideway, and longitudinally-adjustable slides and a transverse plate having bars thereon, and straps fastened at their ends to the said end parts and having coils for engagement around a fly-shaft, substantially
 65 as shown and described.

3. As a sheet-straightener for printing-presses, the combination, with the end parts
 70 having guideways, and adjustable slides within said ways and the cross-plate, having bars for contacting with the printed sheets, and means fastening the parts together; of the
 75 straps having coils for engagement around a fly-shaft whereby the devices may be oscillated, substantially as shown and described.

4. As a sheet-straightener for printing-presses, the combination, with the longitudi-
 80 nally slotted and recessed ends having the guideways, the adjustable slotted slides, and bolts and nuts for fastening the parts, and the cross-plate having the vertical bars, of the strap having coils for engagement around
 85 a fly-shaft, whereby the devices may be oscillated, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in pres-
 90 ence of two witnesses, this 1st day of April, 1902.

FRANKLIN S. MATHEWS.

Witnesses:

AUGUST C. REIMER,
 CHARLES BROWER.