

(Model.)

2 Sheets—Sheet 1.

G. W. WRIGHT.

FASTENING FOR DOUBLE DOORS.

No. 333,093.

Patented Dec. 22, 1885.

Fig. 2.

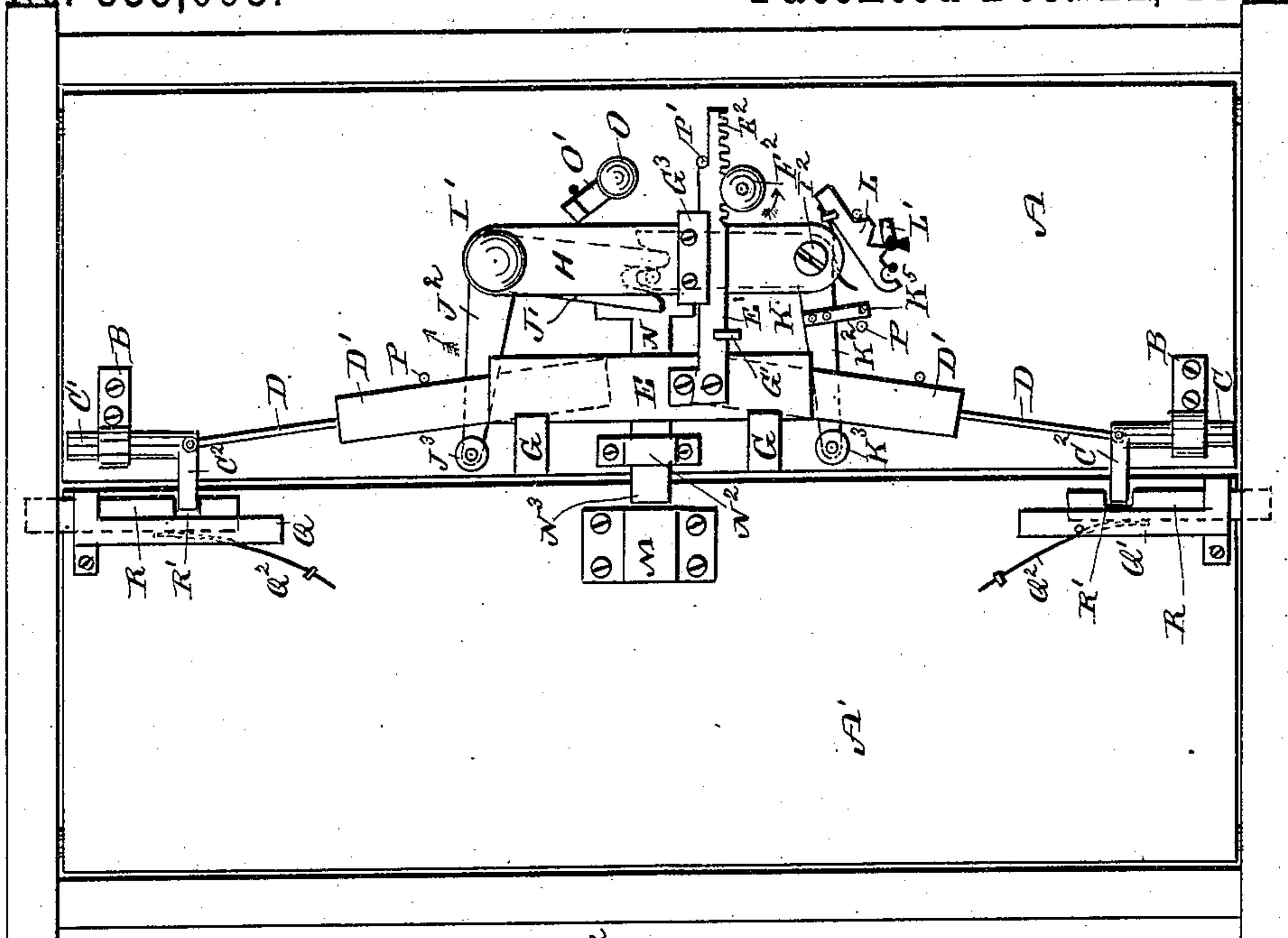
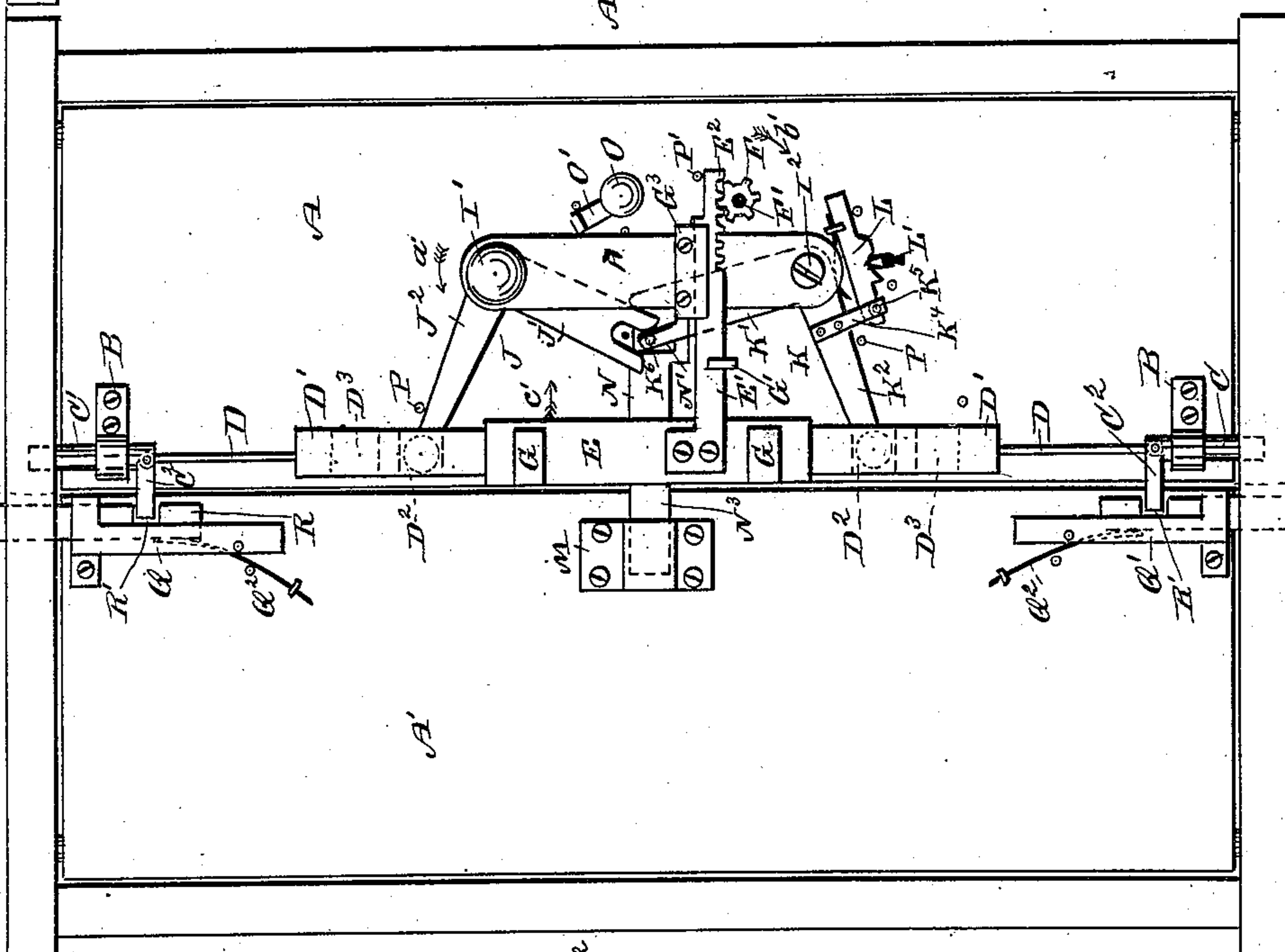


Fig. 1.



WITNESSES:

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C. Sedgwick

INVENTOR:

G. W. Wright
BY *Munn & Co*
ATTORNEYS.

(Model.)

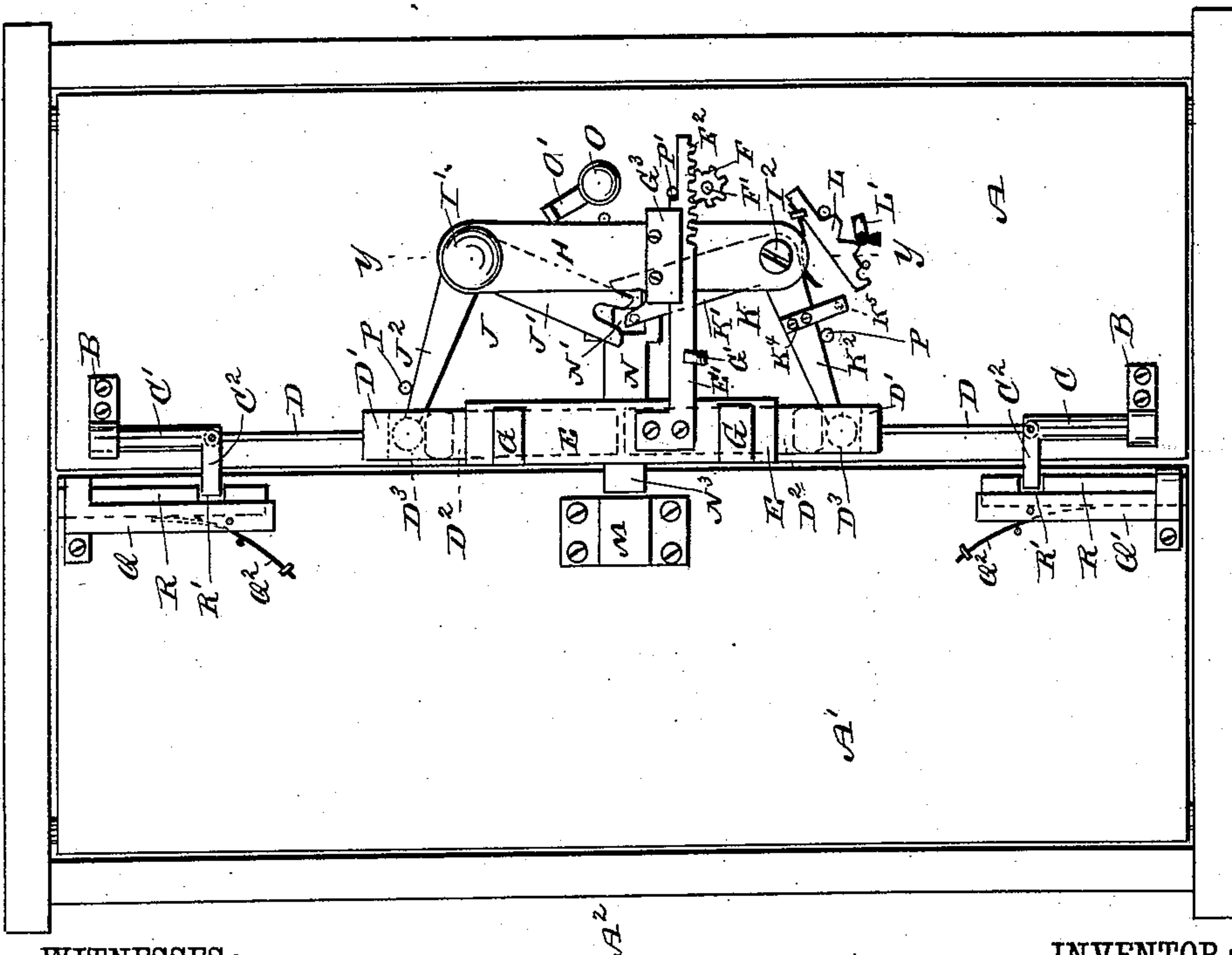
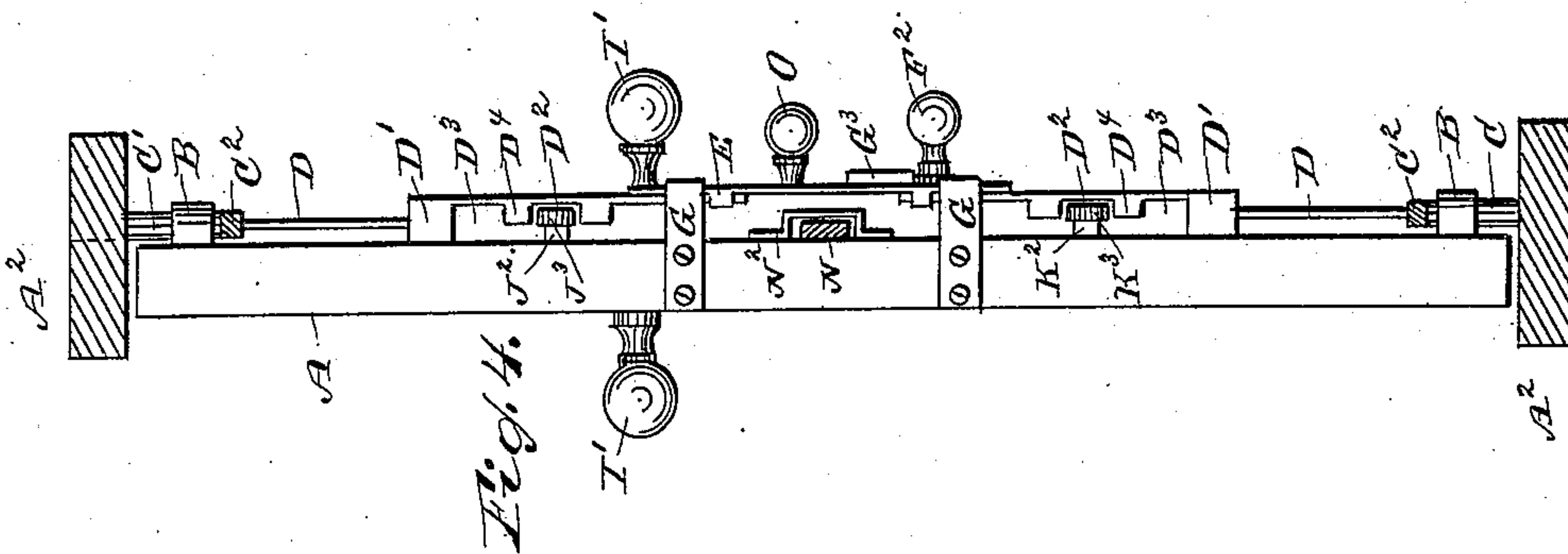
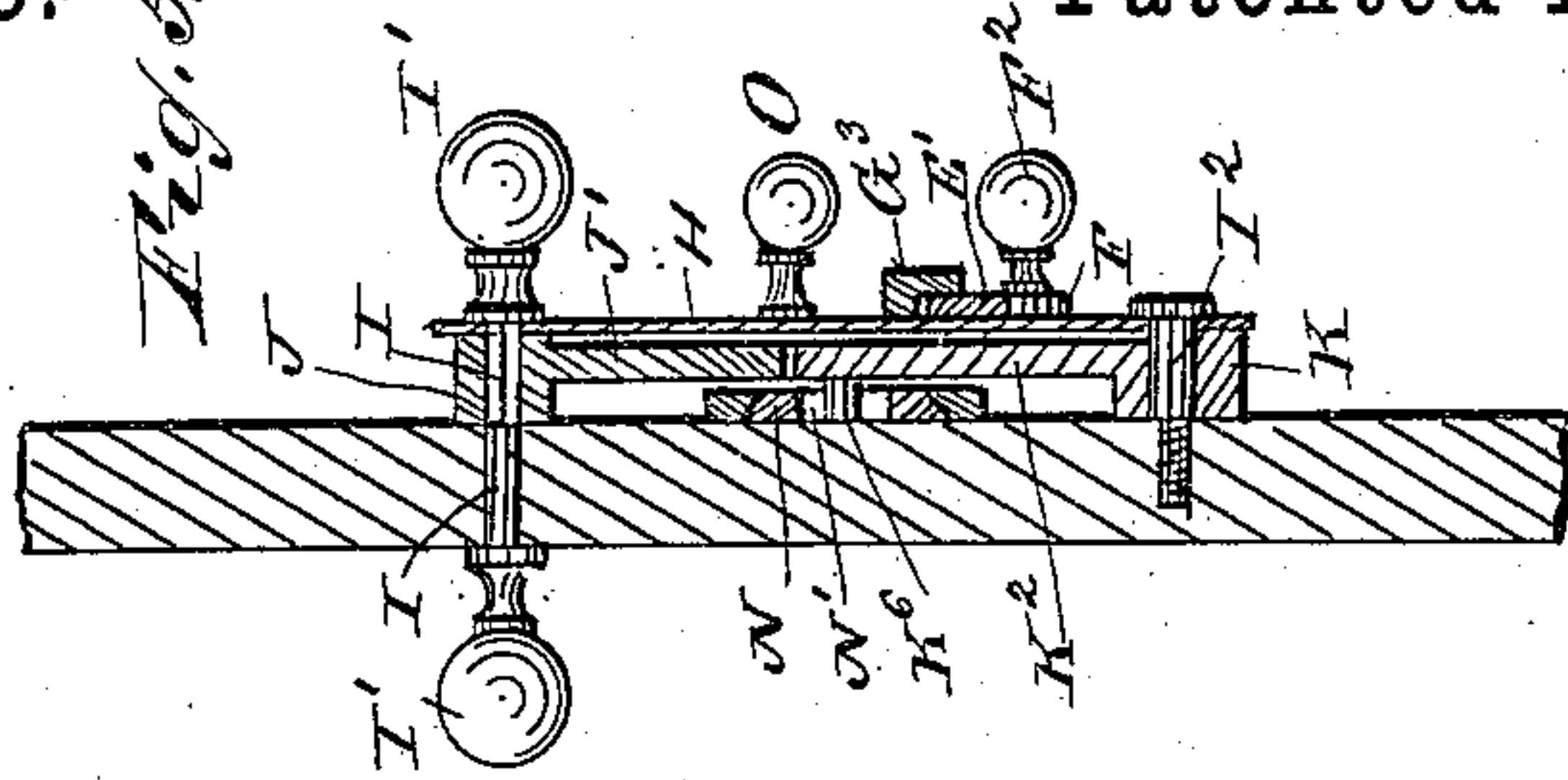
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Fig. 3.

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UNITED STATES PATENT OFFICE.

GEORGE W. WRIGHT, OF LEAVENWORTH, INDIANA.

FASTENING FOR DOUBLE DOORS.

SPECIFICATION forming part of Letters Patent No. 333,093, dated December 22, 1885.

Application filed June 16, 1885. Serial No. 168,880. (Model.)

To all whom it may concern:

Be it known that I, GEORGE W. WRIGHT, of Leavenworth, in the county of Crawford and State of Indiana, have invented a new and Improved Door-Fastener, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved door fastener for securely and conveniently fastening and locking double doors.

The invention consists of a combination and arrangement of bolts and a guiding-plate placed on one door and operated by levers, rack and pinion, of devices for locking the levers when the doors are closed or opened, of arms attached to the bolts, which are placed in recesses of the bolts of the other door, whereby the bolts of one door lock or unlock the bolts of the other door, and of a bolt operated by the levers.

The invention also consists of various parts and details hereinafter more fully set forth and described.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of the inside of a double door, showing my improved door-fastener in a locked position. Fig. 2 is a front elevation of the same, showing one door unlocked. Fig. 3 is a front elevation of the same, showing both doors unlocked. Fig. 4 is a vertical section of the same on the line x of Fig. 1, and Fig. 5 is a vertical section on the lines y y of Fig. 3.

The doors A and A' are hinged to the door-casing A^2 in the usual manner. The door A is provided near its inner edge, at top and bottom, with the bolt-cases B , in which slide the door-bolts C C' , each provided with an arm, C^2 . To each of the door-bolts C and C' is pivoted an arm, D , fastened to a bar, D' , placed in the guiding-plate E , which is provided with an arm, E' , on the outer lower edge of which are formed teeth E^2 , which mesh in corresponding teeth on the pinion F , attached to the shaft F' , which is placed on the door A , and provided with a knob, F^2 , for turning the pinion F . The guiding-plate E is held in slides G G' , and the arm E' is held in the

slide G' , attached to the door A , and in the slide G^3 , secured on the face of the vertical plate H . Through the upper end of the plate H and the door A passes a shaft, I , provided on each end with a knob, I' , on the inside and the outside of the door A . The L-shaped lever J is fulcrumed on the shaft I , and placed between the door A and the plate H , and a similar lever, K , is fulcrumed on the stud I^2 , secured to the lower end of the plate H and the door A . The arm J' of the lever J and the arm K' of the lever K are each provided with forked ends, which mesh into each other, so that when either knob I' is turned the levers J and K move simultaneously. The other arm, J^2 , of the lever J , and the other arm, K^2 , of the lever K are each provided on their outer ends with a roller, J^3 and K^3 , respectively, which are placed in recesses D^2 or D^3 on the bar D' . These recesses D^2 and D^3 are formed in the under side of the bars D' , having a portion D^4 between them. The arm K^2 is provided with an arm, K^4 , having a pin, K^5 , which can be engaged by the locking device L , of suitable construction, and operated by a key, L' , so that the lever K , and consequently the lever J , can be held locked, as shown in Fig. 1, or unlocked, as shown in Figs. 2 and 3, by the device L . To the forked end of the arm K' of the lever K is attached a stud, K^6 , which extends into a recess, N' , formed on the bolt N and slides the bolt N forward or backward, according to the motion of the levers J and K . The bolt N is held in place by the guide N^2 , secured to the door A , and the outer end, N^3 , of the bolt N reaches over to the door A' , when both doors A and A' are in a locked condition, and enters the keeper M , secured to the door A' . The door A is provided with a shaft, to which is attached the knob O and an arm, O' , to lock the arm J' of lever J when the door A is open. The door A is also provided with suitable stops, P and P' , to limit the movement of the lever-arms J^2 and K^2 , and a stop, P' , to limit the motion of the arm E' . The door A' is provided near its inner edge, at the top and bottom, with the bolt-cases Q and Q' , in each of which is placed a bolt, R , held in place by a spring, Q^2 . The bolts R are each provided with a recess, R' , in which are placed the outer ends of the arms C^2 of the bolts C and C' . When both doors A

and A' are locked, as shown in Fig. 1, the ends of the bolts C, C', and R are engaged in recesses or sockets formed in the door-frame.

The operation is as follows: The door A is unlocked by turning the knob I' in the direction of the arrow a', Fig. 1, whereby the bolts C C' are drawn toward each other and released from the recesses in the door-frame by means of the lever-arms J² and K² acting on the bars D' D', with the rollers J³ and K³, engaged in the recesses D² D³ of the bars D' D'. The movement of the levers J and K also causes the bolt N to be withdrawn from the keeper M on the door A'. The door A is now unfastened and can be swung open.

To unlock the door A' by the fastening device of the door A, it is necessary that the door A is not swung open, but left in the unlocked position, as before described, so that the arms C² of the bolts C and C' remain in their respective recesses R' of the bolts R, and the ends of the latter, extending beyond the ends of the bolts C and C', are not yet released from their recesses in the door-frame. The pinion F is turned by turning the knob F² in the direction of the arrow b', Fig. 1, whereby the arm E' and the guiding-plate E are caused to slide in the direction of the arrow c' and attain the position shown in Fig. 2. The bars D' D' are thereby placed in an inclined position, and the rollers J³ and K³ are displaced from the recesses D² in the bars D' D'. The knob I' is now turned in an opposite direction from the arrow a', so that the levers J and K assume the same inclined position, as shown in Fig. 1, and the motion of the pinion F being reversed, causes the guide-plate E and the bars D' D' to resume their former position; but the rollers J³ and K³ will now enter the recesses D³ on the bars D' D', as shown in Fig. 3, and when the knob I' is again turned in the direction of the arrow a' it will cause the bolts R R to be withdrawn from their respective recesses in the door-frame by means of the arms C² of the bolts C and C', and the rods D and bars D' D' being drawn toward each other by the action of the levers J and K with their rollers J³ and K³ in the recesses D³ of the bars D' D', both doors A and A' can now be swung open.

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

1. In a door-fastener, the bolts C and C', the pivoted rods D, and the bars D', having recesses D² and D³, in combination with the levers J and K, substantially as shown and described.

2. In a door-fastener, the bolts C and C', the pivoted rods D, the bars D', having recesses D² and D³, and the guiding-plate E, in combination with the levers J and K and the rollers J³ and K³, substantially as shown and described.

3. In a door-fastener, the bolts C and C', the pivoted rods D, the bars D', the guiding-plate E, and the arm E', provided with teeth E², in combination with pinion F, the shaft F', and the knob F², substantially as shown and described.

4. In a door-fastener, the bolts C and C', the pivoted rods D, the bars D', having recesses D² and D³, the levers J and K, the guiding-plate E, the arm E', and the teeth E², in combination with the pinion F, the shaft F', and the knob F², substantially as shown and described.

5. In a door-fastener, the bolts C and C', the pivoted rods D, the bars D', having recesses D² and D³, the guiding-plate E, the levers J and K, the shaft I, the knobs I', the arm K⁴, and the pin K⁵, in combination with the locking device L, substantially as shown and described.

6. In a door-fastener, the levers J and K, having the arms J' and K', forked at their ends, and the pin K⁶, in combination with the bolt N, having a recess, N', substantially as shown and described.

7. In a door-fastener, the bolts C and C', the arm C², the pivoted rods D, the bars D', having recesses D² and D³, the guiding-plate E, and the levers J and K, in combination with the bolts R, having the recesses R', substantially as shown and described.

8. In a door-fastener, the bolts C and C', the arms C², the pivoted rods D, the bars D', having the recesses D² and D³, the rollers J³ and K³, the levers J and K, the shaft I, the knobs I', the guiding-plate E, the arm E', the teeth E², the pinion F, the shaft F', and the knob F², all arranged and operating substantially as described, in combination with the bolts R, having the recess R', the bolt-case Q, and the spring Q², substantially as set forth and described.

GEORGE W. WRIGHT.

Witnesses:

ROBERT H. KAMP,
ROBERT ROACH.