

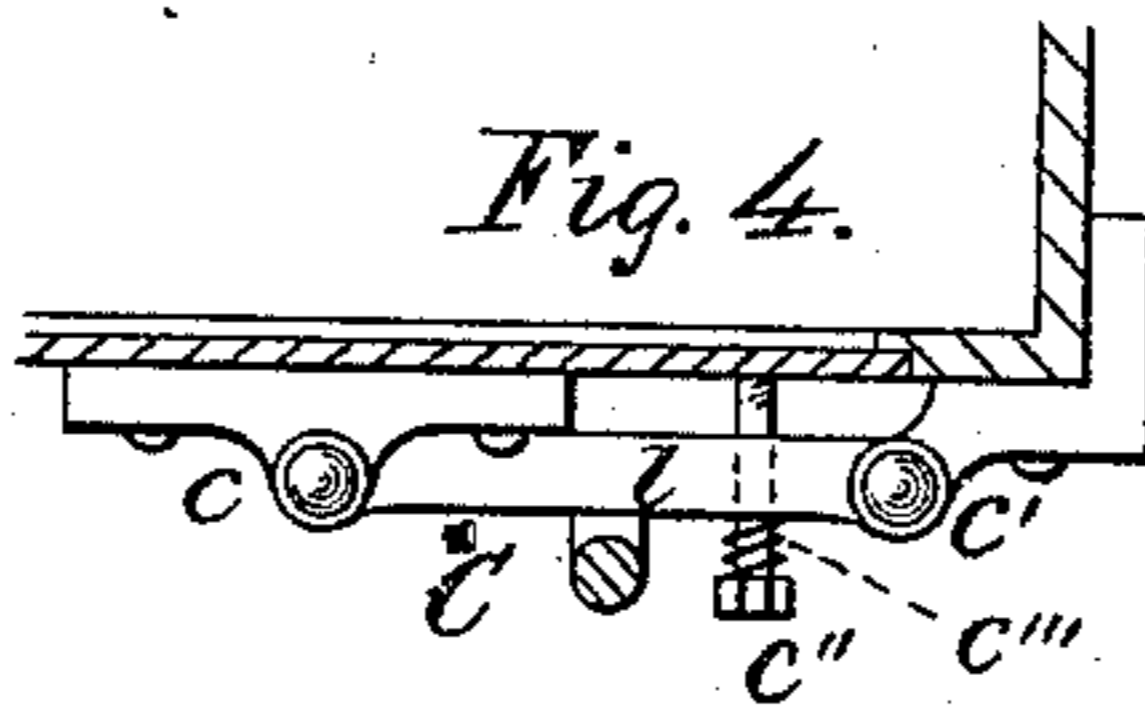
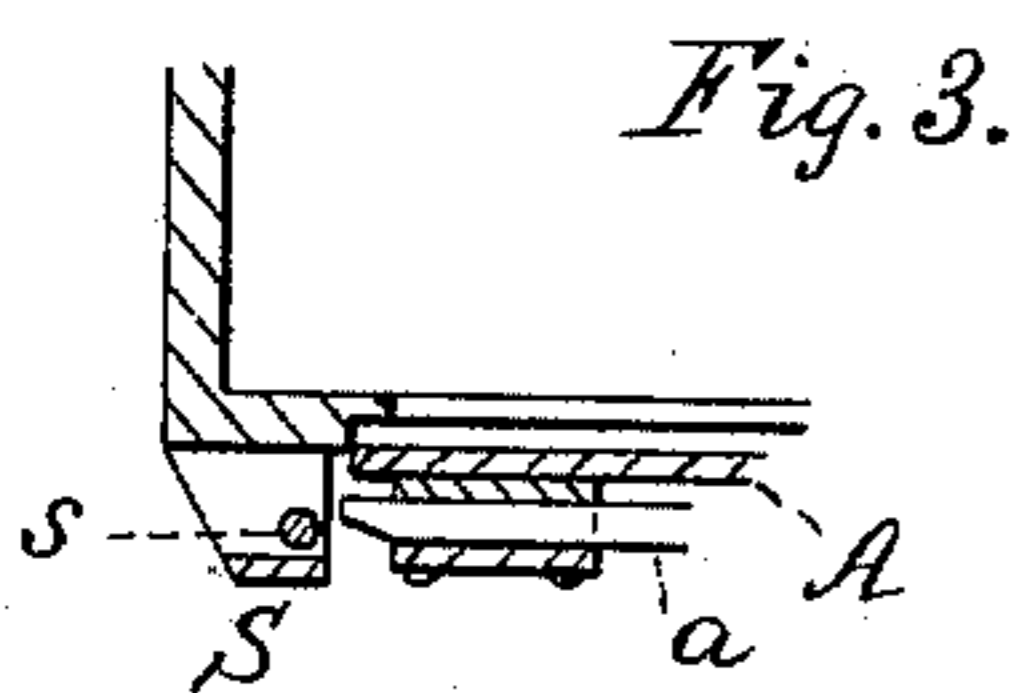
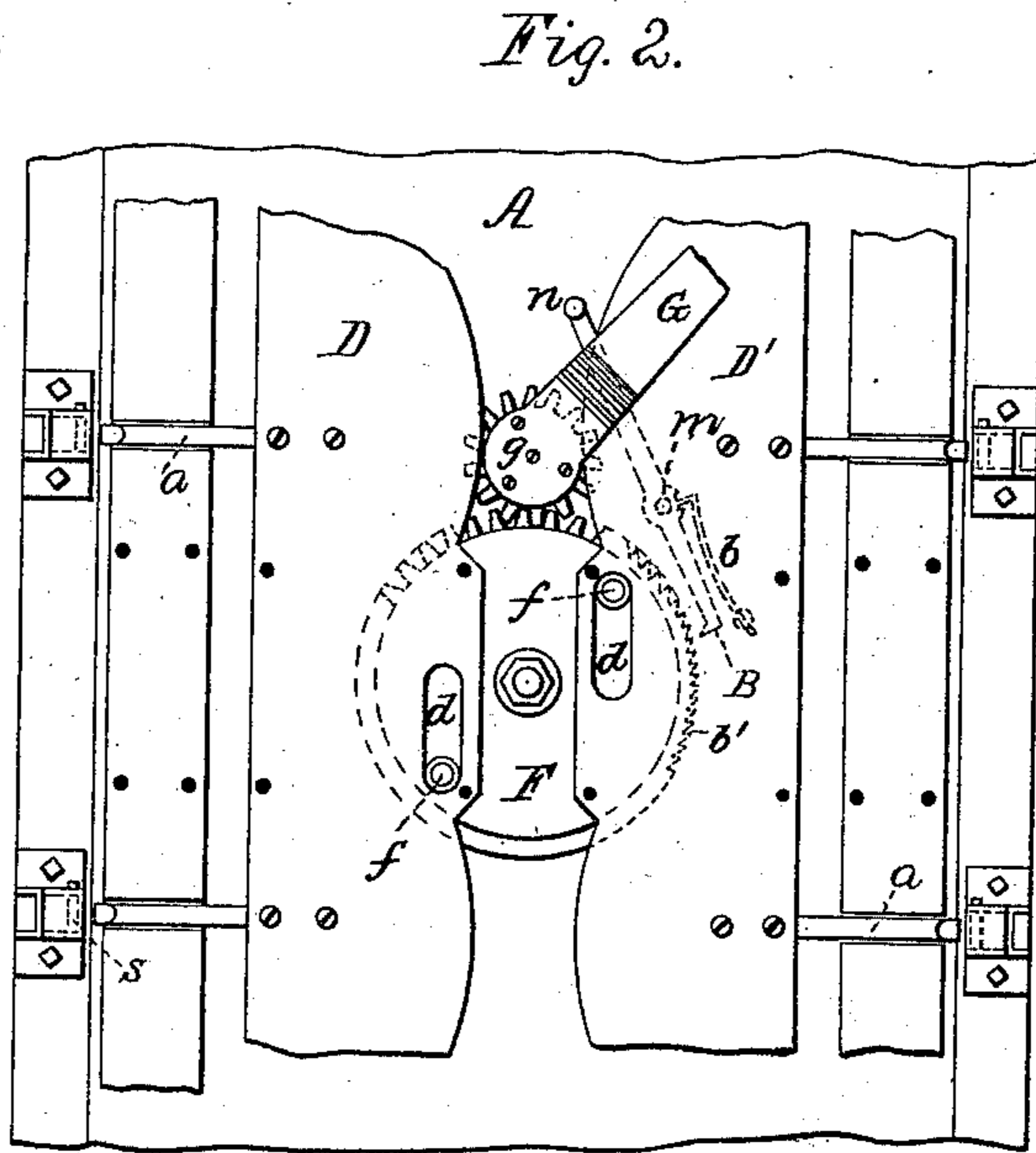
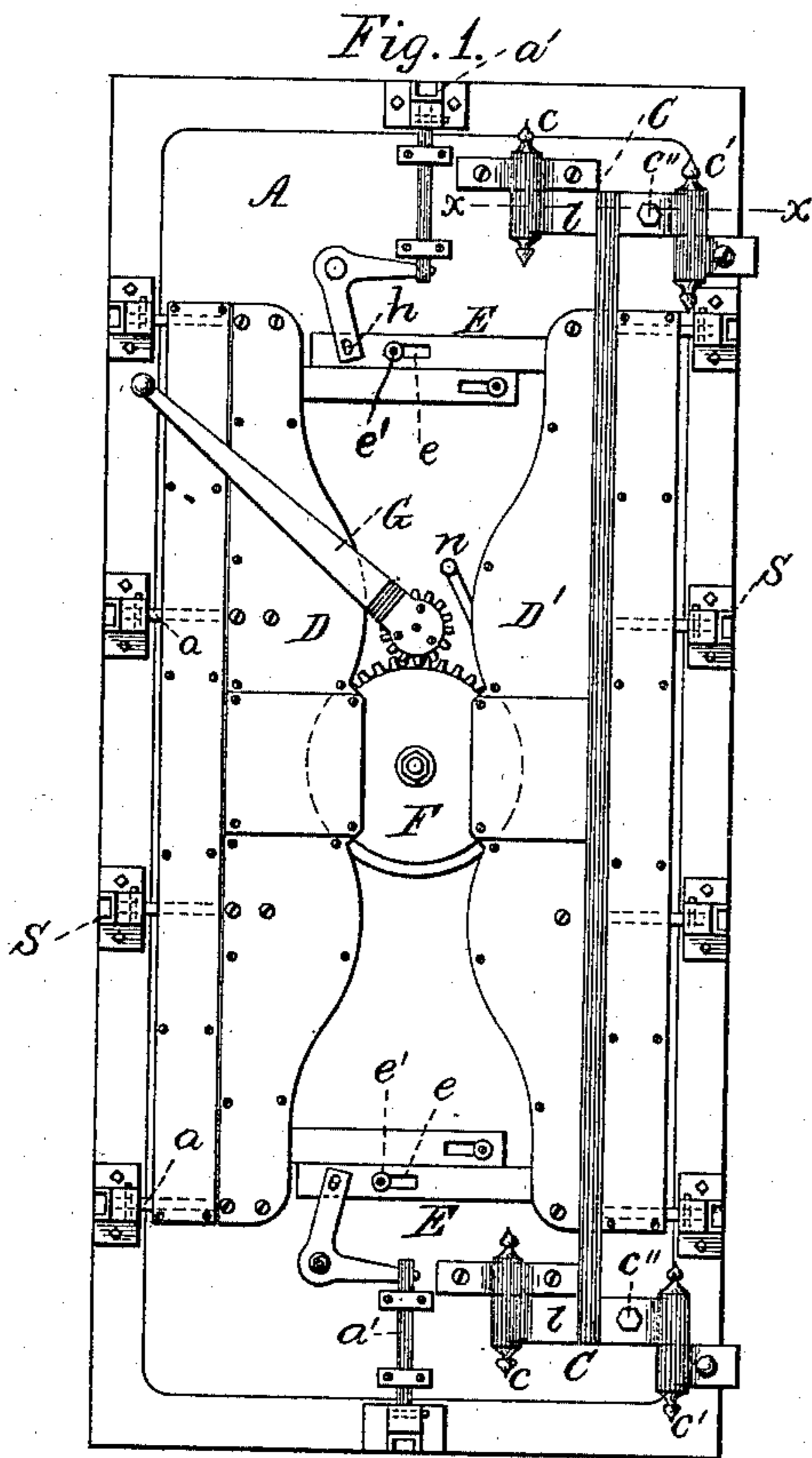
(No Model.)

C. RIPPE.

BOLTING DEVICE FOR PNEUMATIC CABINETS, &c.

No. 368,784.

Patented Aug. 23, 1887.



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UNITED STATES PATENT OFFICE.

CHARLES RIPPE, OF CINCINNATI, OHIO, ASSIGNOR TO J. A. W. PINE, OF SAME PLACE.

BOLTING DEVICE FOR PNEUMATIC CABINETS, &c.

SPECIFICATION forming part of Letters Patent No. 368,784, dated August 23, 1887.

Application filed October 21, 1886. Serial No. 216,802. (No model.)

To all whom it may concern:

Be it known that I, CHARLES RIPPE, a citizen of the United States, residing in the city of Cincinnati, in the county of Hamilton, in the State of Ohio, have invented a new and useful Improvement in Closing and Locking Devices, of which the following is a specification.

My invention relates to and is especially, though not exclusively, adapted to closing and locking pneumatic cabinets and other air-tight chests; and it consists of a novel device for operating bolts simultaneously in several directions.

In the drawings, Figure 1 is a front view showing my invention applied to a pneumatic cabinet. Fig. 2 is a front view of the central portion of same with caps removed, showing driving-wheel, pins, and slots. Fig. 3 is a sectional view of one of the beveled bolts and friction-rollers. Fig. 4 is a sectional view taken on the line *x x*, Fig. 1.

A represents a door of a pneumatic cabinet, hung upon hinges C C, attached at *c* and *c'*, so as to allow the door to shut squarely into the casement, and *c'' c''* bolts to prevent the door rotating on its front hinges when open.

D D' represent front and back carrying-bars provided with bolts *a a* and *a' a'*, having beveled edges taking into sockets S S on the casement, bearing against friction-rollers *s s*, placed within the sockets S S. These friction-rollers tend to do away with a large part of the friction, to prevent wearing away the bolts, and to press the door tightly against a rubber cushion placed in the seat of the door, making it air-tight. The bolts *a a* are operated directly by the carrying-bars D and D', and *a' a'* by the back carrying-bar, D', by means of connecting-bar E, rigidly attached at one extremity to the carrying-bar D' and the other extremity pivotally attached by a pin, *h*, to one arm of the bell-crank, the other arm of the bell-crank being attached in a similar manner to the heel of the bolts *a' a'*.

e represents a slot in the connecting-bar E, receiving a pin, *e'*, which serves to support and guide the connecting-bar E.

F represents a driving-wheel provided with pins *f f*, having sleeves loosely mounted thereon and taking into slots *d d* in the car-

rying-bars. The pins and slots may be reversed—i. e., slots in the wheel and pins on the carrying-bars.

G is a lever pivoted at *g*, having a cog-disk on its head gearing into corresponding cogs on the periphery of the driving-wheel F. When the driving-wheel F is turned by moving the lever to the left, the pins *f f* drive the carrying-bars and bolts thereto connected outward toward the casement of the cabinet and force the bolts into their sockets. Then, on turning the lever to the right, a reverse movement is obtained and the bolts are withdrawn.

B is a pawl pivoted at *m*, upon which the spring *b* acts either to hold it in the interdental spaces *b'* on the periphery of the driving-wheel F, to prevent the driving-wheel from turning backward when the cabinet is locked, or to hold the pawl from engaging in the interdental spaces when desired. It may be thrown into and out of engagement by moving the arm *n* up or down. The spring bears upon the pawl over its pivotal point *m* on the convex arc of the circle, so that when the arm *n* is pushed downward the stress of the spring is exerted toward keeping it out of engagement, and when the arm is pushed upward the stress of the spring is exerted toward keeping it in engagement.

In Fig. 4, *c''* represents a bolt passing through the arm *l* of the hinge of the door A, between the points of its attachment *c* and *c'*, and entering or piercing the door A. The bolt *c''* has a spring, *c'''*, coiled about it between the hinge and its head. The object of the spring and bolt is to draw the bar of the door toward this arm *l* and preserve their parallelism as the door swings open or shut, thus making the rear hinge-joint the pivotal point of oscillation as far as practicable, while admitting of movement on the inner hinge-joint when swung. This avoids the wearing of the rubber packing, which would be incident to swinging the door on the hinge-joint *c* in a shorter arc, and also prevents the door rotating on its front hinge-joint when open.

While I have described a lever as the means of rotating the driving-wheel and prefer it for that purpose, that wheel may be propelled by a crank or any other agency.

I claim as my invention—

1. In combination with the laterally-moving carrying-bars and bolts mounted thereon, the drive-wheel engaging with said carrying-bars and actuating them laterally, whereby the bolts
5 are forced into their seats and withdrawn therefrom.

2. The combination of the door, the laterally-moving carrying-bars, beveled bolts
10 mounted thereon, the anti-friction bearings for said bolts, and the drive-wheel engaging with said carrying-bars and actuating them laterally, whereby said door is forced into and retracted from its seat.

3. The combination of carrying-bars, bolts
15 mounted thereon, drive-wheel engaging with and imparting reciprocal movement to said carrying-bars, and spring-actuated pawl balanced to engage with and lock said drive-wheel and to remain out of engagement when
20 tripped backward.

4. In combination with a laterally-moving

carrying-bar, the bell-crank pivotally connected by one of its arms to said carrying-bar and by the other to the heel of a bolt, whereby the movement of said bolt is controlled by
25 the movement of said bar.

5. In combination with the door and arm of the double hinge, a spring-connection intermediate of the two joints of the hinge whose stress is exerted toward preserving the parallelism of the door and hinge.
30

6. The combination of the door, the double hinge, the bolt connecting the hinge-arm and door intermediate of the hinge-joints, and the spring mounted on said bolt and exerting its
35 stress upon the hinge-arm, for the purpose described.

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Witnesses:

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