

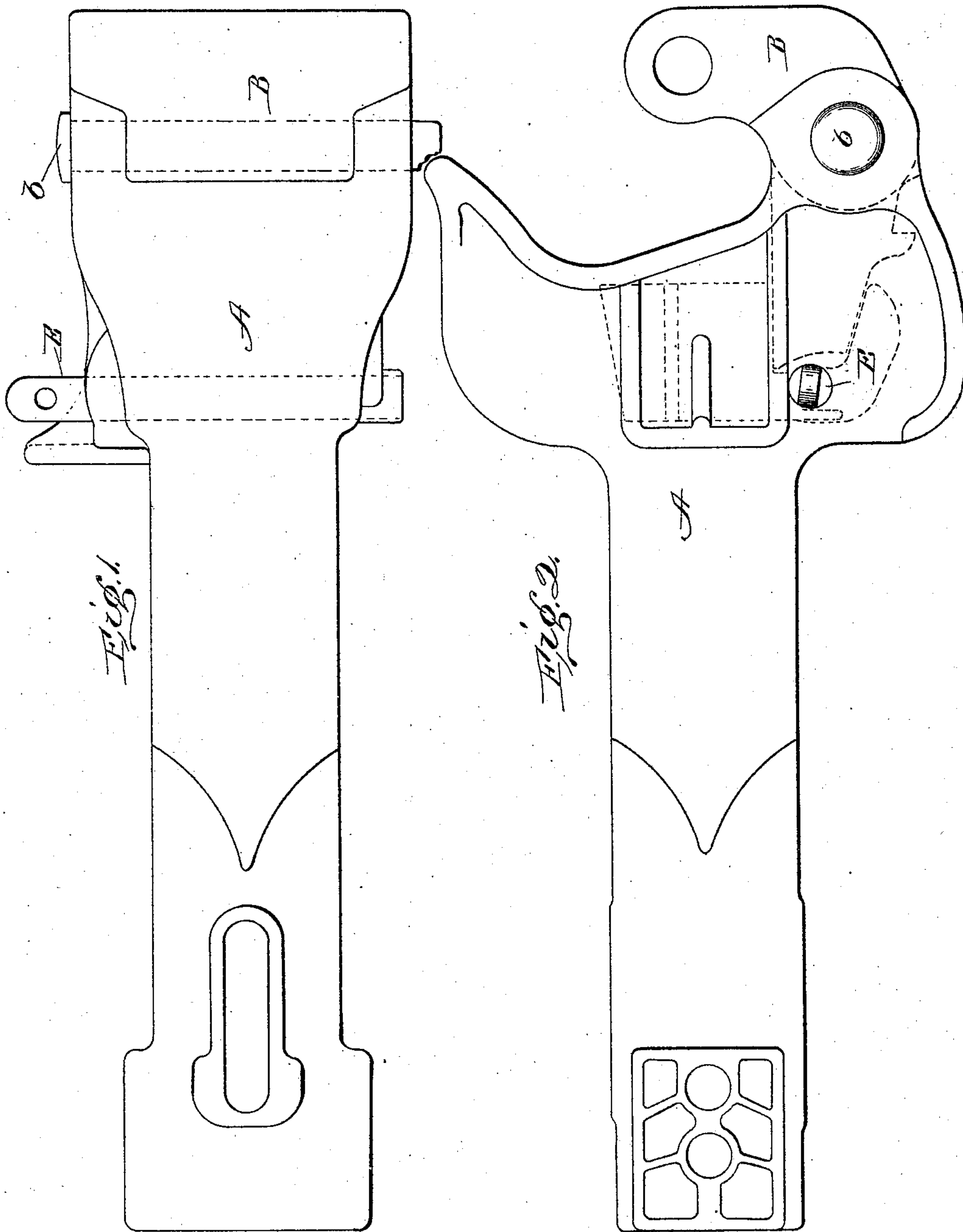
(No Model.)

4 Sheets—Sheet 1.

R. C. TURNBULL.
CAR COUPLING.

No. 576,008.

Patented Jan. 26, 1897.



Witnesses:
J. M. Fowler
Thomas Durant

Inventor:
Robert C. Turnbull
by *Chubb & Chubb*
his Attorneys

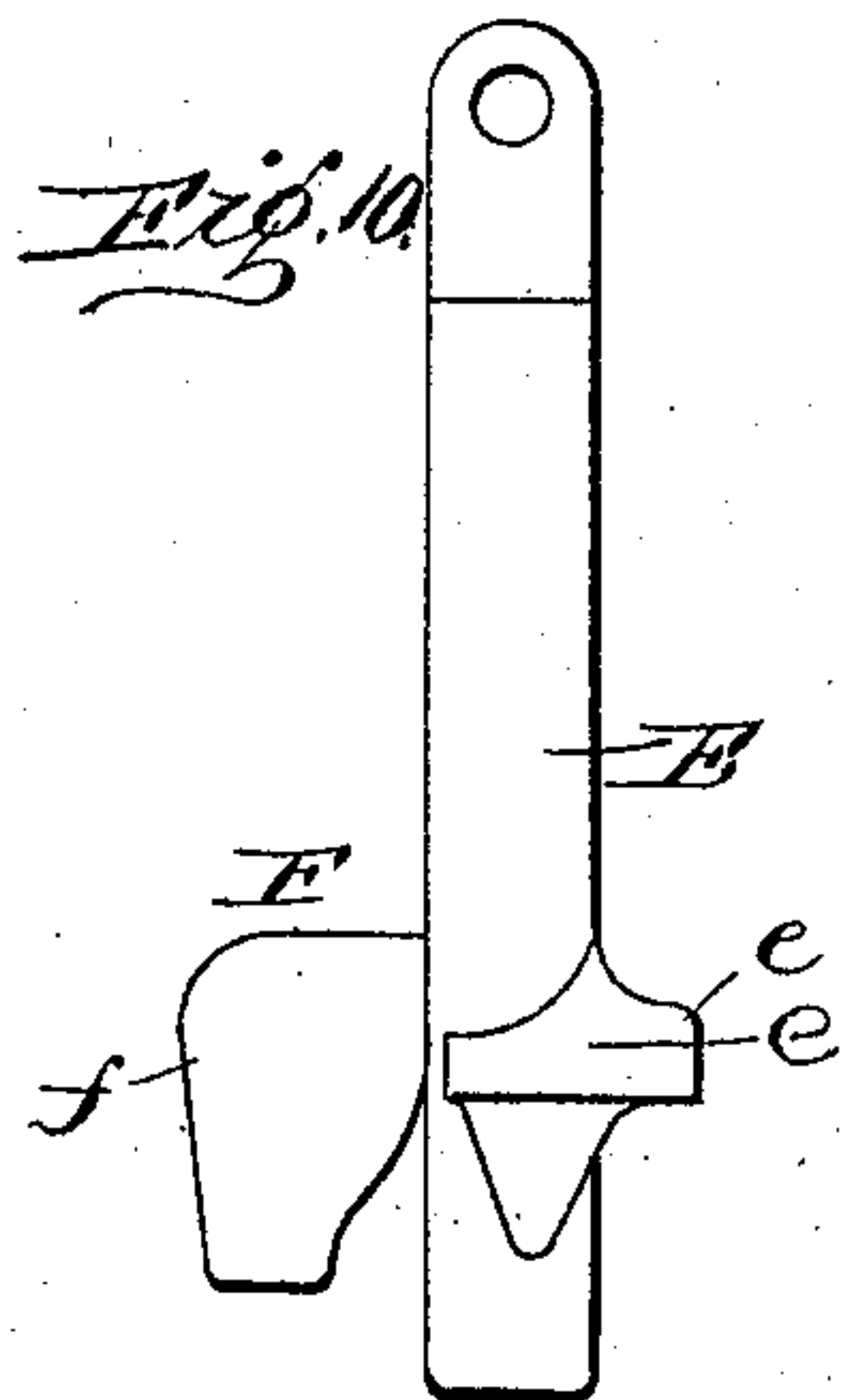
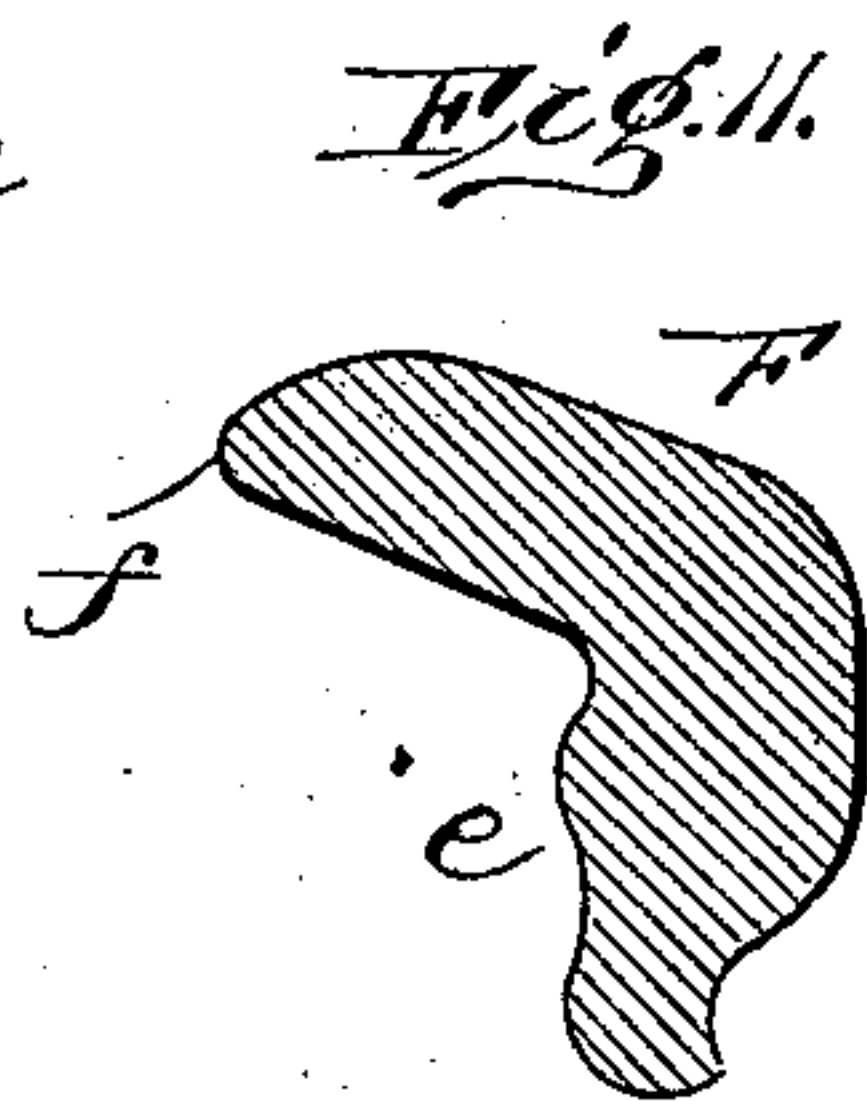
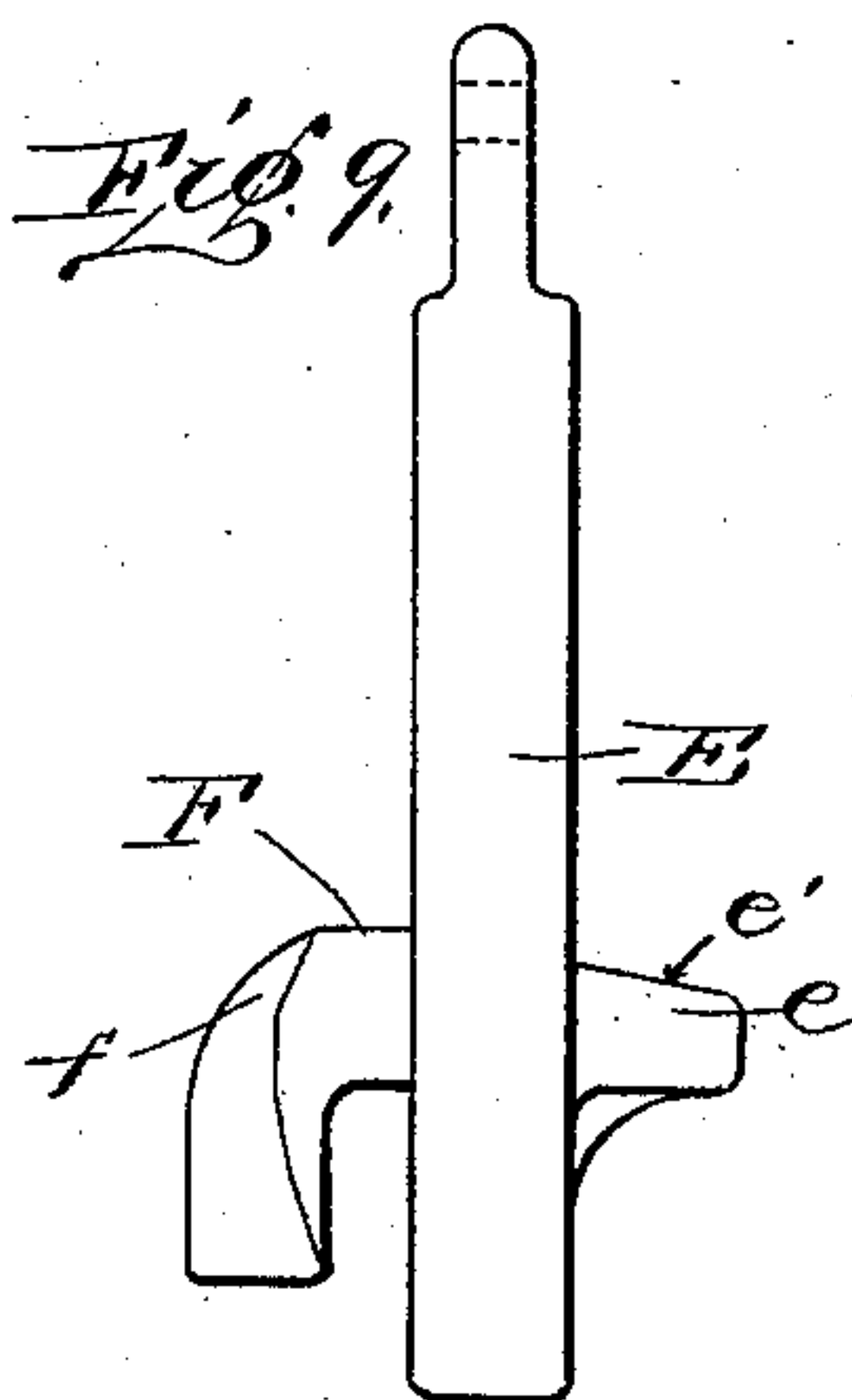
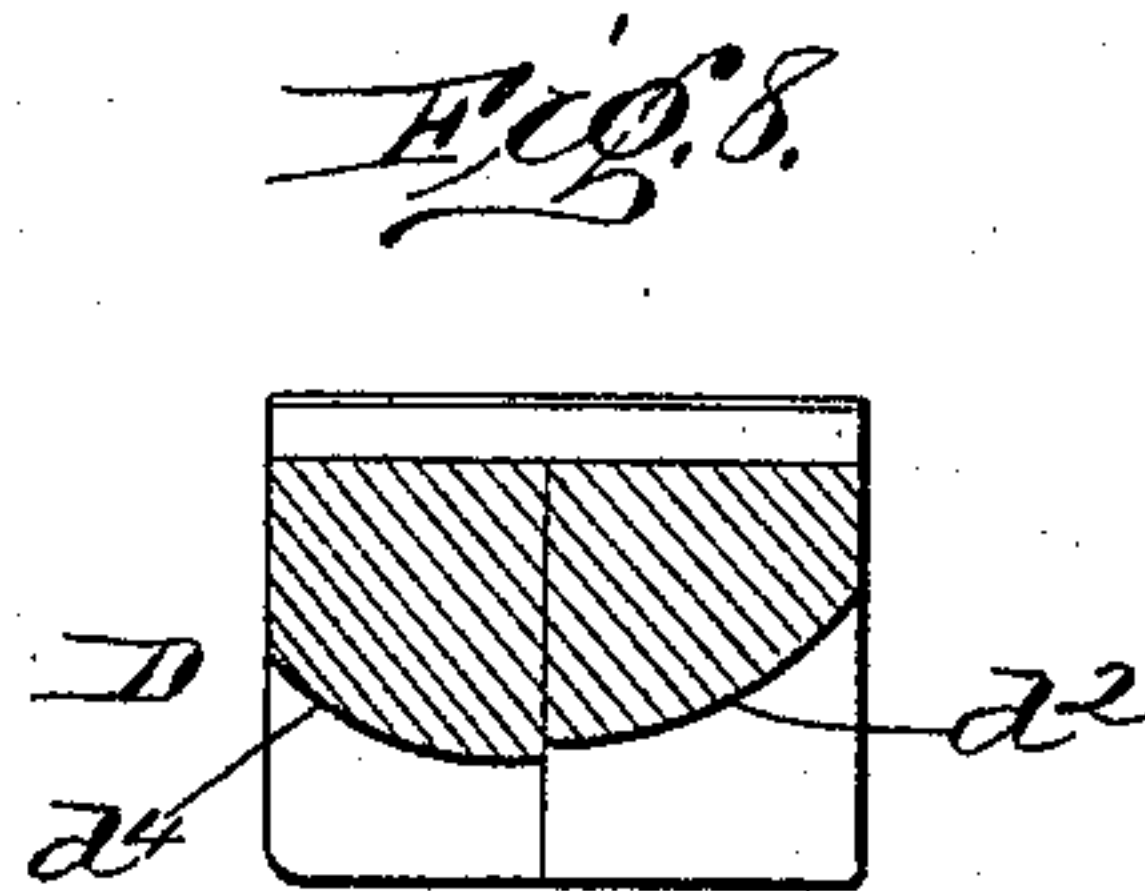
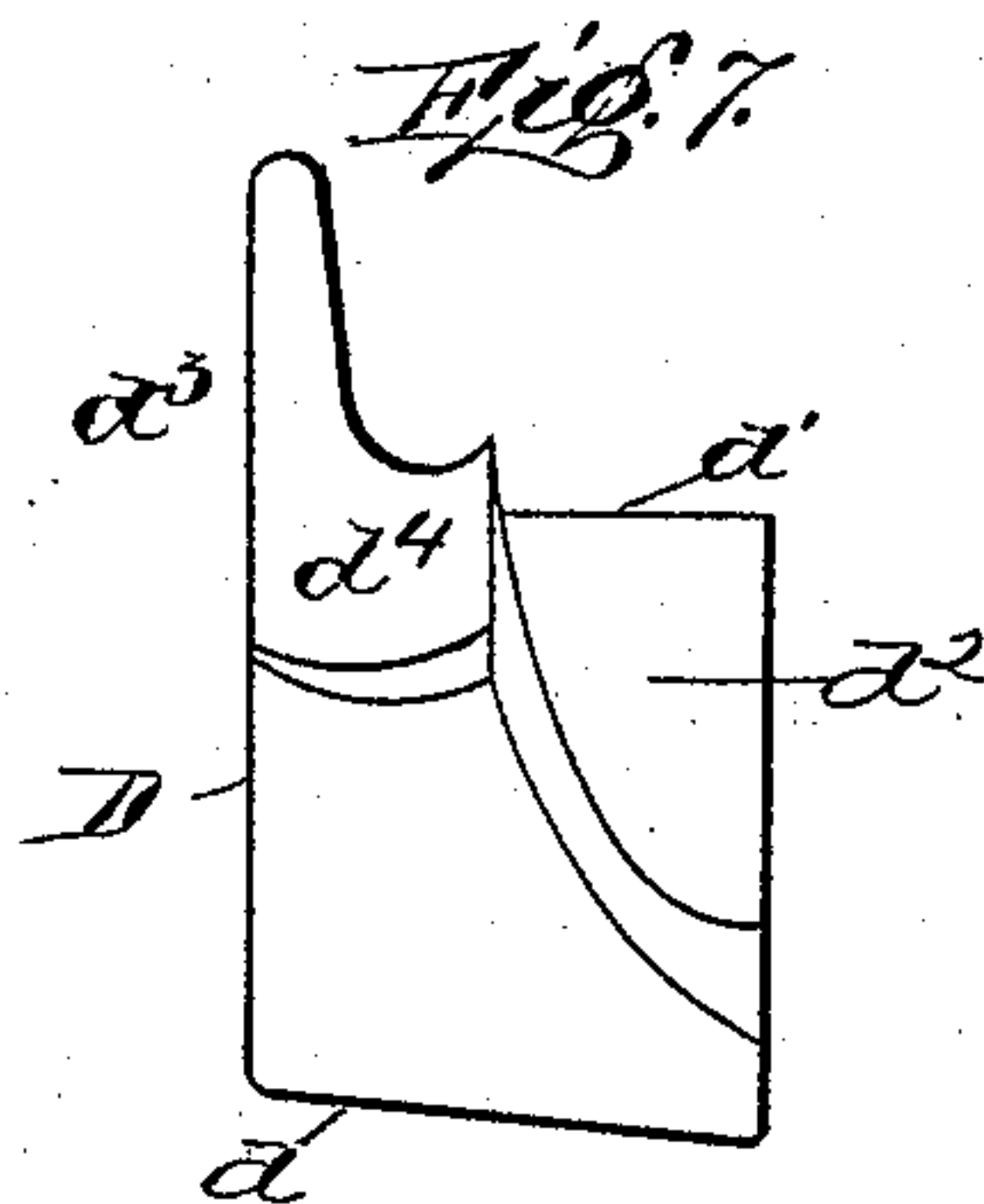
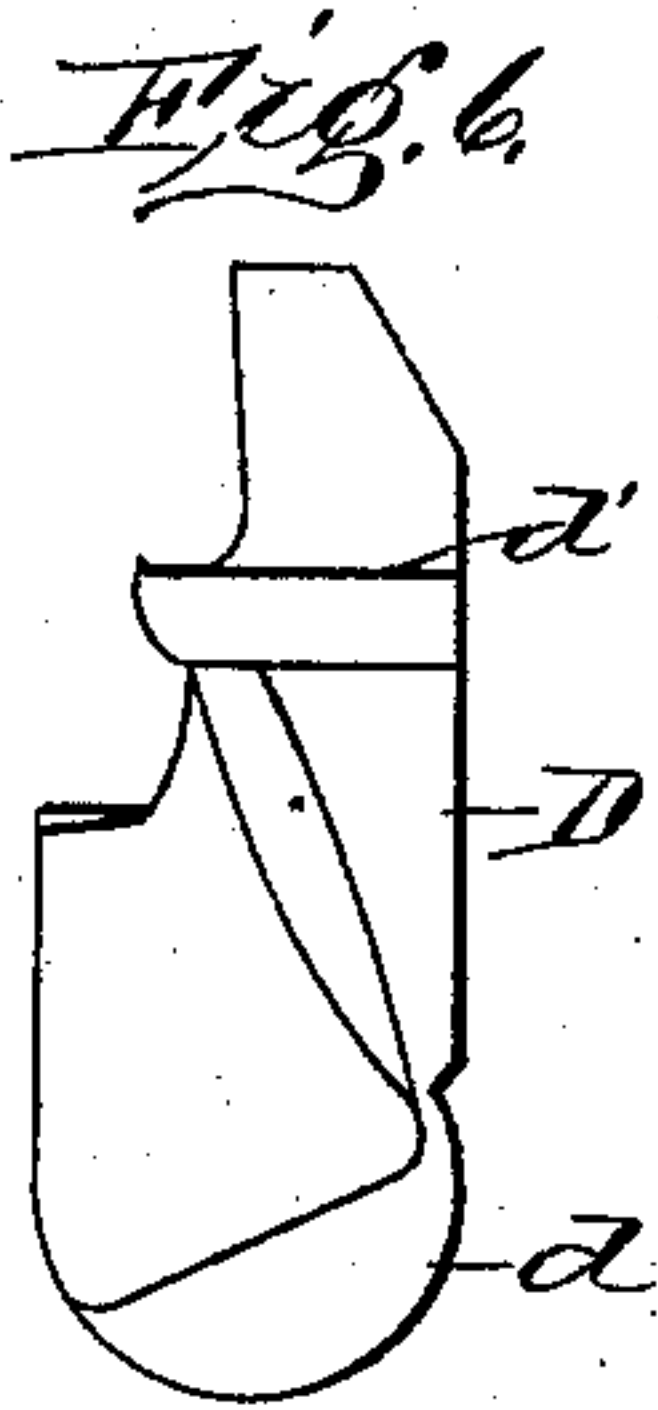
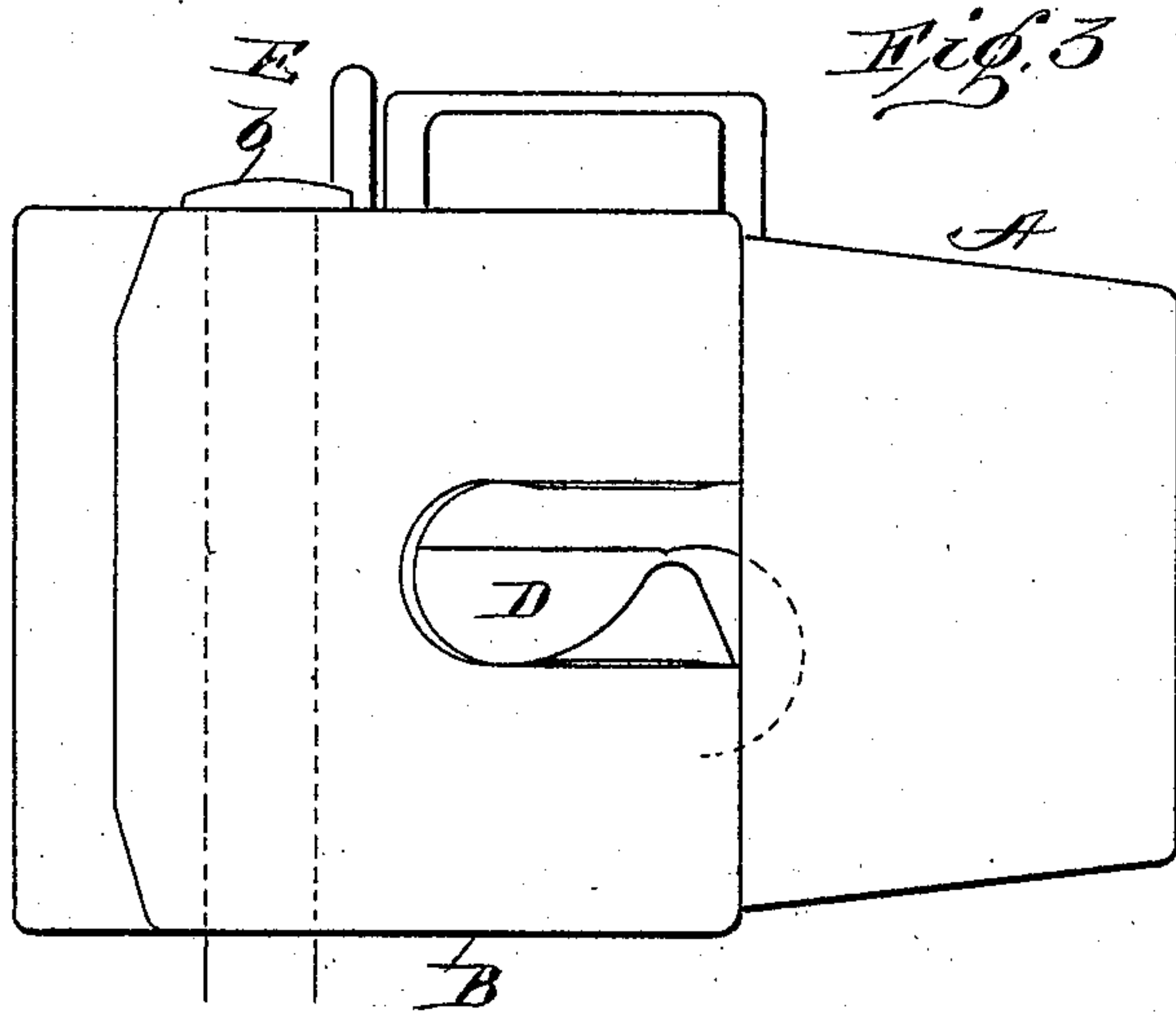
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R. C. TURNBULL.
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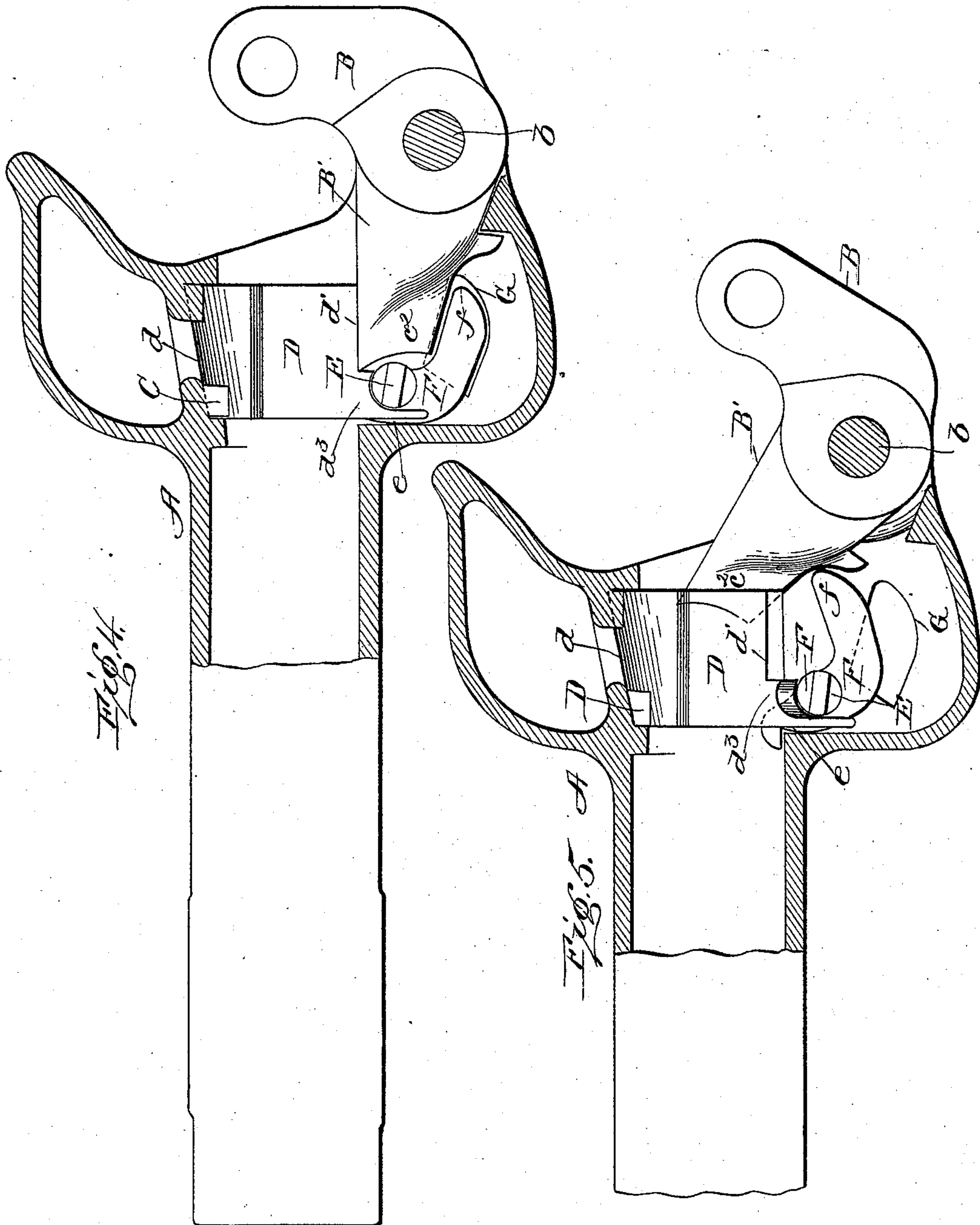
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R. C. TURNBULL.
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No. 576,008.

Patented Jan. 26, 1897.



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(No Model.)

4 Sheets—Sheet 4.

R. C. TURNBULL.
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Fig. 12.

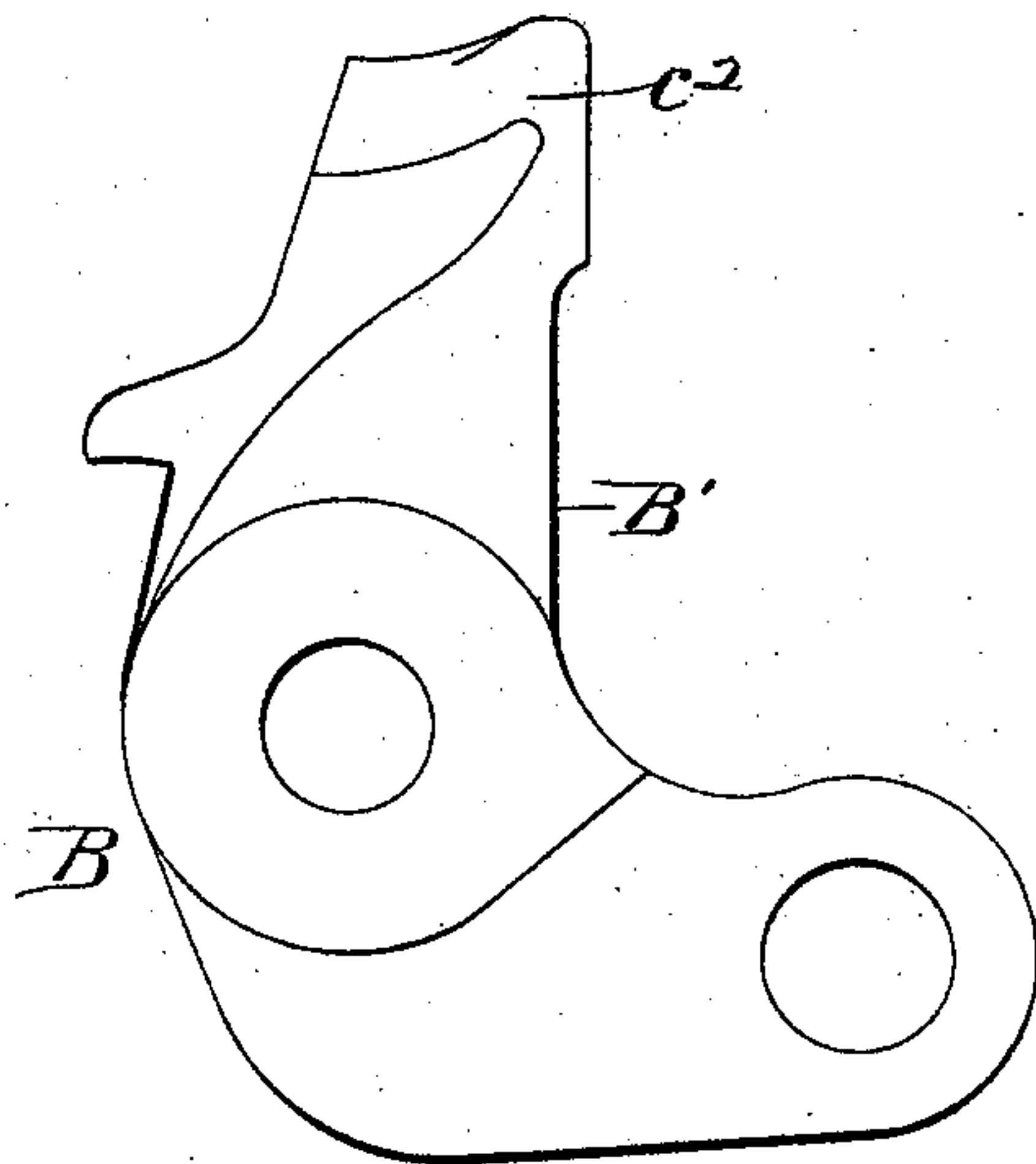
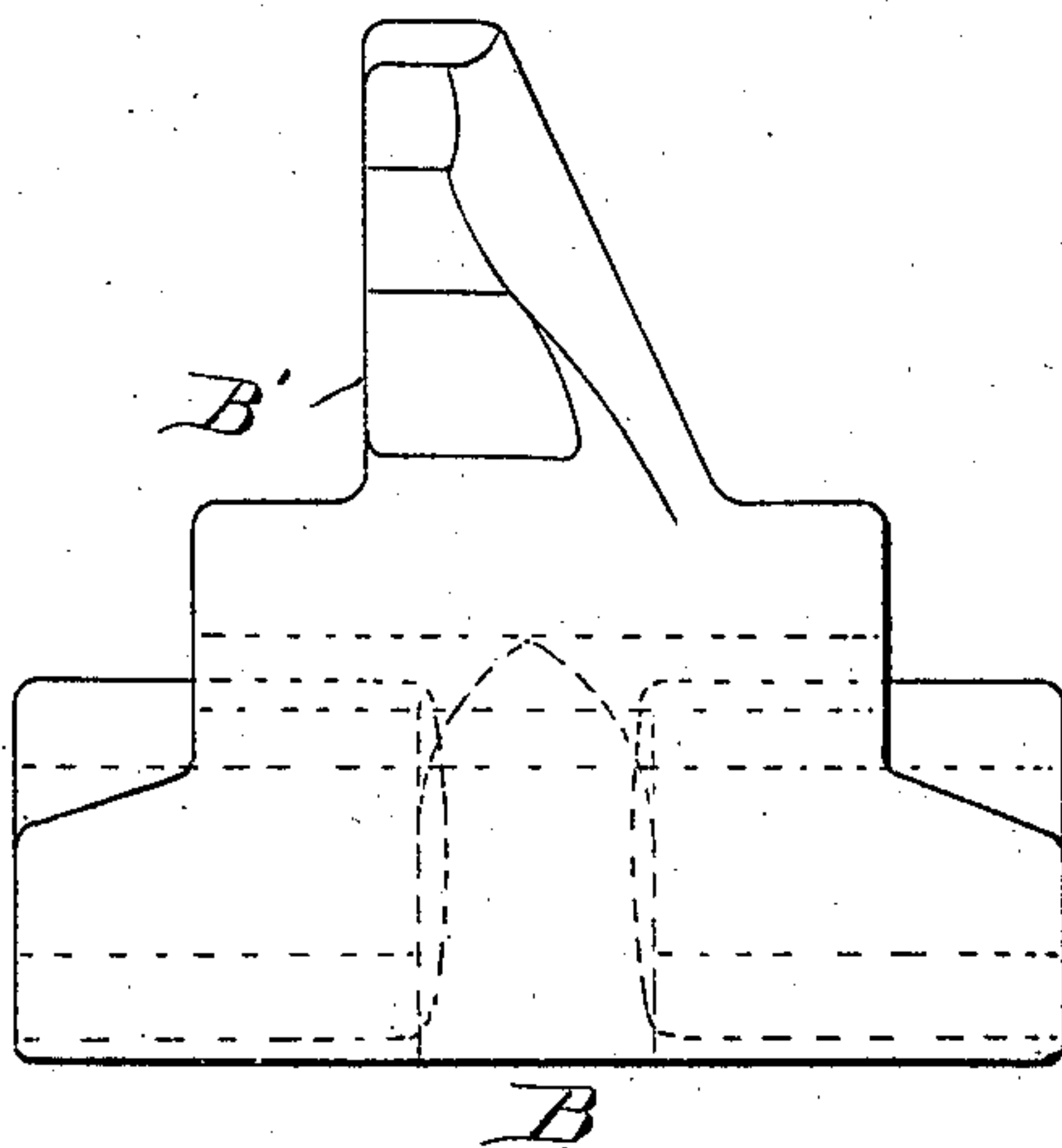


Fig. 13.



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UNITED STATES PATENT OFFICE.

ROBERT C. TURNBULL, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE
STANDARD COUPLER COMPANY, OF NEW YORK, N. Y.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 576,008, dated January 26, 1897.

Application filed October 1, 1896. Serial No. 607,598. (No model.)

To all whom it may concern:

Be it known that I, ROBERT C. TURNBULL, of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Car-Couplings; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the letters of reference marked thereon.

This invention relates to improvements in car-couplers of the Janney type, and has for its object to provide a coupling in which the knuckle is locked by a locking-block, with a releasing-pin for shifting the locking-block and subsequently throwing the knuckle open or into uncoupled position, and when in such uncoupled position the parts will remain in position for coupling and be automatically locked by the return of the knuckle to its coupled position.

A further object of the invention is to provide in such a coupler for the automatic coupling of the cars when the locking mechanism is either in its locking position or in its releasing position.

The invention consists in certain novel details of construction and combinations and arrangement of parts, all as will be now described, and pointed out particularly in the appended claims.

Referring to the accompanying drawings, Figure 1 is a side elevation. Fig. 2 is a top plan view; Fig. 3, a front elevation. Figs. 4 and 5 are views with the top of the draw-head removed and showing the parts in their coupled and uncoupled positions, respectively. Figs. 6, 7, and 8 are detail views of the locking-block. Figs. 9, 10, and 11 are detail views of the releasing-pin. Figs. 12 and 13 are detail views of the knuckle.

Like letters of reference in the several figures indicate the same parts.

The draw-head (lettered A in the accompanying drawings) may be of any preferred or usual construction, and the contour-lines of its face, together with the contour-lines of the knuckle, may be of any preferred or approved character, the lines shown in the drawings being the lines employed in approved car-couplers now in use.

The knuckle B is pivotally connected to the draw-head by a vertical pin *b*, and has a wing B' projecting into the body of the draw-head for the purpose of locking the knuckle in its coupled position, all as is customary in this class of couplers, save that the shape of the wing is somewhat modified for coöperation with the mechanism to be now described.

On the opposite side of the draw-head from the wing B' there is formed a curved bearing C for the reception of the curved base *d* of the locking-block D. This block D has a square flat abutment *d'* thereon forming the locking-face for coöperation with the end of the knuckle-wing, as shown clearly in Fig. 4, for holding the knuckle in its locked position, said locking-block being adapted to be raised or turned in its bearing to release the knuckle to allow for the uncoupling of the cars, and it is further provided with an incline on its front side at *d*², with which the inclined surface *c*² on the knuckle coöperates to raise the block as the knuckle is turned into its locked position, thereby permitting of the automatic coupling of the cars when the block is down.

For the purpose of controlling the locking-block and also the knuckle I provide a vertically-arranged releasing-pin E, working through bearings in the draw-head and having an eye or some means at the upper end for the attachment of the releasing lever or chain, and by means of which the pin is moved vertically in its bearings. This pin E has at one side a wing or projection *e*, preferably having an inclined upper surface at *e'*, which normally rests beneath the projection *d*³ on the locking-block. The projection *d*³ also preferably has an inclined under surface at *d*⁴. Thus in raising the releasing-pin its first action will be to lift the locking-block until its locking-face is above the plane of the knuckle-wing, leaving the knuckle free to uncouple, at which point the upward swing of the locking-block is arrested by coming in contact with the walls of the draw-head, and a further movement of the pin will by reason of the inclined coöperating faces of the wing *e* and locking-block cause the pin to rotate slightly, and in order that this movement may be utilized in throwing the knuckle into uncoupled position the pin is provided with a second wing or projection F, arranged approxi-

mately on the opposite side of the pin from the projection *e*, which projection *F* is formed with a substantially vertical and slightly-rounded bearing-surface *f* for engaging the inner or rear side of the knuckle-wing *B'*, and as the pin rotates this bearing-surface forces the knuckle into the position indicated in Fig. 5 or into its uncoupled position.

The projection *F* is preferably somewhat elongated vertically and seats in a recess or opening *G* in the body of the draw-head, serving as a stop to prevent the rotation of the pin until the releasing-block has been raised above the knuckle-wing, whereby all tendency of the knuckle-wing to bind against the locking-block by reason of the pressure of the pin against said knuckle-wing is avoided and the parts are caused to work with the utmost freedom.

In operation, when the cars are coupled and the releasing-pin lever is lifted, it in turn lifts the pin and locking-block. The inclined surfaces on the pin and block cause a slight rotation of the pin sufficient to throw the lower edge of the wing *F* into engagement with the bottom of the draw-head, holding the pin and locking-block elevated. The parts may then be left and will remain in position to allow the cars to uncouple and to be again automatically coupled. If the cars are not coupled together, but the parts are in their coupled or closed position, a pull on the releasing-pin lever lifts the pin and locking-block, and the inclined surfaces on the pin and block cause the rotation of the pin, as before stated; but the knuckle being then free to swing is swung open by the continued rotation of the pin into position for coupling, and it will be particularly noted that these movements of the parts are secured by a continuous pull on the releasing-rod lever.

The locking-block works or pivots to swing in a vertical plane or at right angles to the plane of movement of the knuckle. Its pivotal end is preferably made large and heavy and seats firmly in a circular bearing in the body of the draw-head, thus affording the greatest possible strength in resisting strains tending to swing the knuckle on its pivot.

Obviously the shape of the parts shown in the accompanying drawings may be modified as is found desirable or necessary for use in couplers of different styles, and hence I do not wish to be limited to any particular configuration of the parts.

Having thus described my invention, what I claim as new is—

1. In a car-coupling, the combination with the draw-head and knuckle pivotally mounted therein, with independent means for locking the knuckle in coupled position, of the vertically-movable and rotary releasing-pin, a projection rigidly connected with the pin and cooperating with the knuckle when the pin is rotated to throw the knuckle open and inclines for rotating said pin when the latter is

moved longitudinally, substantially as described.

2. In a car-coupling, the combination with the draw-head the knuckle pivotally mounted therein and the locking-block for the knuckle, of the vertically-movable and rotary releasing-pin for raising the block and a projection on the pin cooperating with the knuckle when the pin is rotated to move the knuckle into uncoupled position; substantially as described.

3. In a car-coupling, the combination with the draw-head, the knuckle pivotally mounted therein and the locking-block for the knuckle, of the vertically-movable and rotary releasing-pin for raising the block, a projection on the pin cooperating with the knuckle when the pin is rotated to move the knuckle into uncoupled position, and inclines for rotating the pin when the latter is moved vertically; substantially as described.

4. In a car-coupling, the combination with the draw-head, the knuckle pivotally mounted therein and the locking-block for the knuckle, of the vertically-movable and rotary releasing-pin for raising the block, with inclines on the pin and block respectively, for rotating the pin as it is raised and a projection on the pin cooperating with the knuckle when the pin is rotated to move the knuckle into uncoupled position; substantially as described.

5. In a car-coupling, the combination with the draw-head, the knuckle pivotally mounted therein and the locking-block pivoted to swing in a vertical plane, of the vertically-movable and rotary releasing-pin for raising the block, a projection on the pin cooperating with the knuckle when the pin is rotated to move the knuckle into uncoupled position and rotating mechanism for the pin; substantially as described.

6. In a car-coupling, the combination with the draw-head, the knuckle pivotally mounted therein and the locking-block for the knuckle, of a vertically-movable and rotary pin for raising the block and turning the knuckle into uncoupled position with means for holding the pin against rotation until the block is moved out of the path of the knuckle, substantially as described.

7. In a car-coupling, the combination with the draw-head the knuckle pivotally mounted therein and the locking-block for the knuckle, of a vertically-movable and rotary pin, projections having cooperating inclines on the pin and block whereby the block is raised and the pin turned, a projection on the pin cooperating with the knuckle to move the same when the pin is rotated and a bearing on the draw-head cooperating with the projection on the pin for preventing the rotation of the pin until the block is out of the path of the knuckle, substantially as described.

ROBERT C. TURNBULL.

Witnesses:

O. H. BROTHWELL,
A. P. DENNIS.