

No. 847,408.

G. A. HERMANSON.

PATENTED MAR. 19, 1907.

CAR COUPLING.

APPLICATION FILED NOV. 28, 1906.

2 SHEETS—SHEET 1.

Fig. 1

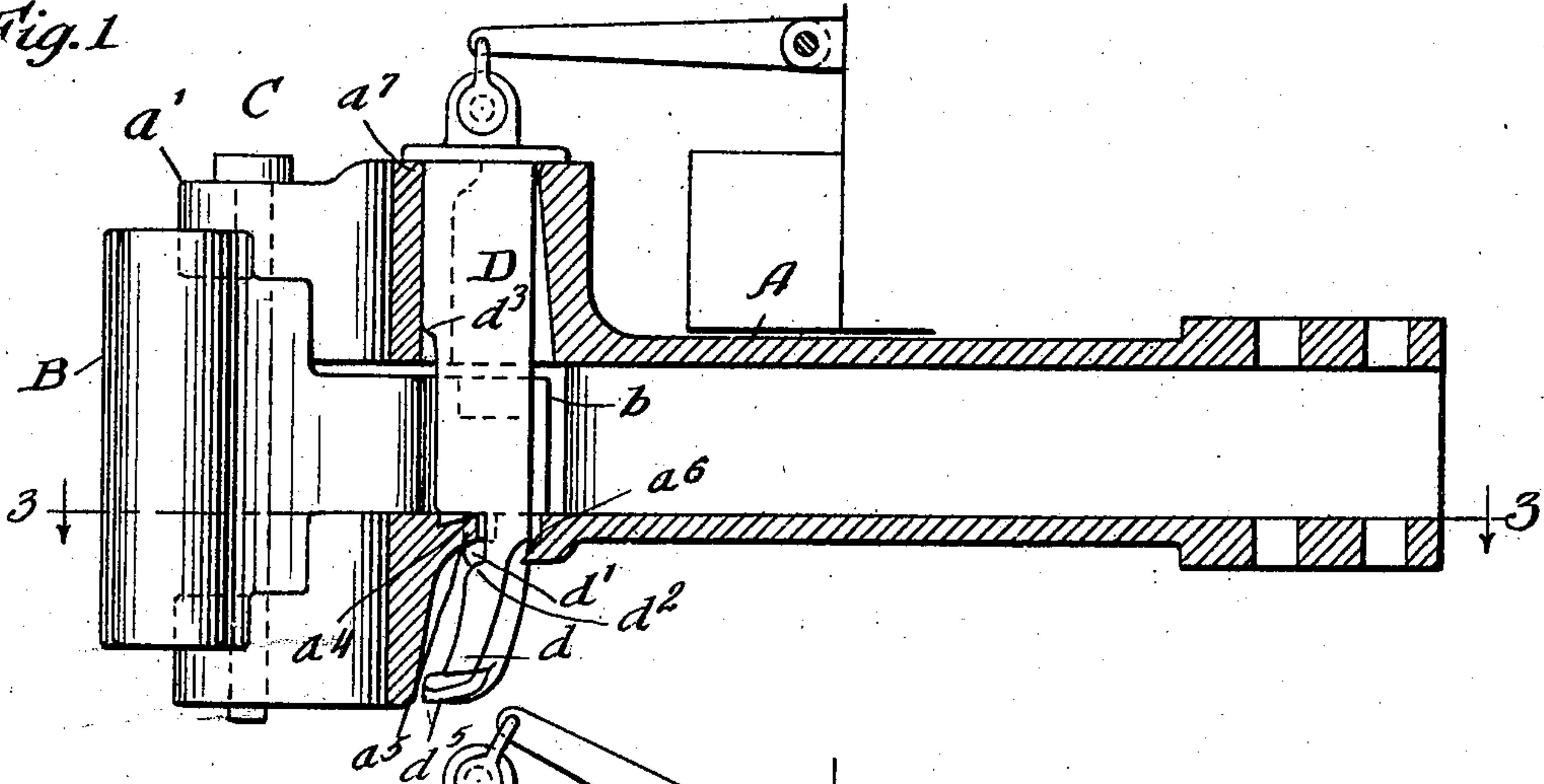


Fig. 2

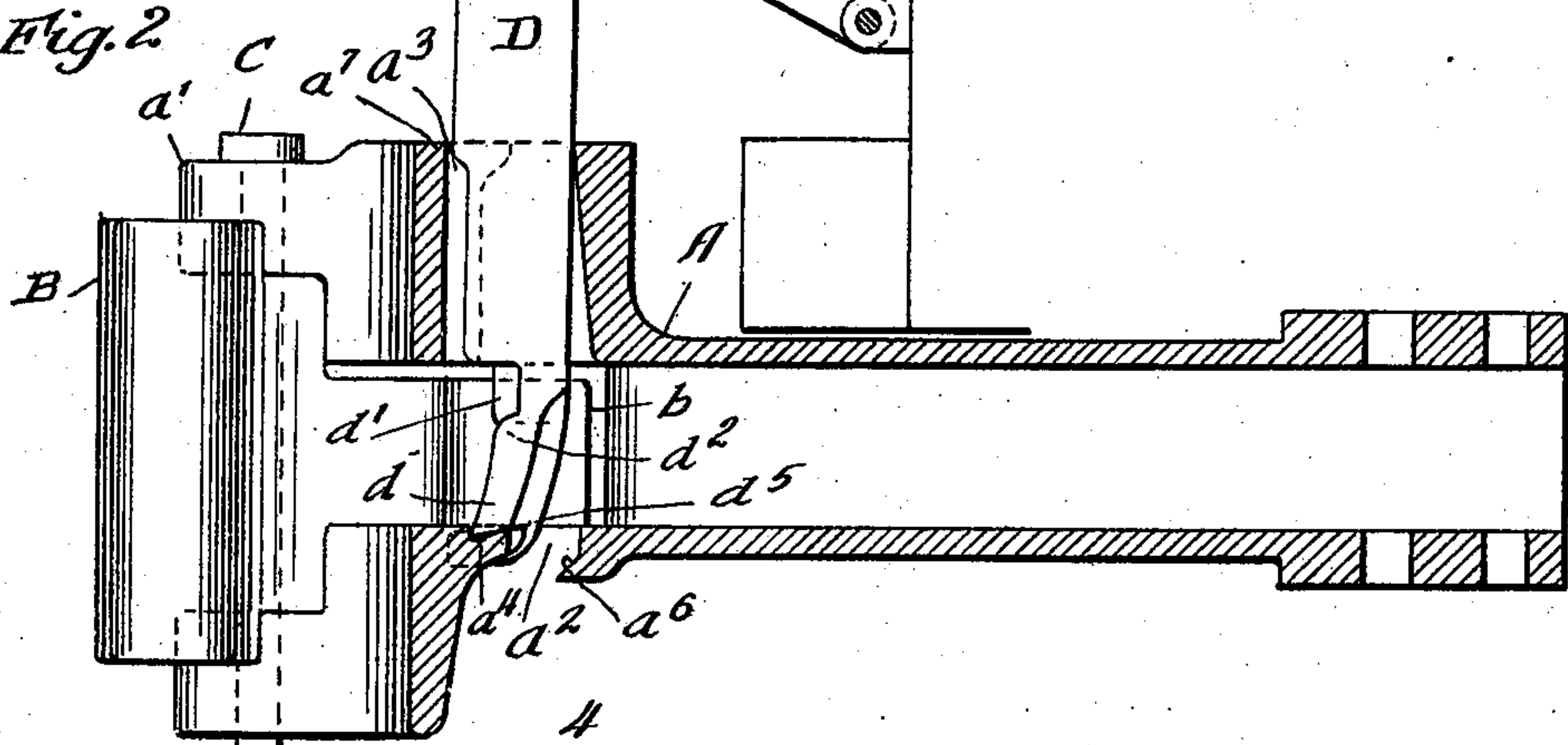
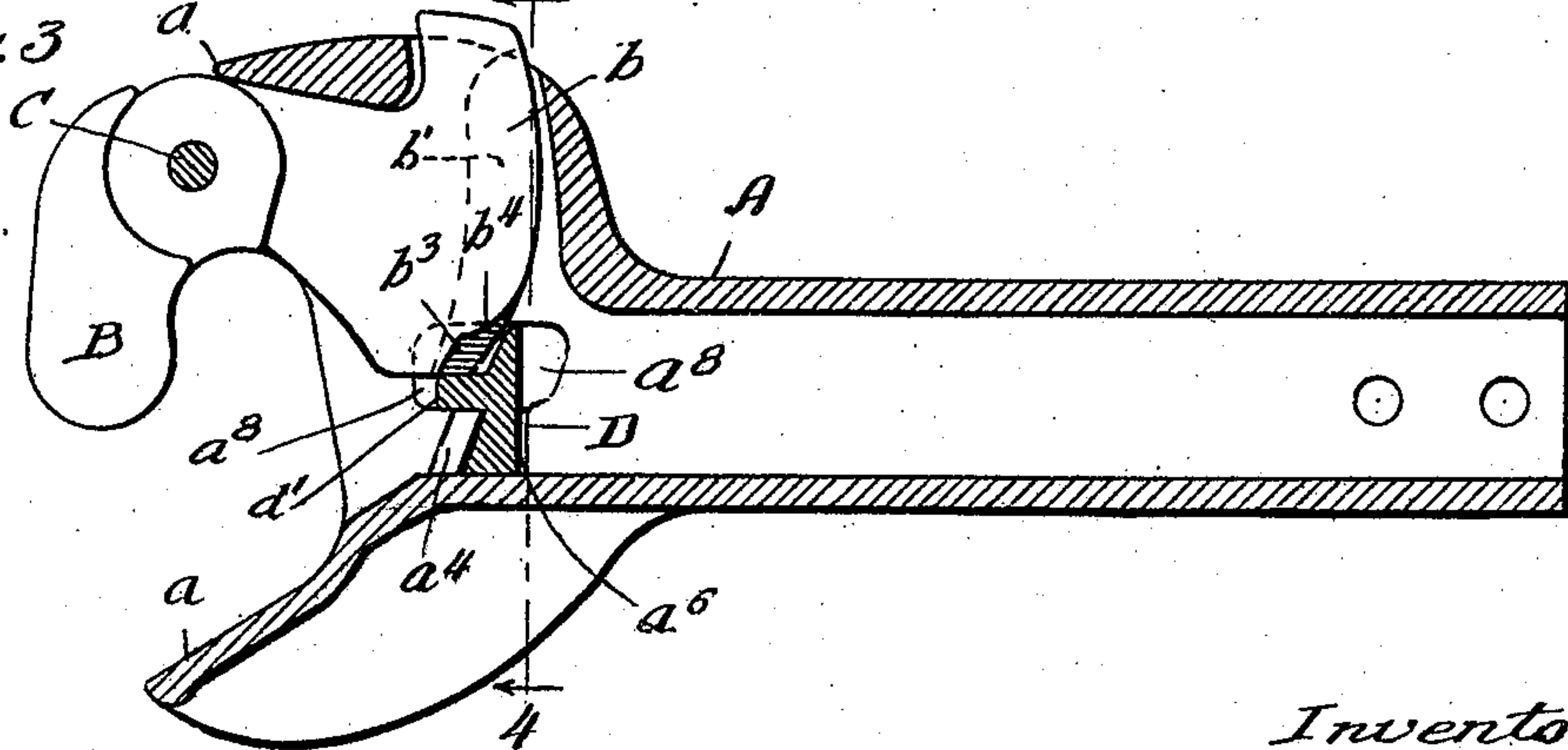


Fig. 3



Witnesses:

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2 SHEETS—SHEET 2.

Fig. 4

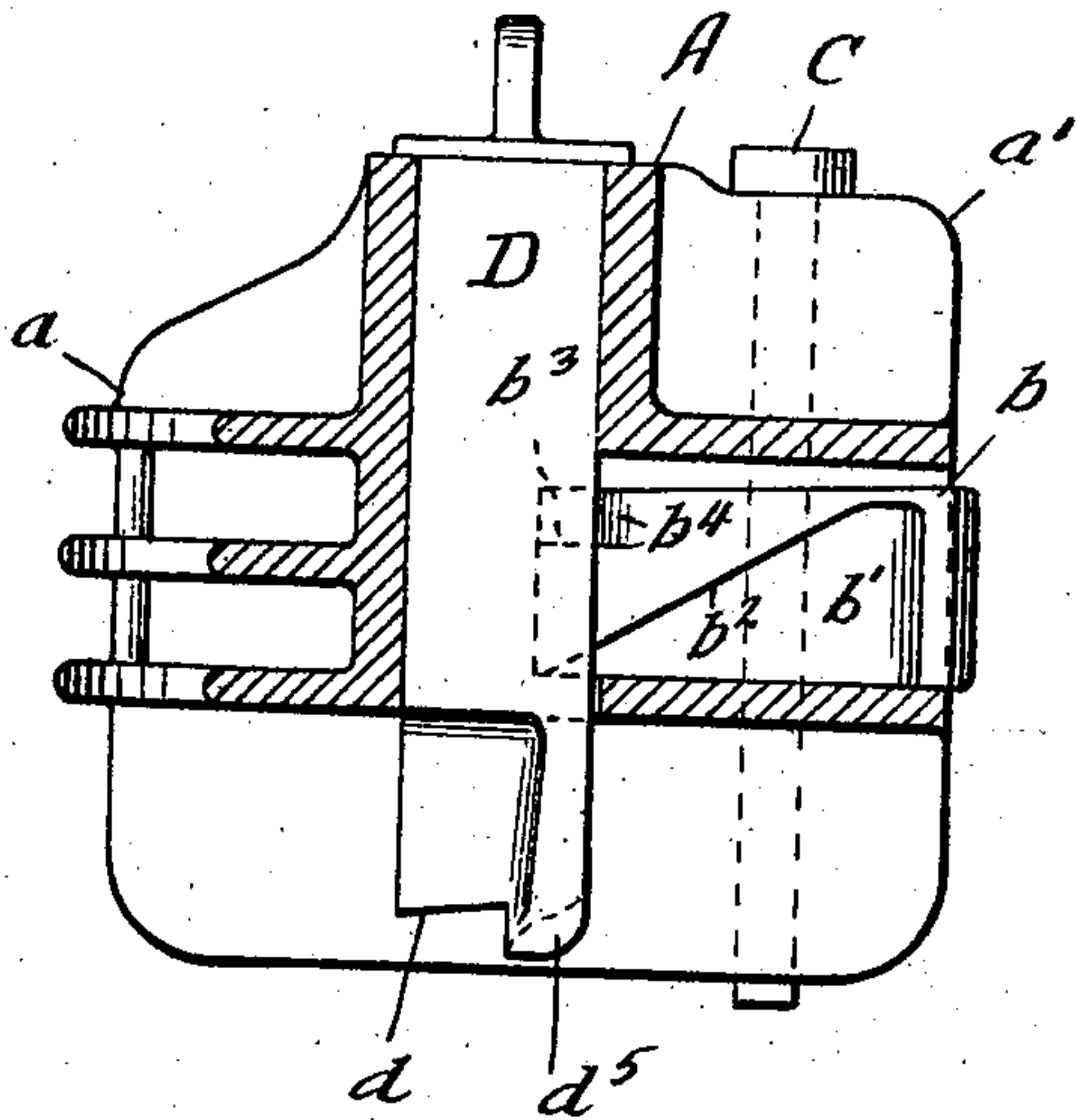


Fig. 5

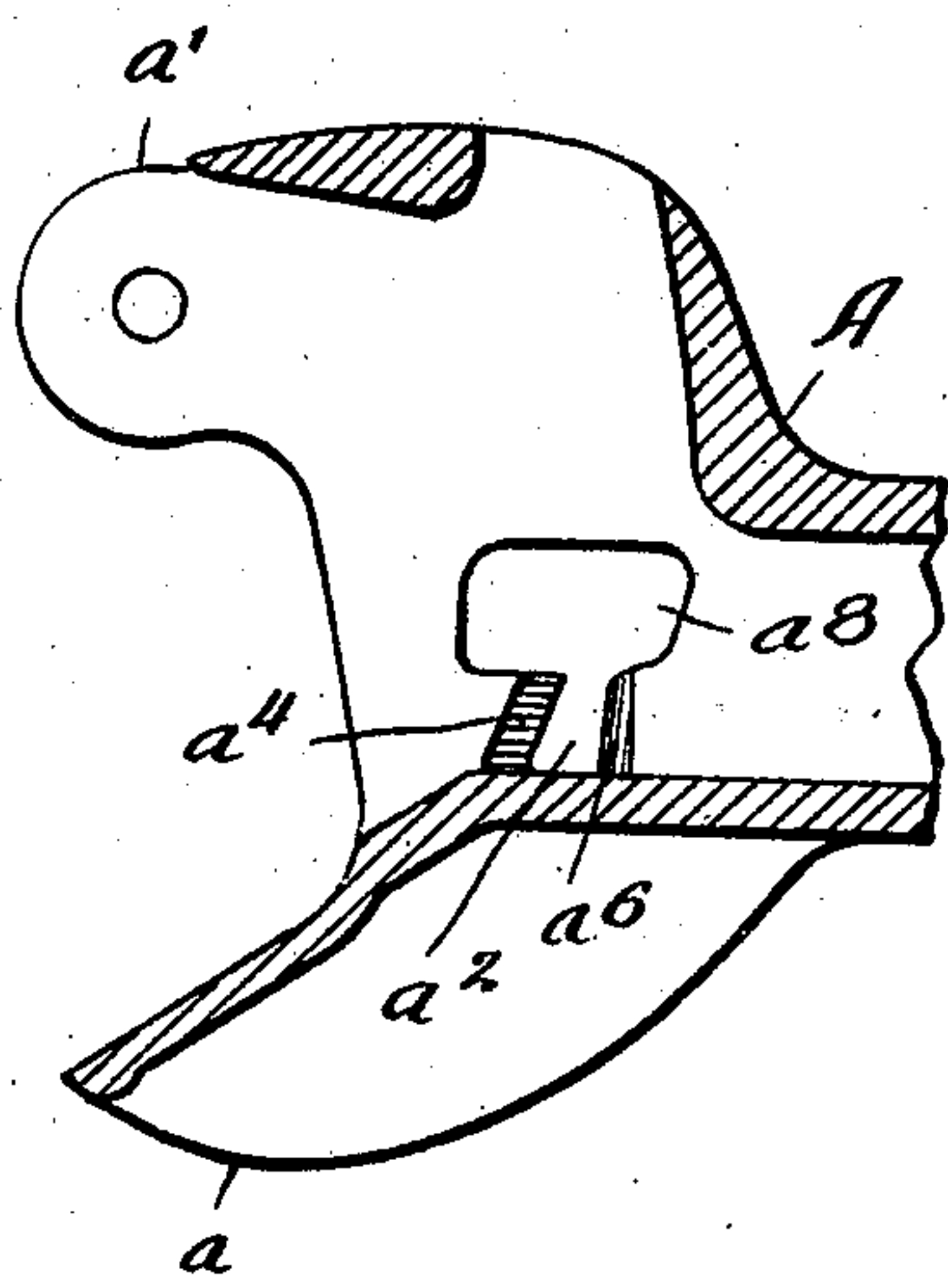


Fig. 6.

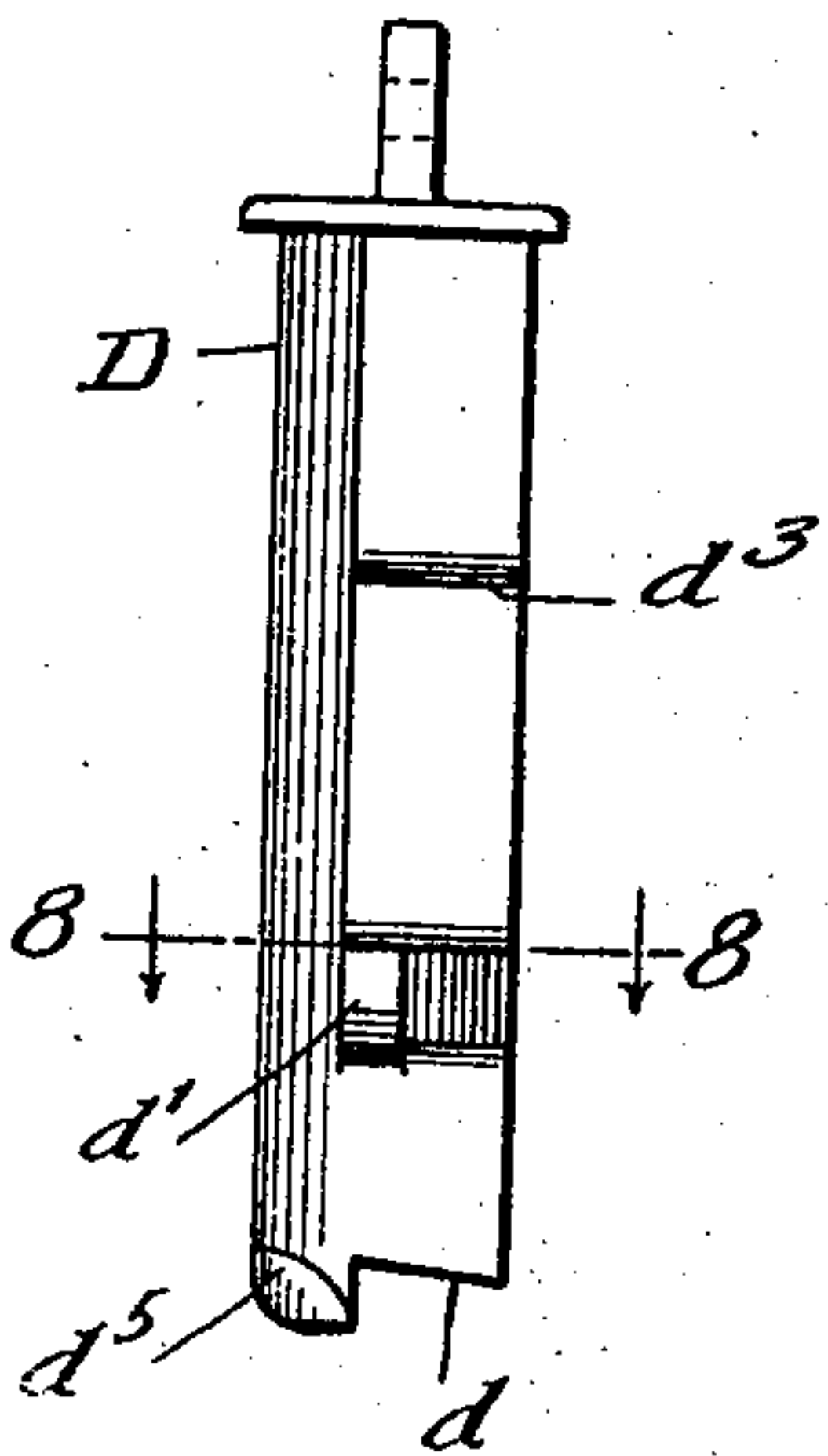


Fig. 7

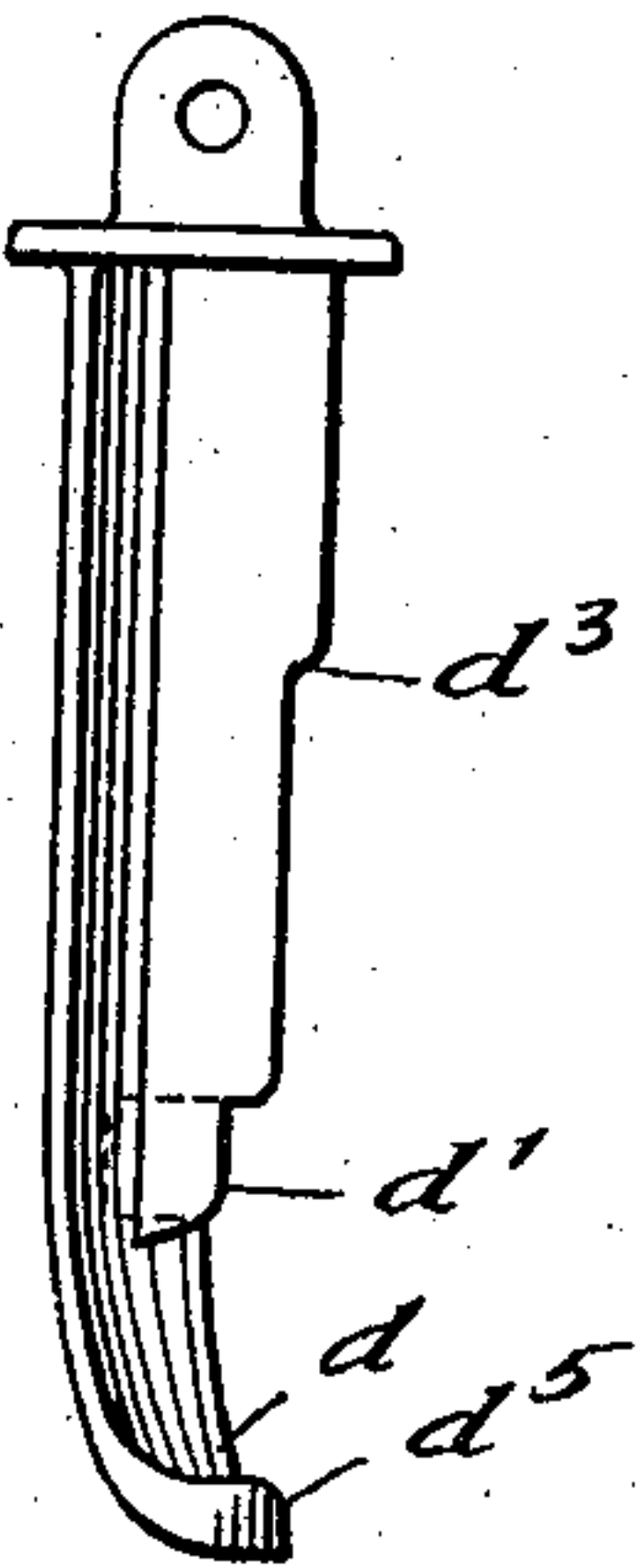


Fig. 8

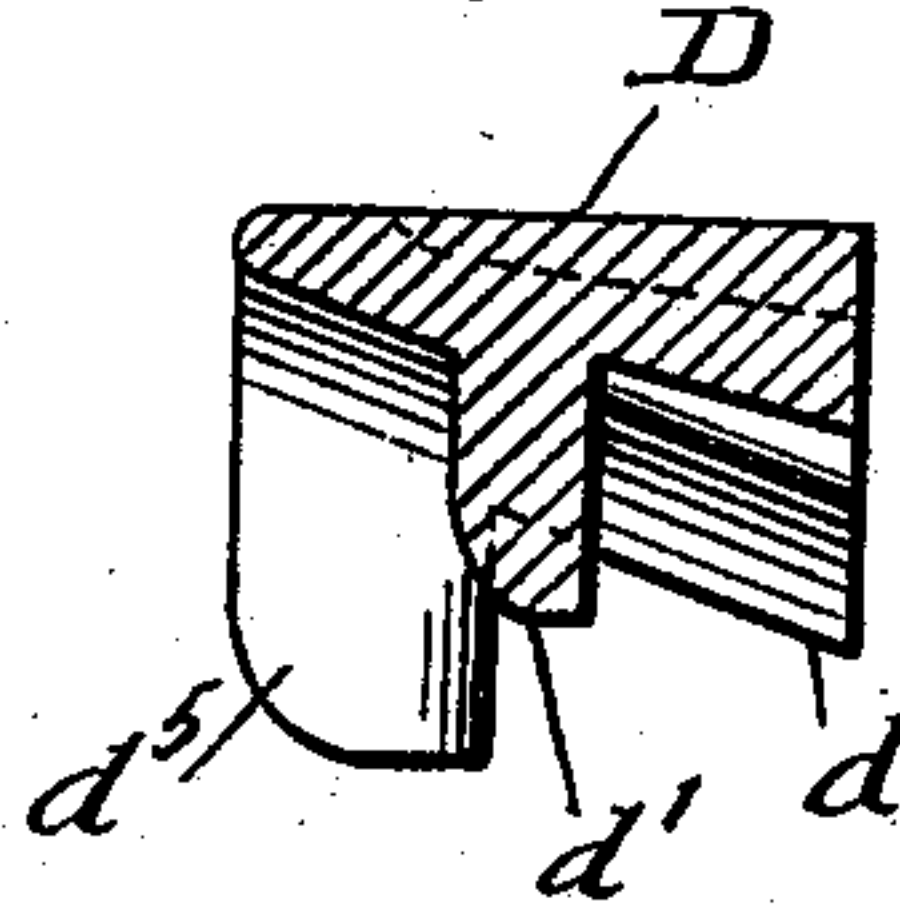
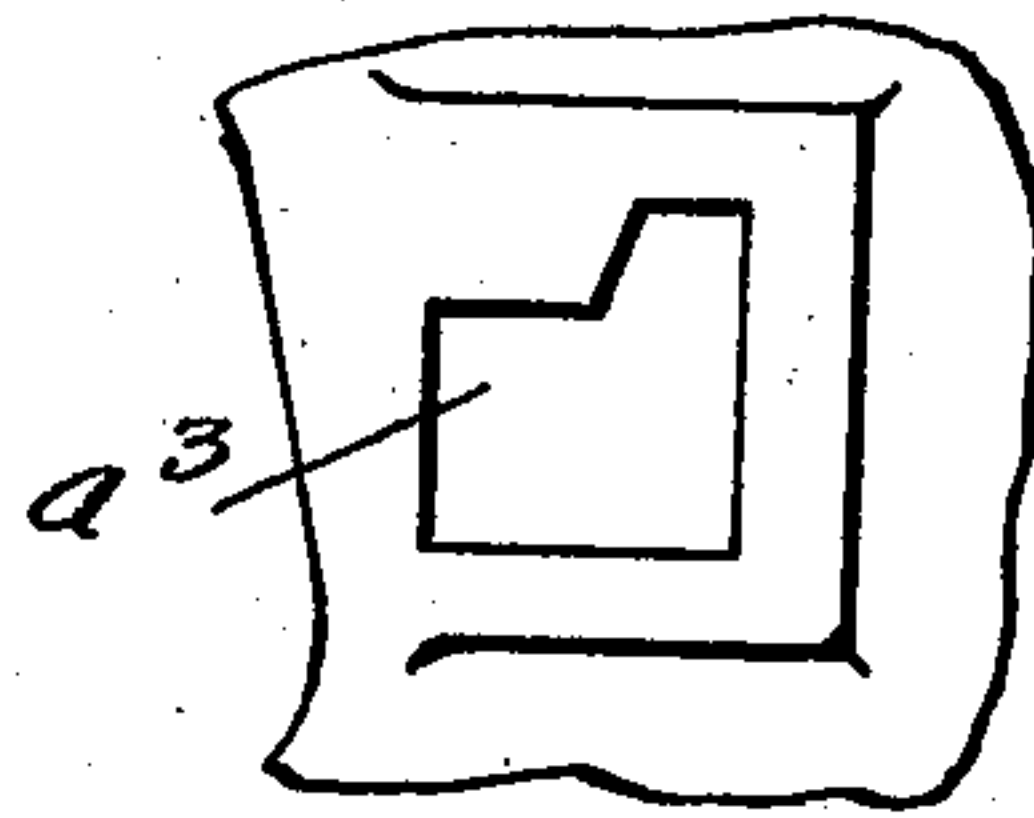


Fig. 9



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UNITED STATES PATENT OFFICE.

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CAR-COUPLING.

No. 847,408.

Specification of Letters Patent.

Patented March 19, 1907.

Application filed November 28, 1906. Serial No. 345,431.

To all whom it may concern:

Be it known that I, GUSTAF A. HERMANSON, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Car-Couplers, of which the following is a specification.

My invention relates to improvements in car-couplers, and more particularly to improvements in car-couplers of the Master Car-Builders' type, having a forked draw-head, pivoted knuckle, and gravity-lock.

The object of my invention is to provide a Master Car-Builders' coupler of a simple, efficient, and durable construction, composed of few parts, in which the knuckle will be automatically thrown open by the lifting of the lock, in which the lock may be set in position for coupling and uncoupling, and in which the lock will not be dislodged from its lock-set position until after the knuckle is swung partially open, and in which the lock will be prevented from creeping.

My invention consists in the means I employ to practically accomplish this object or result.

In the accompanying drawing, forming a part of this specification, Figure 1 is a central vertical longitudinal section of the car-coupler embodying my invention. Fig. 2 is a similar view showing the lock in its lock-set position. Fig. 3 is a horizontal section. Fig. 4 is a vertical cross-section on line 4 4 of Fig. 3. Fig. 5 is a detail bottom view of the knuckle. Fig. 6 is a detail front view of the lock. Fig. 7 is a detail side view of the lock, showing the reverse side thereof from that appearing in Figs. 1 and 2. Fig. 8 is a section on line 8 8 of Fig. 6. Fig. 9 is a detail top plan view of a portion of the draw-head, showing the opening for the lock therein.

In the drawing, A represents the draw-head; B, the knuckle; C, the pivot-pin, and D the vertically-movable gravity-lock.

The draw-head A has the customary guard-arm a , pivot-arm a' , and an opening a^2 in its bottom wall or web conforming in shape to the lower end of the lock and an opening a^3 in its upper wall corresponding generally to the cross-section of the lock at its upper end.

The knuckle B has its rear arm or tail b furnished with a recess b' at its rear end,

forming an upwardly-extending knuckle-throwing cam or incline b^2 , and also with a recess b^3 at its upper edge terminating in a cam or incline b^4 , so that the knuckle may swing open to a limited extent before its lock-set-dislodging cam or incline b^4 engages the lock to dislodge it from its lock-set position.

The lock D is provided with a lock-set leg d , the lower end or extremity of which engages the lock-set ledge a^4 in the bottom wall or floor of the draw-head to hold the lock set or in position for uncoupling. The lock set leg d is preferably slightly curved and extends at an angle to the front face of the lock. The lock-set leg of the lock is also provided at the edge thereof adjacent to the knuckle with a knuckle-throwing foot or projection d^5 , adapted to engage the knuckle-throwing cam or incline b^2 on the tail of the knuckle and throw the knuckle open when the lock is lifted to the required extent. To cause the lock to be dislodged from its lock-set position after the knuckle has been swung partly open by the further opening movement of the knuckle, I provide the lock with a lock-dislodging lip or shoulder d' and the rear arm or tail of the knuckle at its upper front edge or corner with a notch or recess b^3 and a cam or incline b^4 , the cam or incline being located at the rear portion of the notch or recess, so that the knuckle can swing partly open—as, for example, thirty or forty per cent. open—before the cam b^4 on the knuckle-tail engages the lock-set-dislodging lip or projection d' on the lock, and thus pushes the lower end of the lock backward by the further opening movement of the knuckle, and thereby causes the lock-set leg of the lock to be disengaged from the lock-set ledge of the draw-head. To cause the lock-set leg on the lock to cooperate with the draw-head to prevent the lock from creeping, I provide it with a notch or shoulder d^2 , which fits under and engages the adjacent portion a^5 of the bottom web or floor of the draw-head, through which the lock-set leg of the lock extends.

To properly guide the forwardly-curved lock-set leg into the opening of the draw-head and at the same time through the lower end of the lock, I provide the lower web or floor of the draw-head, at the rear side or

wall of the lock-opening therein, with an inclined projection a^6 , which by engagement with the forwardly-curved lock-set leg forces the lower end of the lock forward as the lock drops into position. To cause the lock-set leg to positively engage the lock-set ledge on the draw-head as it drops down after being partly raised, I provide the front wall of the lock with a rounded shoulder d^3 , engaging a corresponding shoulder a^7 on the draw-head, which serves to cause the lower end of the lock to tilt forward and throw the upper end of the lock backward, and thus insure the proper engagement of the lock-set leg of the lock with the lock-set ledge on the draw-head. The opening a^2 for the lock in the bottom web or floor of the draw-head has a notch or enlargement a^8 , corresponding in shape to the knuckle-throwing foot of the lock for said foot to pass through.

I claim—

1. In a car-coupler, the combination with a forked draw-head, of a knuckle having a rear arm or tail furnished with a knuckle-throwing cam or incline, and provided with a notch or recess at its front corner to permit the knuckle to partially open without dislodging the lock from its lock-set position, and a vertically-movable lock having a lock-set leg adapted to engage a lock-set ledge on the draw-head and provided with a knuckle-throwing foot or projection engaging said cam on the rear arm or tail of the knuckle to throw the knuckle open, and a projection on the front side of the lock engaged by the knuckle-tail after the knuckle swings partially open to dislodge the lock from its lock-set position, substantially as specified.

2. In a car-coupler, the combination with a draw-head having a lock-set ledge on its bottom web or floor, of a knuckle and a vertically-movable lock having a lock-set leg engaging said lock-set ledge on the draw-head, and provided with a shoulder fitting under and engaging the bottom web or floor of the draw-head to prevent creeping of the lock, substantially as specified.

3. In a car-coupler, the combination with a forked draw-head, of a knuckle having a rear arm or tail furnished with a knuckle-throwing cam or incline, and provided with a notch or recess at its front corner to permit the knuckle to partially open without dislodging the lock from its lock-set, and a vertically-movable lock having a lock-set leg provided with a knuckle-throwing foot or projection engaging said cam or incline on the rear arm or tail of the knuckle to throw the knuckle open, said lock-set leg of the lock being also provided on its front side with a lock-set-dislodging projection fitting in said notch or recess in the knuckle-tail to permit the knuckle to partially open before dislodg-

ing the lock from the lock-set and then engaging the knuckle-tail to cause the lower end of the lock to be pushed backward and dislodge the lock-set, substantially as specified.

4. The combination with a forked draw-head having a lock-set ledge, of a knuckle having a rear arm or tail furnished with a knuckle-throwing cam or incline, and a vertically-movable lock having a lock-set leg provided at its lower end with a knuckle-throwing foot and furnished with a shoulder engaging the bottom web or floor of the draw-head to prevent creeping of the lock, substantially as specified.

5. The combination with a forked draw-head having a lock-set ledge on the bottom web or floor of the draw-head, of a knuckle having a rear arm or tail furnished with a knuckle-throwing cam or incline, and a vertically-movable lock having a lock-set leg provided with a knuckle-throwing foot at its lower end engaging said cam or incline on the knuckle-tail to throw the knuckle open, said lock being provided on its front side with a shoulder engaging the surrounding wall of the draw-head to tilt the upper end of the lock backward and its lower end forward to cause its lock-set leg to positively engage the lock-set ledge on the draw-head, substantially as specified.

6. The combination with a forked draw-head having a lock-set ledge on the bottom web or floor of the draw-head, of a knuckle having a rear arm or tail furnished with a knuckle-throwing cam or incline, and a vertically-movable lock having a lock-set leg provided with a knuckle-throwing foot at its lower end engaging said cam or incline on the knuckle-tail to throw the knuckle open, said lock being provided on its front side with a shoulder engaging the surrounding wall of the draw-head to tilt the upper end of the lock backward and its lower end forward to cause its lock-set leg to positively engage the lock-set ledge on the draw-head, said lock-set ledge having also a shoulder engaging the bottom web or floor of the draw-head to prevent creeping of the lock, substantially as specified.

7. The combination with a forked draw-head having a lock-set ledge on the bottom web or floor of the draw-head, of a knuckle having a rear arm or tail furnished with a knuckle-throwing cam or incline, and a vertically-movable lock having a lock-set leg provided with a knuckle-throwing foot at its lower end engaging said cam or incline on the knuckle-tail to throw the knuckle open, said lock being provided on its front side with a shoulder engaging the surrounding wall of the draw-head to tilt the upper end of the lock backward and its lower end forward to

cause its lock-set leg to positively engage the lock-set ledge on the draw-head, said lock-set ledge having also a shoulder engaging the bottom web or floor of the draw-head to prevent creeping of the lock, and said lock and knuckle-tail having interengaging recess and projection to permit the knuckle to partially

open before the lock is dislodged from its lock-set position, substantially as specified.

GUSTAF A. HERMANSON.

Witnesses:

EDMUND ADCOCK,
PEARL ABRAMS.