R. E. L. JANNEY.

CAR COUPLING.

APPLICATION FILED AUG. 5, 1909.

991,783.

Patented May 9, 1911.

4 SHEETS—SHEET 1.

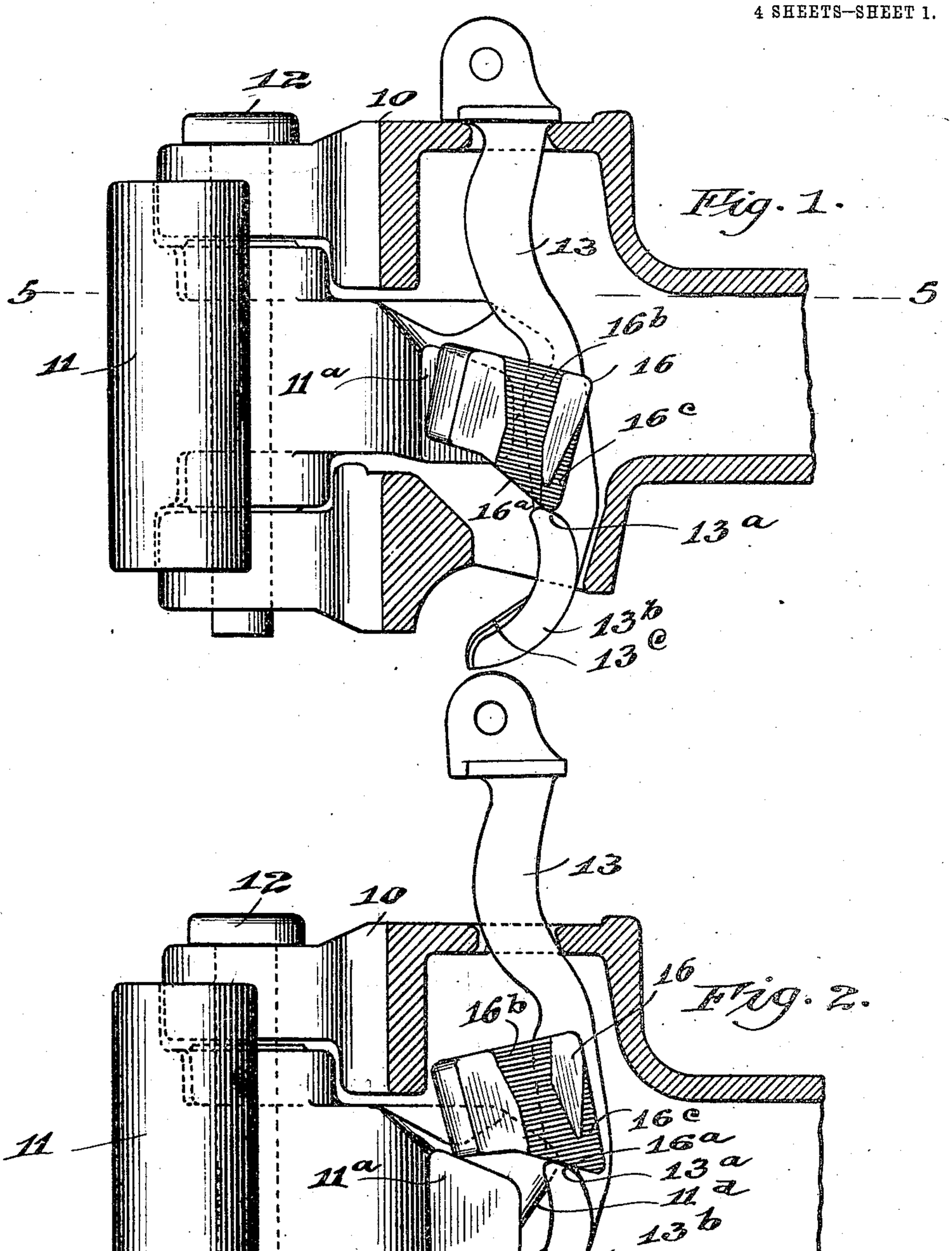

Fig. 1.

Fig. 2.

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4 SHEETS—SHEET 2.

Fig. 3.

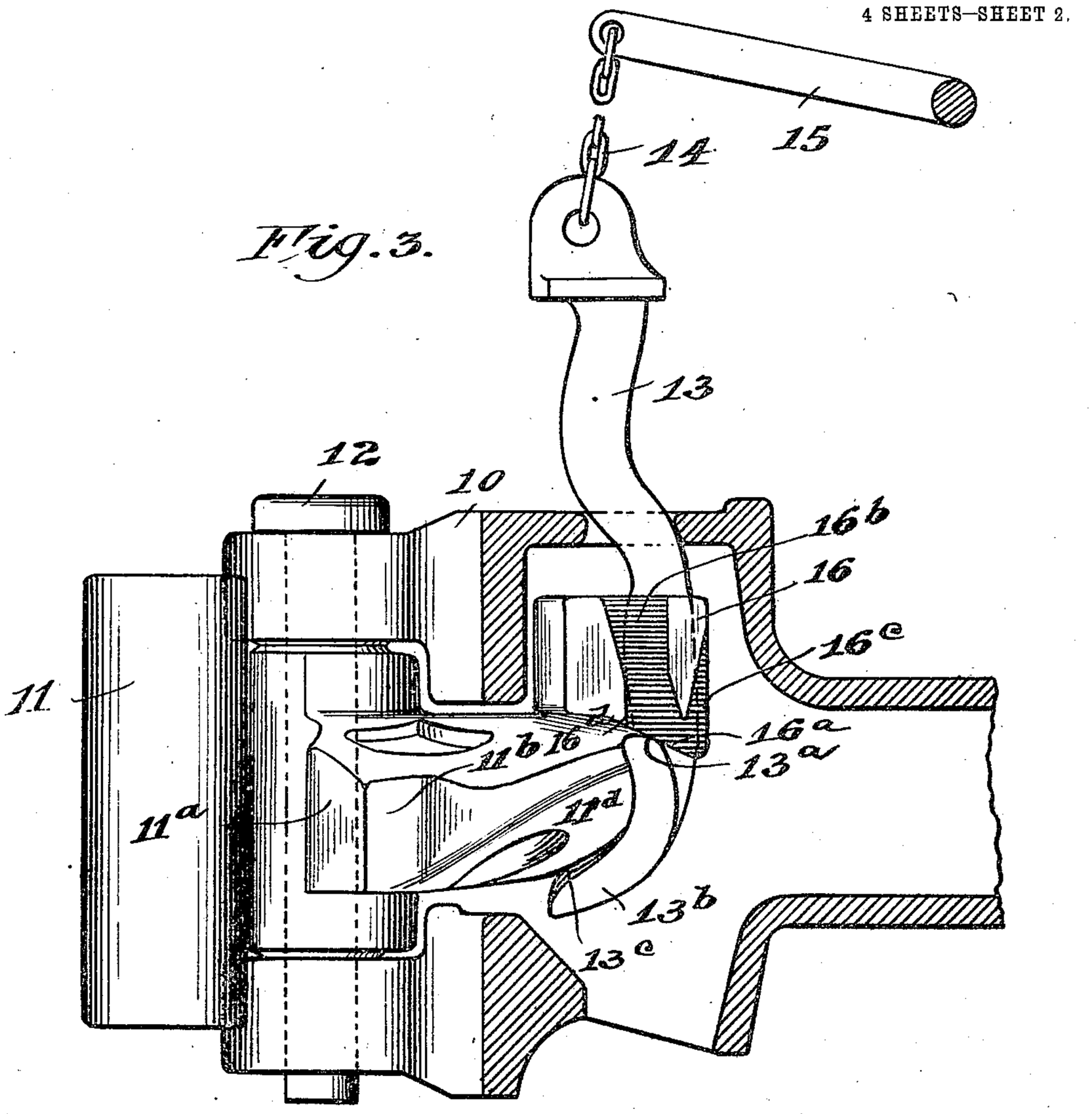
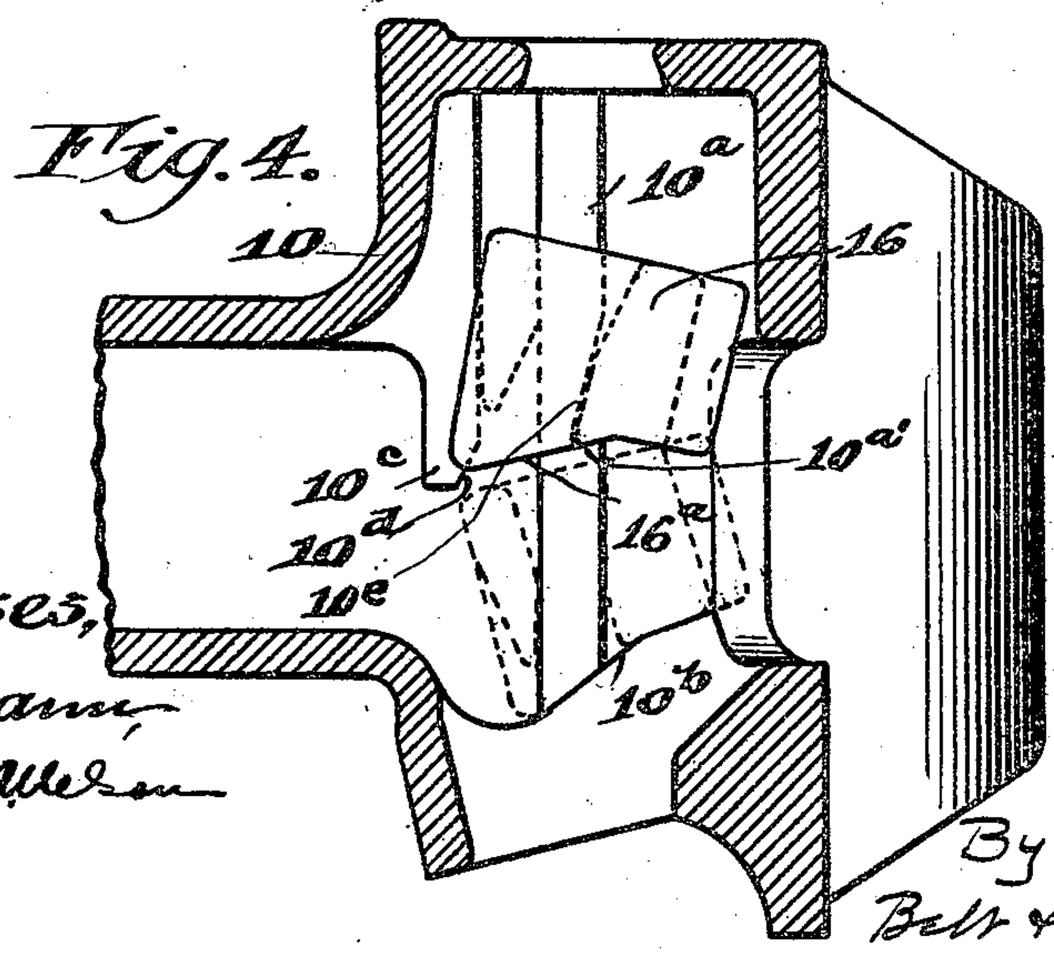


Fig. 4.



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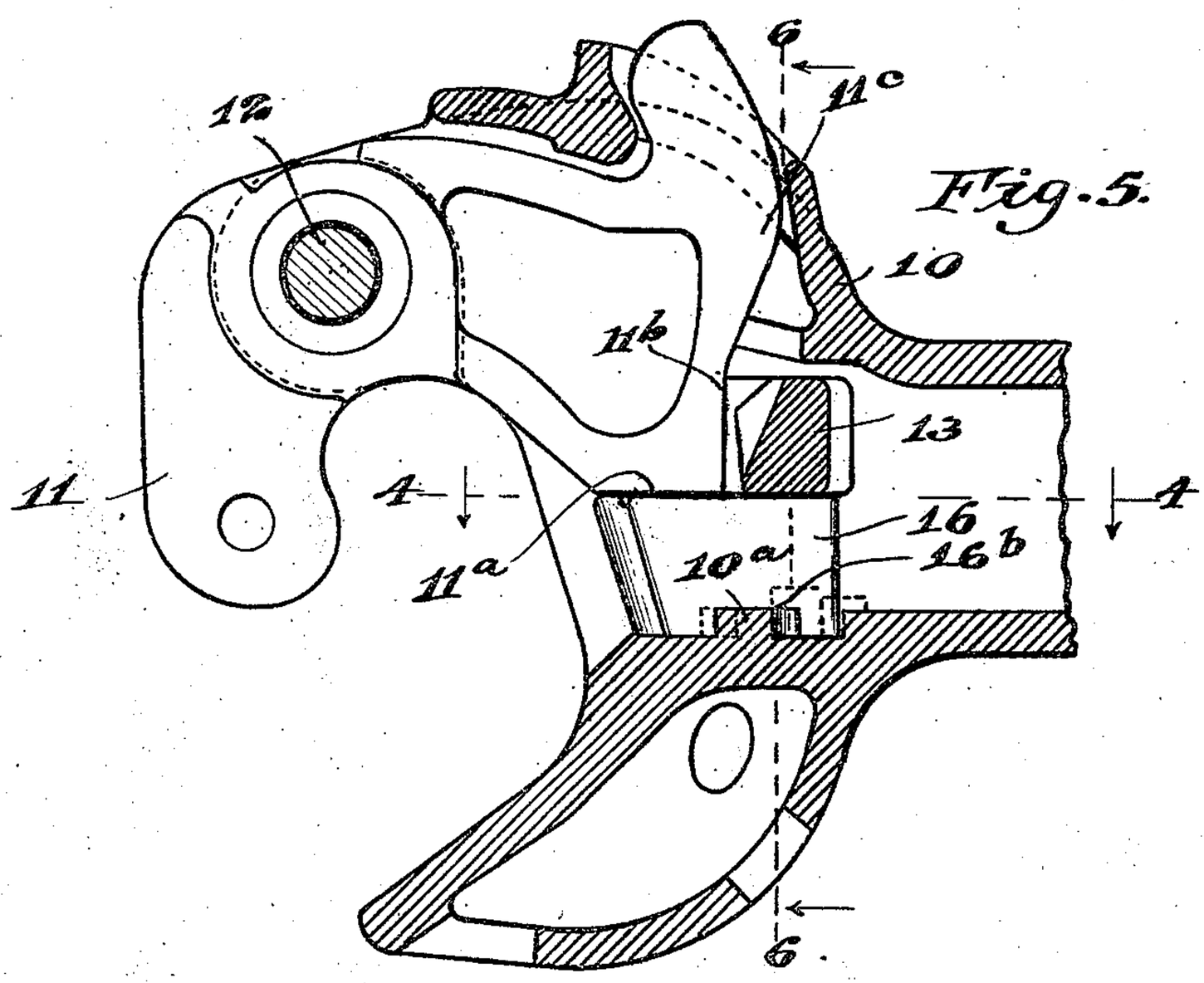

Fig. 5.

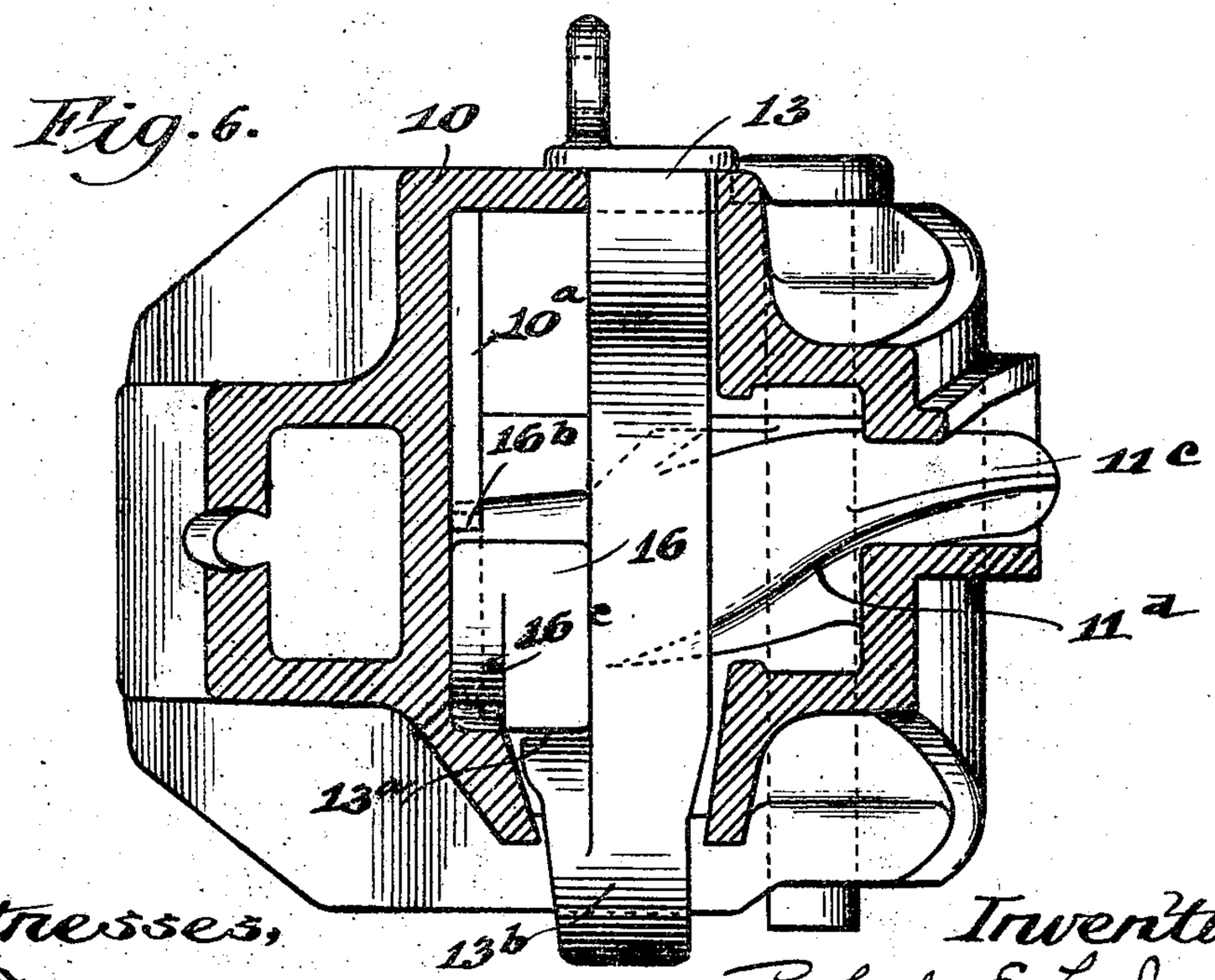

Fig. 6.

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4 SHEETS—SHEET 4.

Fig. 7.

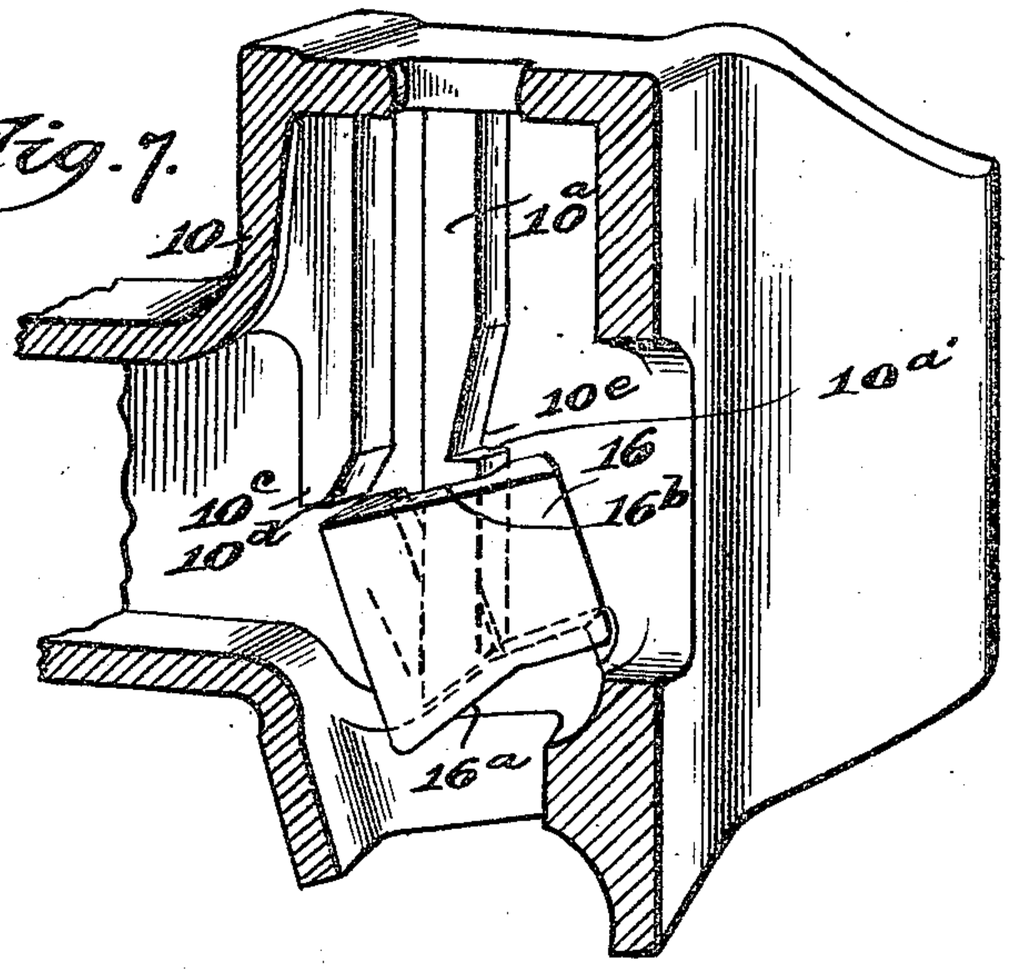
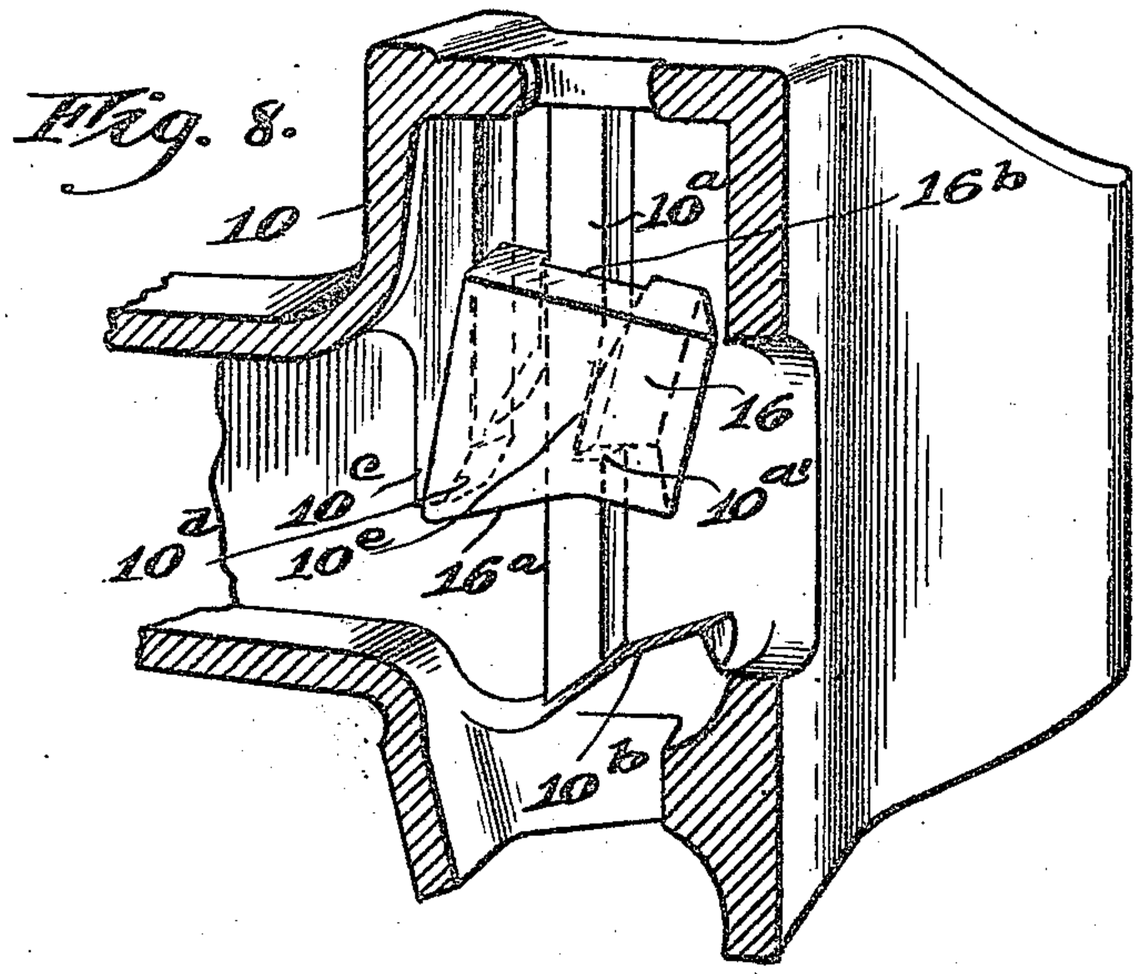


Fig. 8.



Witnesses,

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UNITED STATES PATENT OFFICE.

ROBERT E. L. JANNEY, OF CHICAGO, ILLINOIS, ASSIGNOR TO AMERICAN STEEL FOUNDRIES, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

CAR-COUPLING.

991,783. Specification of Letters Patent. Patented May 9, 1911.

Application filed August 5, 1909. Serial No. 511,268.

To all whom it may concern:

Be it known that I, ROBERT E. L. JANNEY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Car-Couplers, of which the following is a specification.

My invention relates to that class of couplers of the Janney type which employ a pivoted knuckle, a lock therefor, and a lifter for operating the lock.

Specifically described, my invention comprises a coupler-head, a knuckle pivoted therein, a vertically movable lock block, a lifter and knuckle-opener for lifting said lock and opening said knuckle, and anti-creeping and lock-setting means applied to the lock block.

In the accompanying drawings—Figure 1 is a partial section showing the knuckle closed and locked and the lifter down; Fig. 2 is a similar view showing the lock released and in the lock-set position. Fig. 3 is a similar view, showing the lifter, having performed its functions of throwing the knuckle, ready to drop to its original position; Fig. 4 is a section on line 4—4 of Fig. 5, showing in full lines the lock in lock-set position, and in dotted lines the lock in normal locked position; Fig. 5 is a section on line 5—5 of Fig. 1; Fig. 6 is a section of the coupler head on line 6—6 of Fig. 5. Fig. 7 is a perspective sectional view through the head and shank, showing the lock in the locking position; and Fig. 8 is a similar view showing the lock on the lock set.

In the drawings, 10 represents the coupler-head, 11 the knuckle, and 12 the knuckle-pin. The lifter 13 is of the vertically movable type and in service is provided with a chain 14 and operating arm 15. The lifter 13 is also provided with a lock-carrying ledge 13^a, and a downwardly and forwardly extending foot 13^b, the forward face of which is provided with a knuckle opening cam 13^c. The knuckle 11 has a locking-face 11^a, a cut-away portion 11^b, and an enlargement 11^c provided for a purpose hereinafter described. The under surface 11^d of the knuckle-tail is inclined to form a cam surface which is acted upon by the cam surface 13^c of the lifter and opener to assist in opening the knuckle.

The lock is provided with means both for anti-creeping and lock-setting, and as this forms the gist of my invention I will now describe the same in detail.

As will be seen by reference to Figs. 4, 7 and 8 the coupler-head is provided with a vertical rib 10^a, a diagonal ledge 10^b, and a depending flange 10^c, the lower front face of which flange is beveled or cut away as at 10^d. The vertical rib 10^a is provided midway of its height with a triangular notch 10^e, this, in connection with the peculiar construction of the lock, providing the lock-setting means. The lock 16 is of polygonal form, its lower edge 16^a being formed diagonal to the horizontal axis of the lock for a double purpose, as will be hereinafter described. Upon one side of the lock 16, and adapted to coöperate with the vertical rib 10^a of the coupler-head, I provide a slot 16^b of peculiar formation, as shown in Fig. 1. This slot is contracted from its upper portion to a point near the middle thereof, then is flared from thence to the lower edge of the lock. A further cut-away portion 16^c is provided at the back of the lock. In normal locked position, as shown in Figs. 1, 4, and 7, the lock 16 is carried by the diagonal ledge 10^b of the coupler-head, and, as will be seen in Fig. 7 is slightly inclined or tilted backward, the upper rear corner 16^d of which rests beneath the ledge 10^c of the coupler-head.

Upon a lifting movement by the lifter 13, the ledge 13^a will raise the rear end of the lock first, thus freeing it from the ledge 10^c. If the lifting movement is continued until the lock is raised to the point shown in the full line position of Fig. 4 and in Fig. 8 the lower front portion of the slot 16^b will register with the notch 10^e in the rib 10^a, the cut-away portion 16^c of the block allowing the block to tilt forward in order to occupy the lock-set notch. As will be seen, the knuckle is then free to be swung open and as the lifter is released will drop to normal unexposed position, as shown in Fig. 1. As the knuckle is swung open by the separation of the cars, the forward end of the lock is raised by the upward incline on the upper surface of the knuckle-tail, thus releasing it from the lock-set ledge 10^a, while the rear of the lock being unsupported drops thus placing the lock in an inclined position and carrying the engaging surface 16^d of the lock out of line with the shoulder of the notch 10^e. The lock is held in this position during the return move-

ment of the knuckle. When the knuckle is completely closed the lock will fall by gravity to the original position of Fig. 1.

If it is desired to throw the knuckle open the lifting movement is continued until the knuckle-opening cam 13^c of the lifter contacts the cam surface $11^{d'}$ of the knuckle tail, the cam action forcing the knuckle open, the lock meanwhile being carried by the tail of the knuckle. As soon as the lifter and opener is released it will fall by gravity to its normal position, the lock being meanwhile carried on the tail of the knuckle and ready to drop to locked position upon the return of the knuckle to closed position.

I claim:

1. In a coupler of the class described, a coupler head and a pivoted knuckle, said head being provided with a notched vertical rib in combination with a lock adapted to be guided upon said rib, a lifter and opener for lifting said lock and opening said knuckle, said lock being adapted to be supported by the notch in said rib when raised by the lifter to free the knuckle.

2. In a coupler of the class described a coupler-head and pivoted knuckle, said head having a vertical guide-rib provided with a lock-set notch and an anti-creeping ledge to the rear of said rib, a lock mounted to slide upon said rib and to seat in the notch in the rib when raised to lock-set position, and a lifter adapted to engage the lock to free it from the anti-creeping ledge, and by further movement to raise the lock to release the knuckle, and finally to tilt the lock into engagement with the lock-set.

3. In a coupler of the class described, a coupler head and a pivoted knuckle, said head being provided with a vertical rib, in combination with a block lock adapted to be guided upon said rib, a combined lifter and opener for lifting said lock and opening said knuckle, said lifter and opener being adapted to return to its original position after lifting the lock to lock-set position.

4. A coupler of the class described, comprising, in combination, a coupler head having a guide rib therein, a pivoted knuckle, a lock adapted for vertical movement on said rib, anti-creeping and lock-setting means directly associated with said lock and said rib, and a combined lifter and opener for lifting said lock and opening said knuckle, substantially as described.

5. A coupler, comprising, in combination, a head having a notched vertical rib, a pivoted knuckle, an anti-creeping ledge, a lock adapted to slide and rock upon said rib and to seat in the notch in said rib when raised to lock-set position, and a combined lifter and opener for lifting said lock and opening said knuckle, substantially as described.

Signed at Chicago, Ill., this 26th day of July, 1909, in the presence of two witnesses.

ROBERT E. L. JANNEY.

Witnesses:
HENRY HANNAU,
S. M. DARLING.