

No. 830,716.

PATENTED SEPT. 11, 1906.

G. A. HERMANSON.
CAR COUPLING.

APPLICATION FILED JUNE 2, 1906.

2 SHEETS—SHEET 2.

Fig. 4

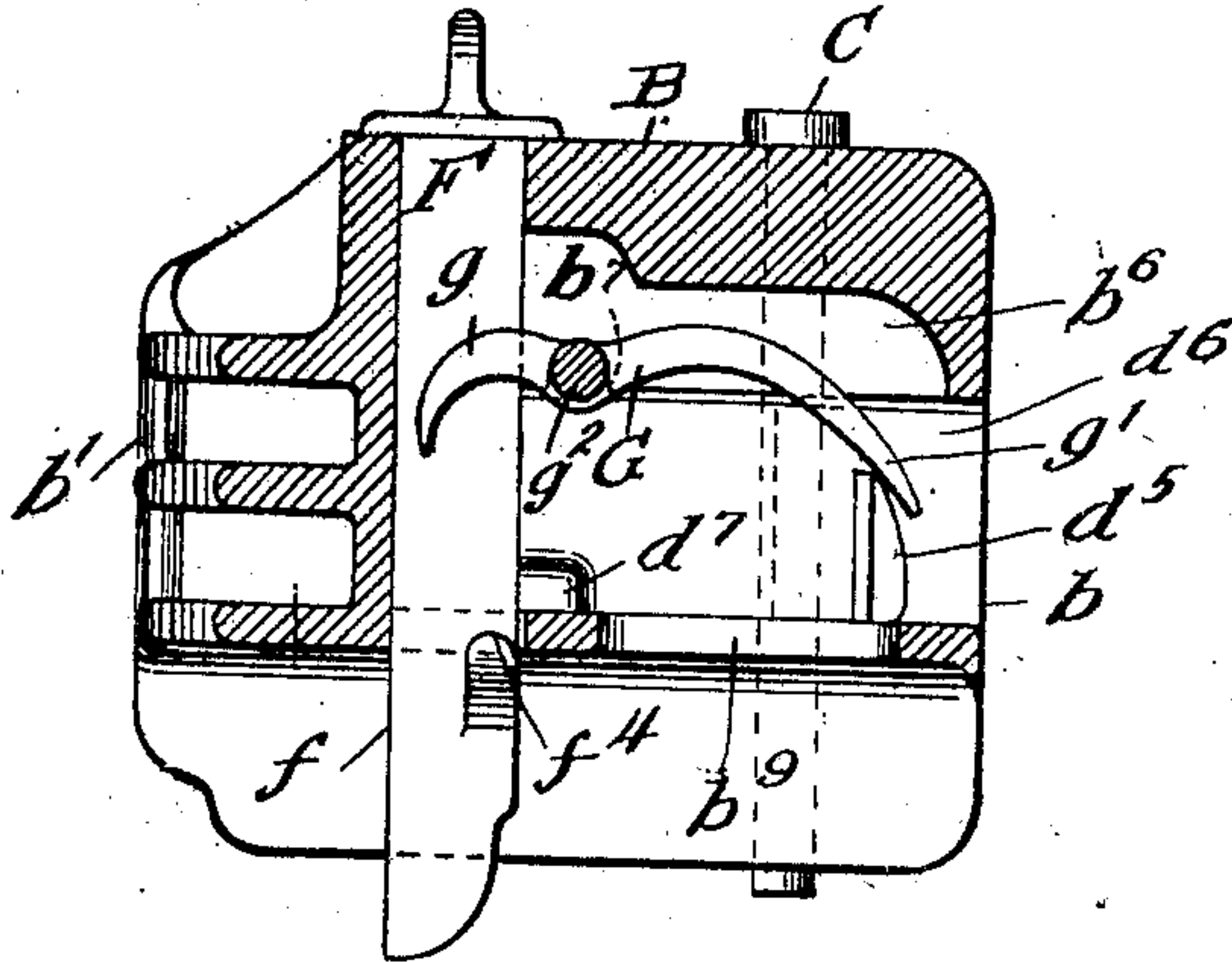


Fig. 7

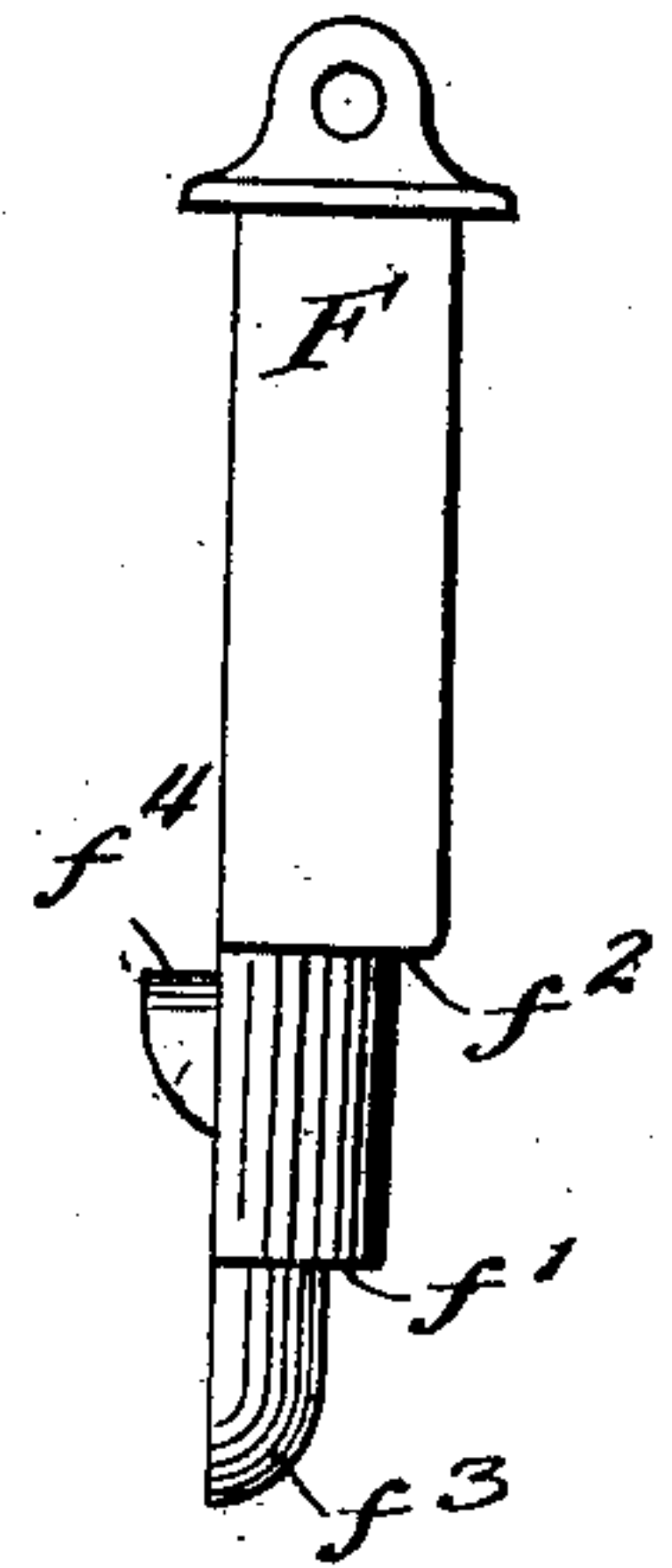


Fig. 5

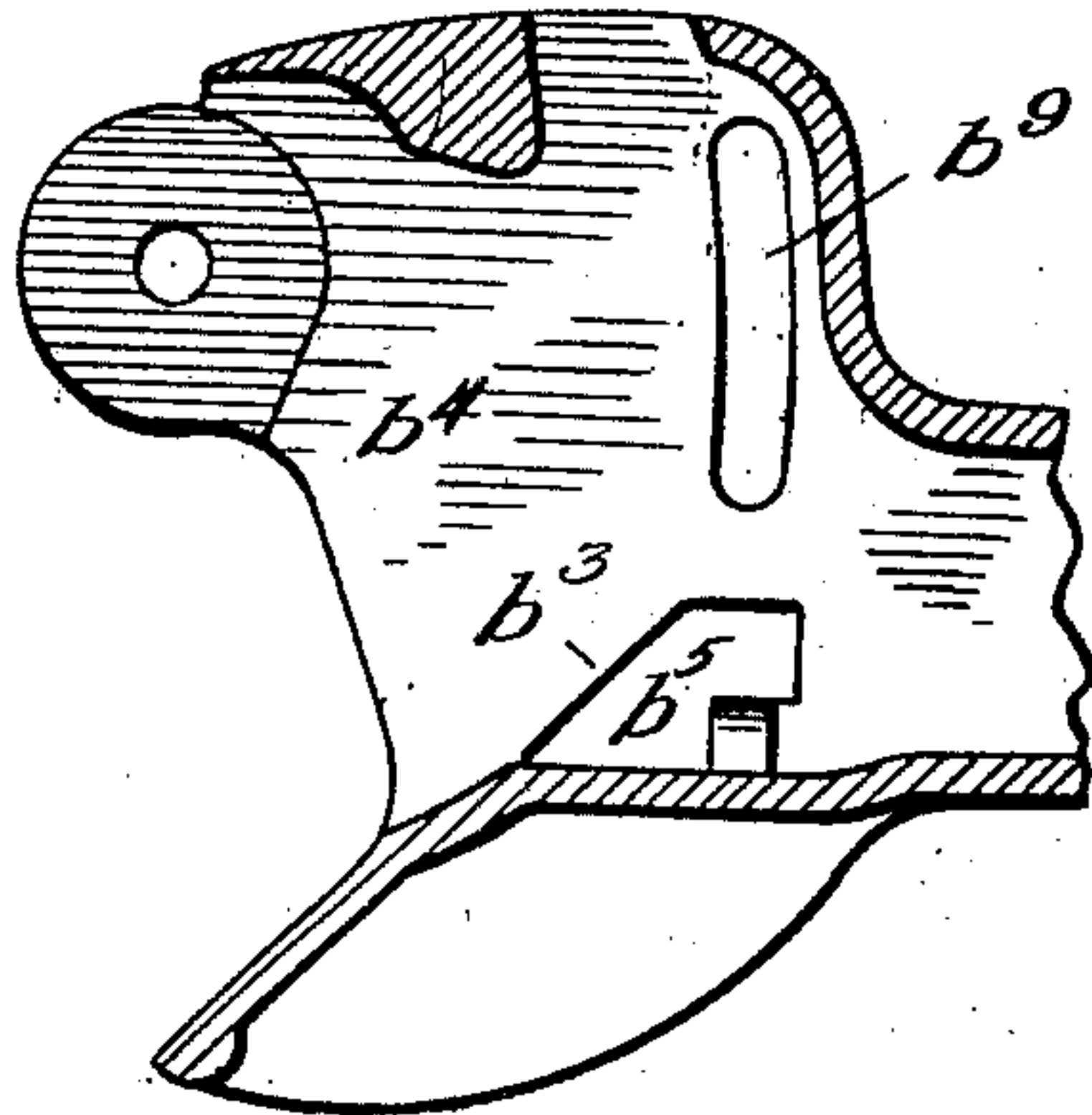


Fig. 8

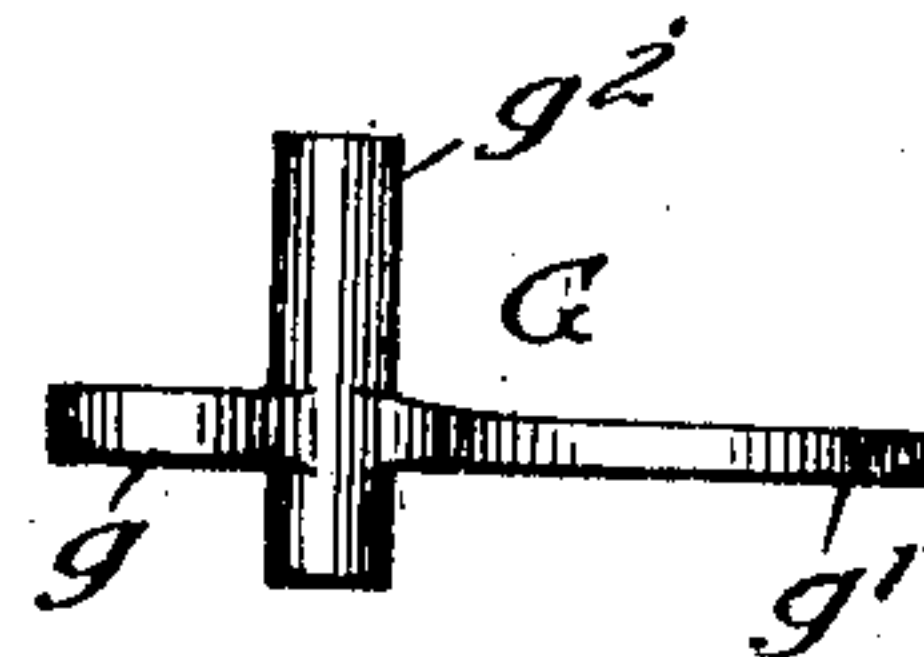
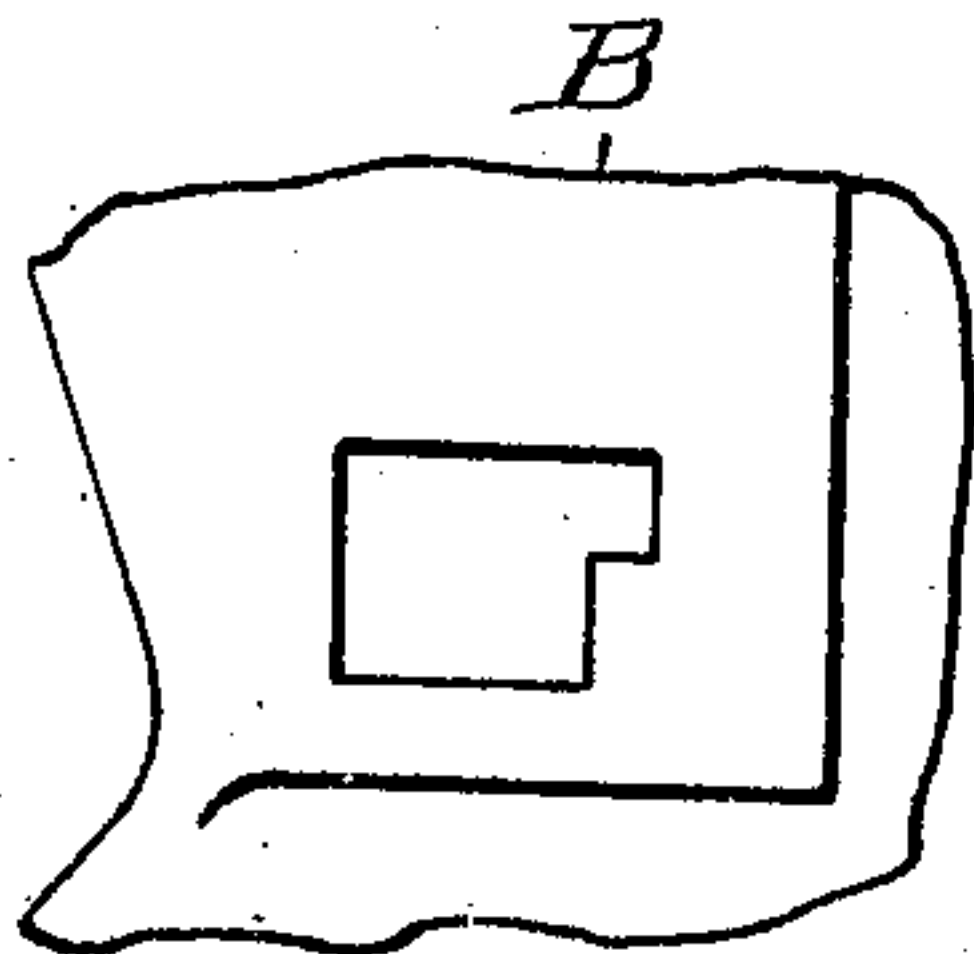


Fig. 6



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UNITED STATES PATENT OFFICE.

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CAR-COUPLING.

No. 830,716.

Specification of Letters Patent.

Patented Sept. 11, 1906.

Application filed June 2, 1906. Serial No. 319,802.

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 of the Master Car-Builders' type having the customary forked draw-head, pivoted knuckle, and vertically-movable gravity-lock.

The object of my invention is to provide a Master Car-Builders' coupler of a simple, strong, efficient, and durable construction in which the lock may be set in position for coupling and uncoupling and in which the knuckle may be automatically thrown open by the lifting of the lock.

My invention consists in the means I employ to practically accomplish this object or result—that is to say, it consists in combination with the draw-head, pivoted knuckle, and vertically-movable lock, having at its lower end a lock-set leg provided with a lock-set shoulder adapted to engage the bottom web or floor of the draw-head and hold the lock in position for uncoupling, the lock-set leg being provided on its rear side with a finger or projection adapted to engage the short arm of a knuckle-throwing lever, of a transversely-extending knuckle-throwing lever mounted in the draw-head above the knuckle-tail and fitting in a transverse slot or recess in the upper wall or web of the draw-head and having an integral pivot or shaft fitting in a longitudinal slot in the upper wall of the draw-head, the knuckle-throwing lever having a short arm engaging the finger on the rear side of the lock, and a knuckle-throwing arm engaging the rear arm or tail of the knuckle, the knuckle-tail itself being provided at its rear end with a knuckle-throwing lug or projection engaged by said arm of the knuckle-thrower.

My invention also consists in the novel construction of parts and devices and in the novel combinations of parts and devices herein shown and described.

In the accompanying drawings, forming a part of this specification, Figure 1 is a central vertical longitudinal section of a car-coupler embodying my invention. Fig. 2 is

a similar view showing the lock in its elevated or lock-set position. Fig. 3 is a horizontal section on line 3 3 of Fig. 1. Fig. 4 is a vertical cross-section on line 4 4 of Fig. 3. Fig. 5 is a detail horizontal section of the draw-head. Fig. 6 is a detail partial plan view showing the lock opening in the upper face of the draw-head. Fig. 7 is a detail side elevation of the lock, and Fig. 8 is a detail plan view of the knuckle-thrower.

In the drawings, A represents the draw-bar; B, the draw-head having the customary pivot-arm b and guard-arm b' ; C, the pivot-pin; D, the knuckle having the customary front arm or nose d and rear arm or tail d' , and F is the lock. The rear arm of tail d' of the knuckle has a vertical opening d^2 therein, preferably of substantially triangular shape with rounded corners d^3 . This vertical opening in the tail of the knuckle I find by experiment not only lessens the weight of the knuckle as a whole, but as it relieves the metal from liability to casting or shrinkage strains in the casting operation it also materially increases its strength, durability, and safety, diminishing the liability to breakage. The knuckle-tail d' also has a hook or projection d^4 , engaging a corresponding hook or projection b^2 on the draw-head and serving to relieve the pivot-pin C from strain in part when the knuckle is closed.

The vertically-movable gravity-lock F has at its lower end a lock-set leg f , provided with a lock-set shoulder f' , adapted to engage a lock-set ledge b^3 on the bottom web or floor b^4 of the draw-head and support the lock in position for uncoupling. The lock F has a further lock-set shoulder f^2 , adapted to rest upon the rear arm or tail of the knuckle as the knuckle swings open and support the lock in position for coupling. The lock-set leg f has a tapering or rounded end f^3 at its lower end to adapt it to better enter the opening b^5 in the bottom web or floor b^4 of the draw-head, through which the lock-set leg projects when the lock is in its lowermost position. The lock F is also provided on its rear side with a knuckle-throwing finger or projection f^4 , adapted to engage the operating-arm g of the knuckle-throwing lever G, which is mounted transversely in the upper portion of the draw-head above the knuckle-tail, the draw-head having a transverse slot

or recess b^6 to receive the knuckle-thrower G. The knuckle-throwing arm g' of the knuckle-thrower G is preferably curved substantially as shown in Fig. 4 of the drawings and engages a knuckle-throwing lug d^5 , projecting from the rear curved end d^6 of the knuckle-tail d' . The short or operating arm g of the knuckle-thrower G is preferably given somewhat of a hook shape, as indicated in Fig. 4, to cause it to better engage the knuckle-throwing finger on the rear side of the lock. The rear arm or tail d' of the knuckle is also preferably provided with a slight cam or curved projection d^7 near its front portion to engage the lock as the knuckle closes and push the lock backward at its upper end and disengage its lock-set shoulder f' from the bottom web or floor of the draw-head, so that the lock may drop properly to place when the knuckle closes.

The knuckle-thrower G has an integral pivot or shaft g^2 extending longitudinally of the draw-head and fitting in a longitudinal slot or recess b^7 , formed in the upper wall or web b^8 of the draw-head.

H is the lifting-lever, connected by a clevis h with the lock F in the usual manner. The bottom web b^4 of the draw-head is provided with a transverse slot b^9 thereon to accommodate the knuckle-throwing arm g' of the knuckle-thrower G.

I claim—

1. In a car-coupler, the combination with a forked draw-head, of a pivoted knuckle having a knuckle-throwing lug projecting from the rear end or face of its tail, a vertically-movable gravity-lock having a knuckle-throwing finger projecting from its rear side and a transversely-arranged knuckle-throwing lever fitting in a transverse slot or recess in the upper web or wall of the draw-head above the knuckle-tail and having an operating-arm engaging said finger on the lock and a knuckle-throwing arm engaging said lug on the knuckle-tail, substantially as specified.

2. In a car-coupler, the combination with a forked draw-head, of a pivoted knuckle having a knuckle-throwing lug projecting from the rear end or face of its tail, a vertically-movable gravity-lock having a knuckle-throwing finger projecting from its rear side and a transversely-arranged knuckle-throwing lever fitting in a transverse slot or recess in the upper web or wall of the draw-head above the knuckle-tail and having an operating-arm engaging said finger on the lock and a knuckle-throwing arm engaging said lug on the knuckle-tail, said knuckle-thrower having an integral pivot or shaft fitting in a longitudinal slot or recess in the upper web or wall of the draw-head, substantially as specified.

3. In a car-coupler, the combination with

a forked draw-head, of a pivoted knuckle having a knuckle-throwing lug projecting from the rear end or face of its tail, a vertically-movable gravity-lock having a knuckle-throwing finger projecting from its rear side and a transversely-arranged knuckle-throwing lever fitting in a transverse slot or recess in the upper web or wall of the draw-head above the knuckle-tail and having an operating-arm engaging said finger on the lock and a knuckle-throwing arm engaging said lug on the knuckle-tail, said lock being provided at its lower end with a lock-set leg having a lock-set shoulder adapted to engage the bottom web or floor of the draw-head, substantially as specified.

4. In a car-coupler, the combination with a forked draw-head, of a pivoted knuckle having a knuckle-throwing lug projecting from the rear end or face of its tail, a vertically-movable gravity-lock having a knuckle-throwing finger projecting from its rear side and a transversely-arranged knuckle-throwing lever fitting in a transverse slot or recess in the upper web or wall of the draw-head above the knuckle-tail, and having an operating-arm engaging said finger on the lock and knuckle-throwing arm engaging said finger on the knuckle-tail, said lock being provided at its lower end with a lock-set leg having a lock-set shoulder adapted to engage the bottom web or floor of the draw-head, said lock having also a further lock-set shoulder adapted to engage and rest upon the rear arm or tail of the knuckle, substantially as specified.

5. In a car-coupler, the combination with a forked draw-head, of a pivoted knuckle having a knuckle-throwing lug projecting from the rear end or face of its tail, a vertically-movable gravity-lock having a knuckle-throwing finger projecting from its rear side and a transversely-arranged knuckle-throwing lever fitting in a transverse slot or recess in the upper web or wall of the draw-head above the knuckle-tail and having an operating-arm engaging said finger on the lock and a knuckle-throwing arm engaging said lug on the knuckle-tail, said knuckle-thrower having an integral pivot or shaft fitting in a longitudinal slot or recess in the upper web or wall of the draw-head, the rear arm or tail of the knuckle having a vertical opening through the same, substantially as specified.

6. In a car-coupler, the combination with a forked draw-head, of a pivoted knuckle having a rear arm or tail furnished with a knuckle-throwing lug at its rear end, of a lock having a knuckle-throwing finger on its rear face and a knuckle-thrower extending transversely of the draw-head above the knuckle-tail, substantially as specified.

7. In a car-coupler, the combination with

a forked draw-head, of a pivoted knuckle having a rear arm or tail furnished with a knuckle-throwing lug at its rear end, of a lock having a knuckle-throwing finger on its rear face and a knuckle-thrower extending transversely of the draw-head above the knuckle-tail, said knuckle-thrower having an integral pivot extending longitudinally of the draw-head, substantially as specified.

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Witnesses:

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