(Model.)

4 Sheets—Sheet 1.

J. MUNTON.

MOLD FOR CASTING STEEL CAR COUPLINGS.

No. 482,687. Patented Sept. 13, 1892.

Fig. 1.

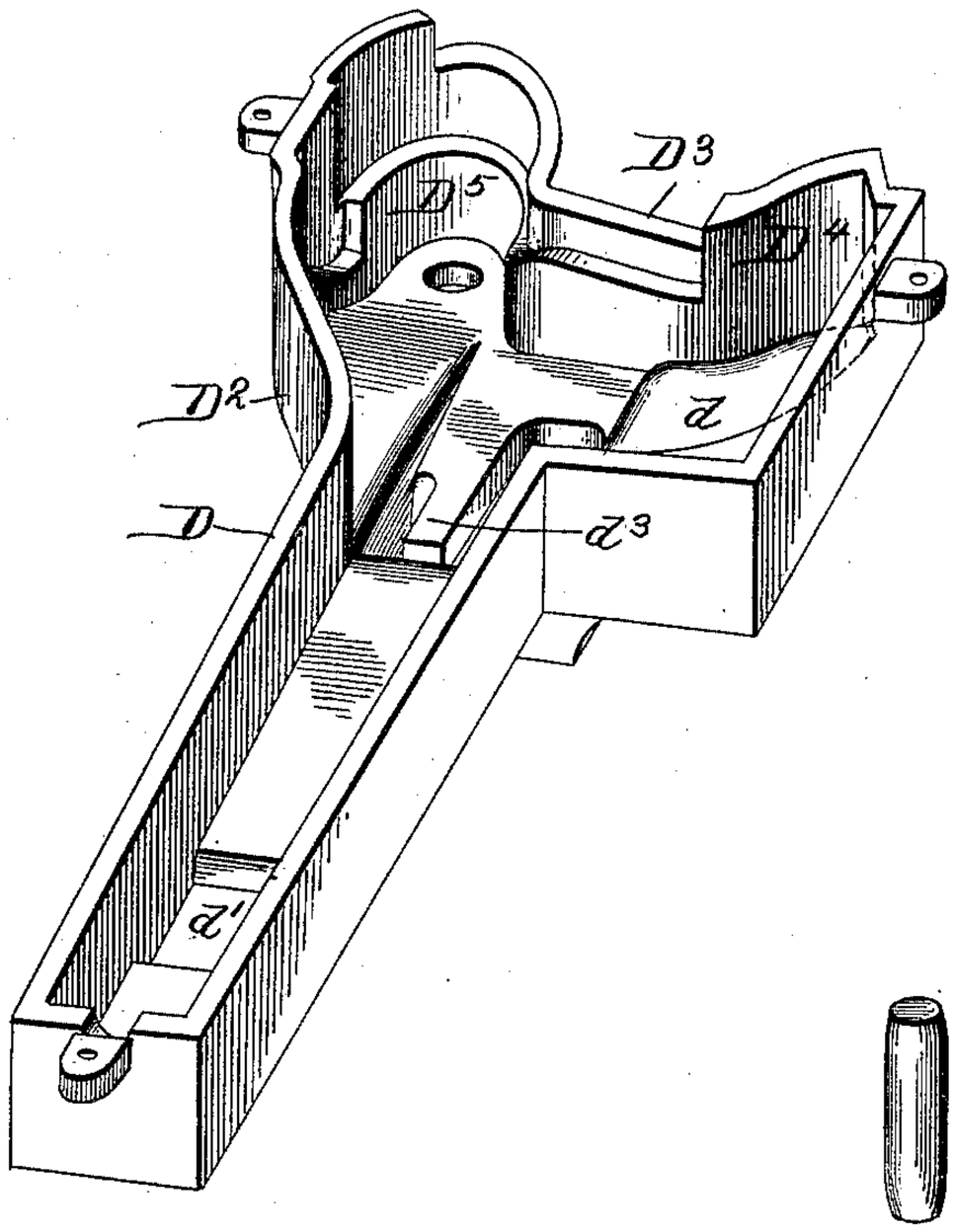


Fig. 7.

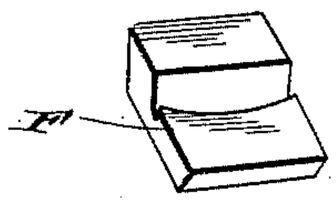


Fig. 3.

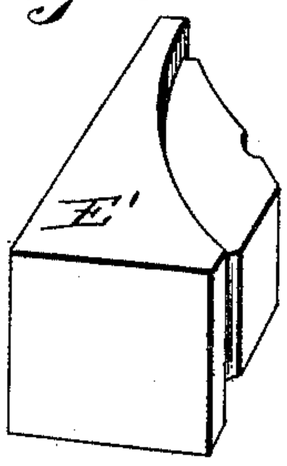
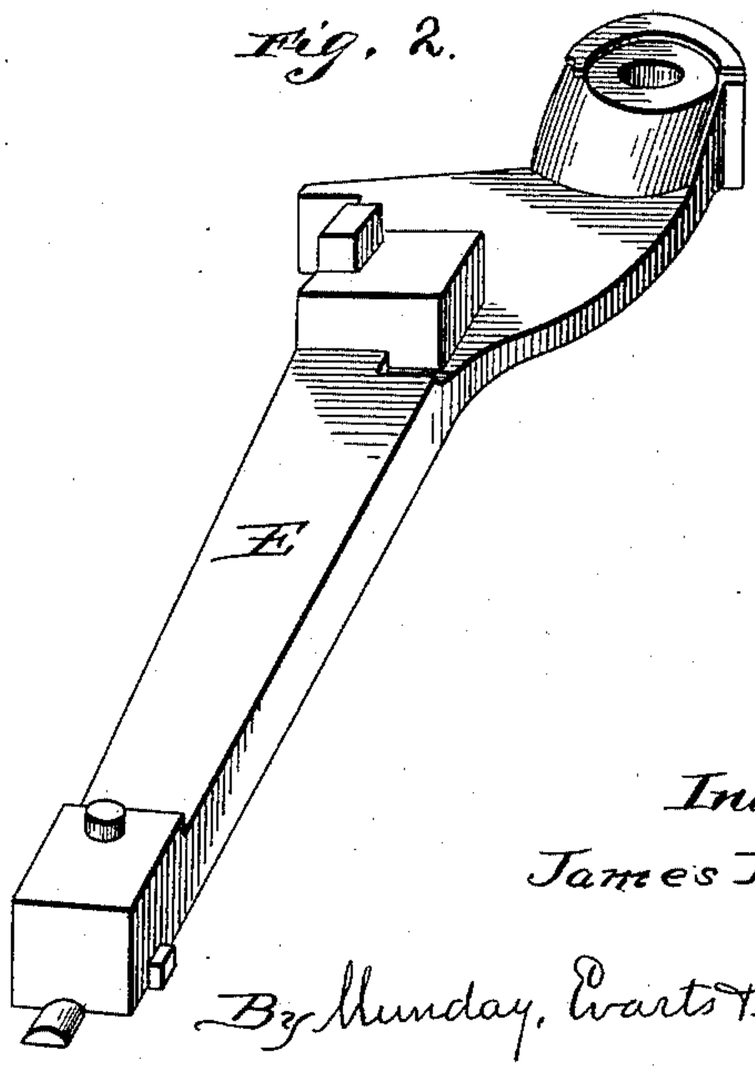


Fig. 2.



Witnesses:
Lew. E. Curtis
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His Attorneys.

(Model.)

4 Sheets—Sheet 2.

J. MUNTON.

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Fig. 4.

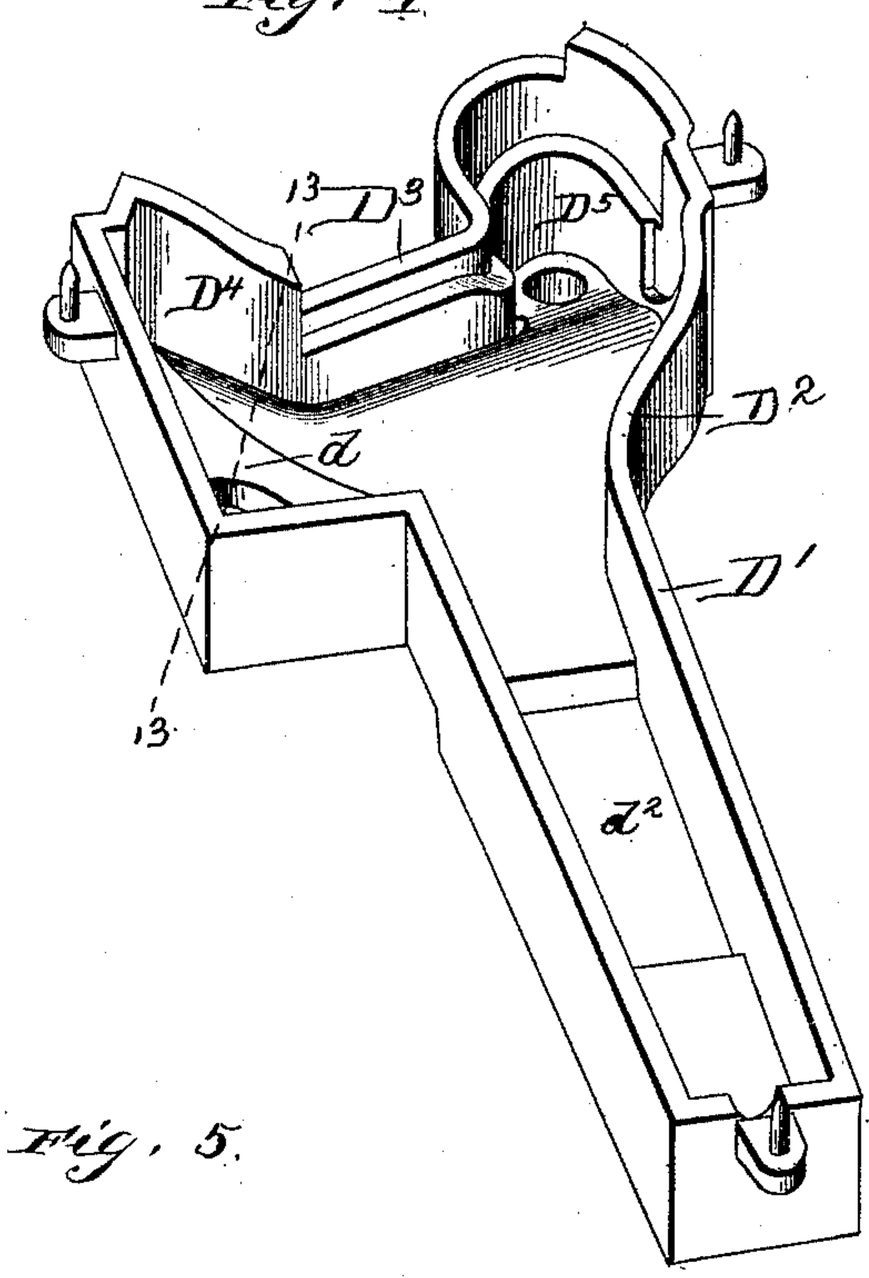


Fig. 8.

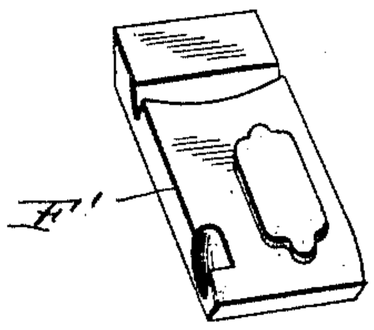


Fig. 5.

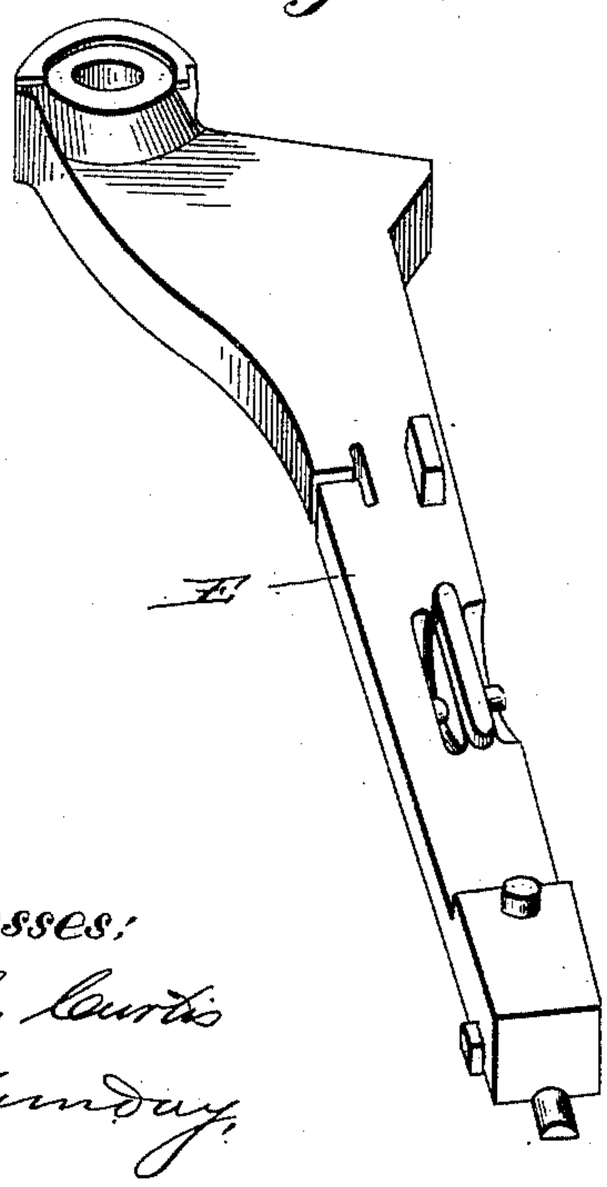
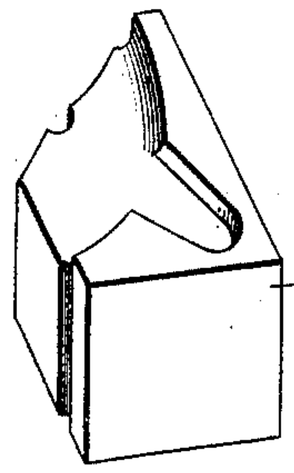


Fig. 6.



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(Model.)

4 Sheets—Sheet 3.

J. MUNTON.

MOLD FOR CASTING STEEL CAR COUPLINGS.

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Fig. 9

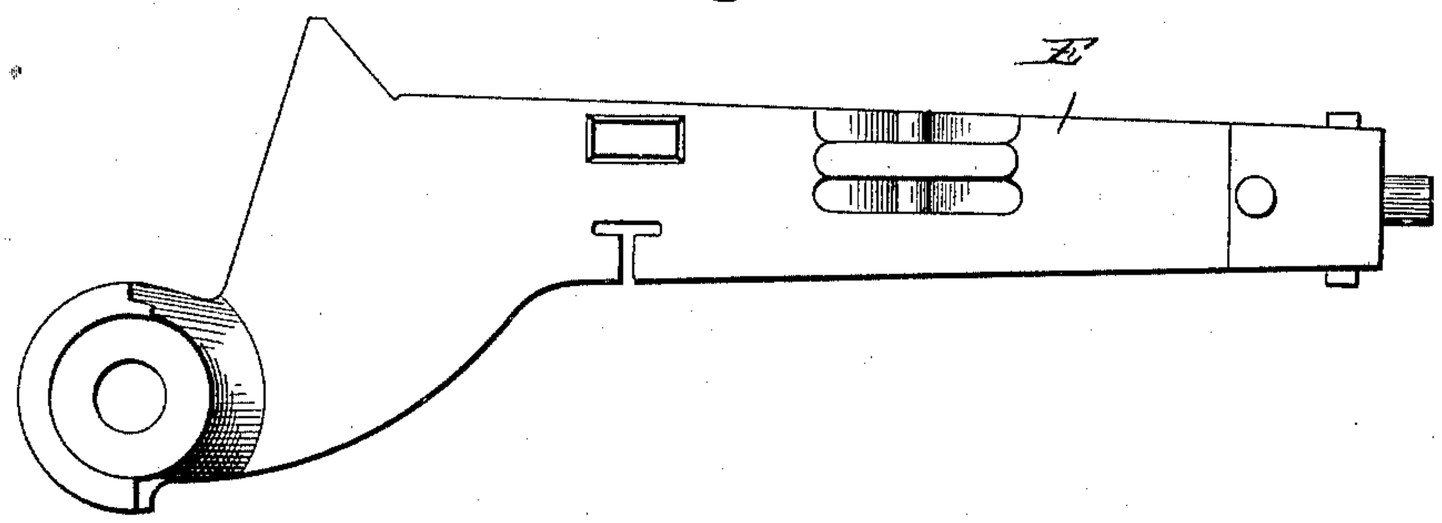


Fig. 10.

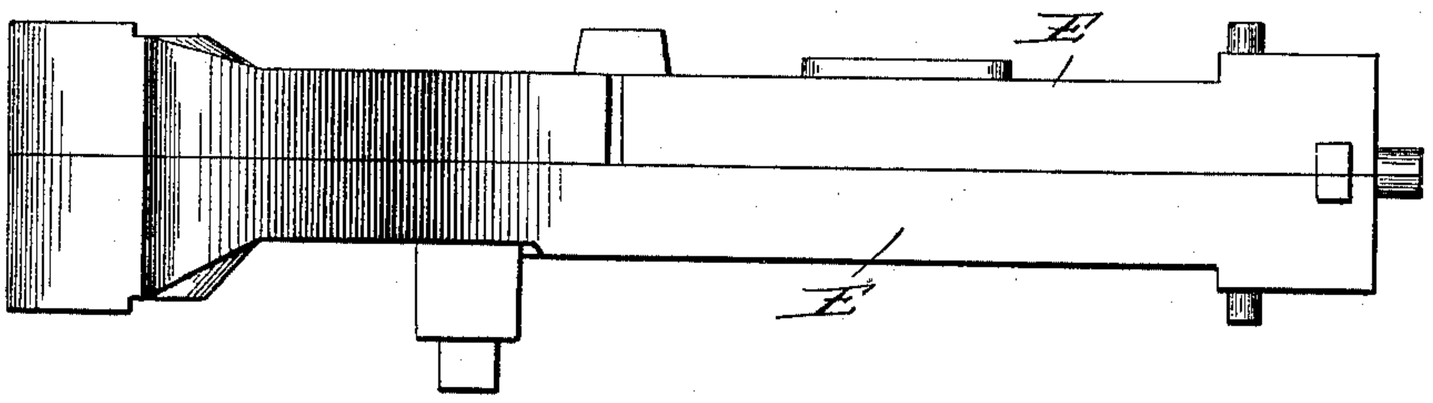


Fig. 11.

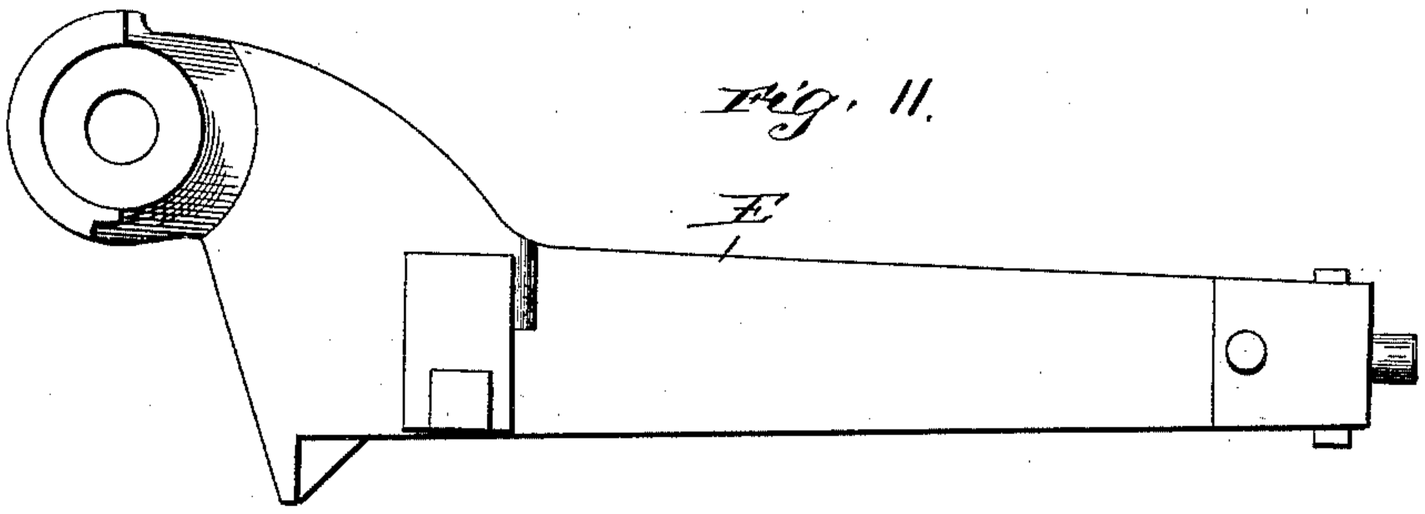


Fig. 12.

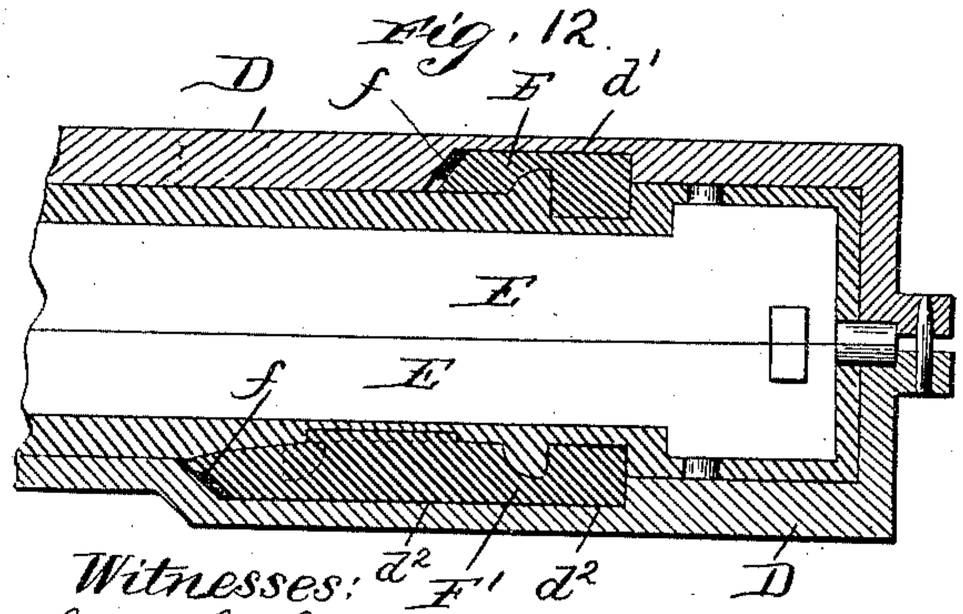
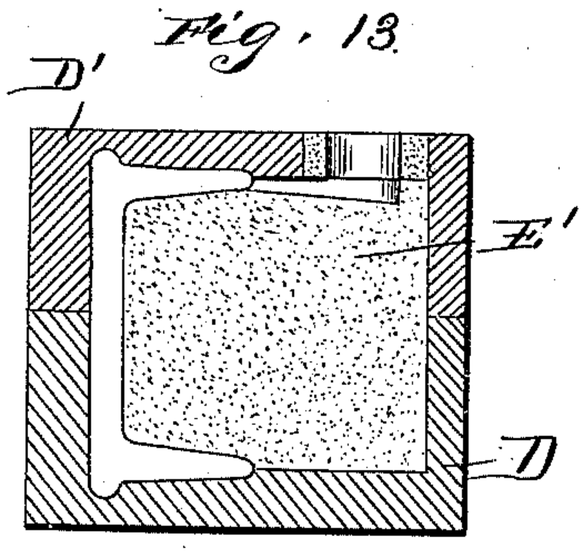


Fig. 13.



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(Model.)

4 Sheets—Sheet 4.

J. MUNTON.

MOLD FOR CASTING STEEL CAR COUPLINGS.

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Fig. 14.

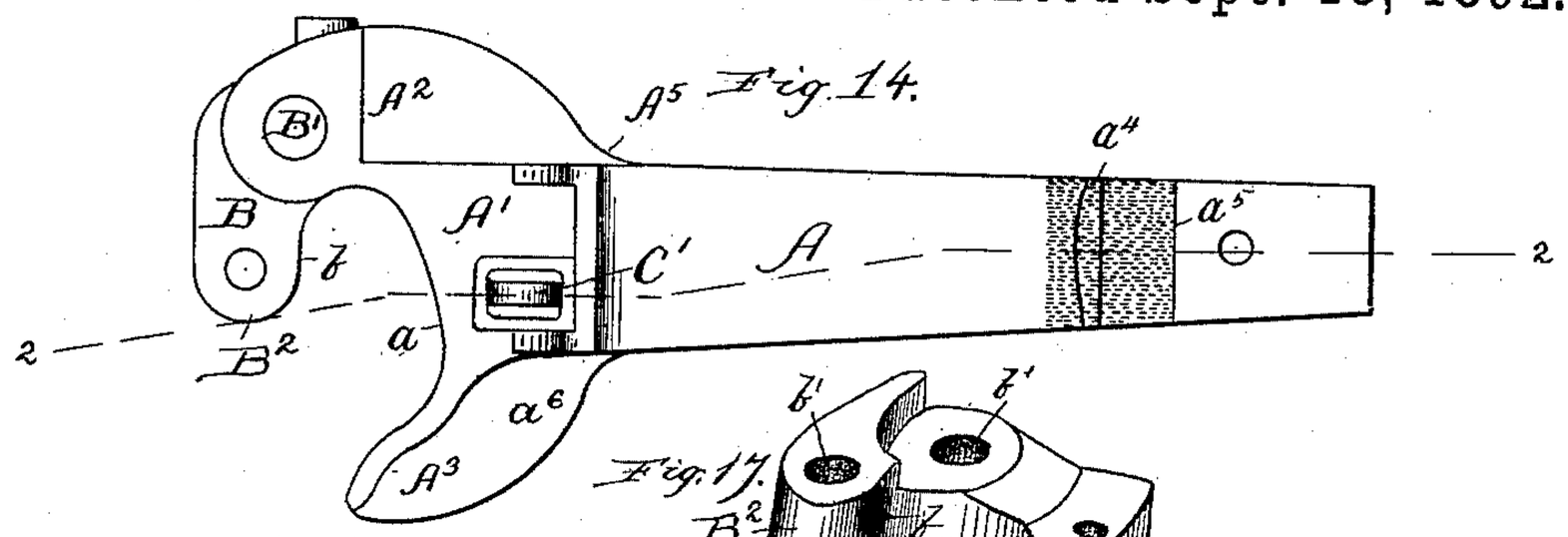


Fig. 17.

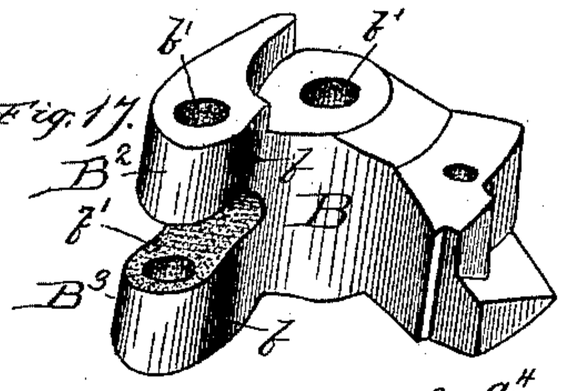


Fig. 15.

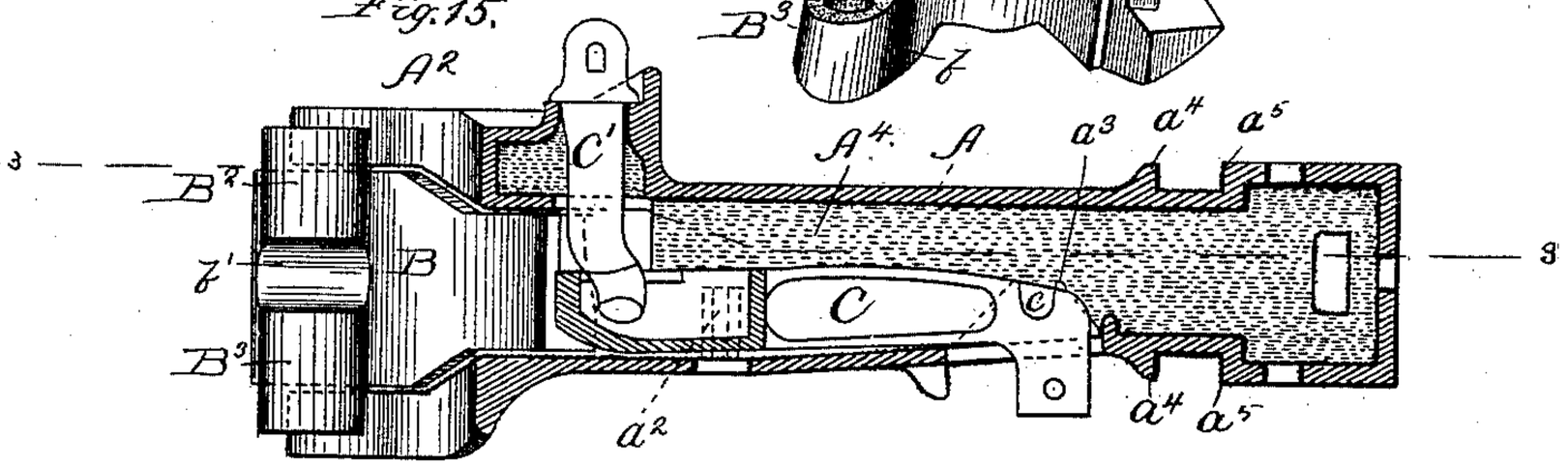


Fig. 16.

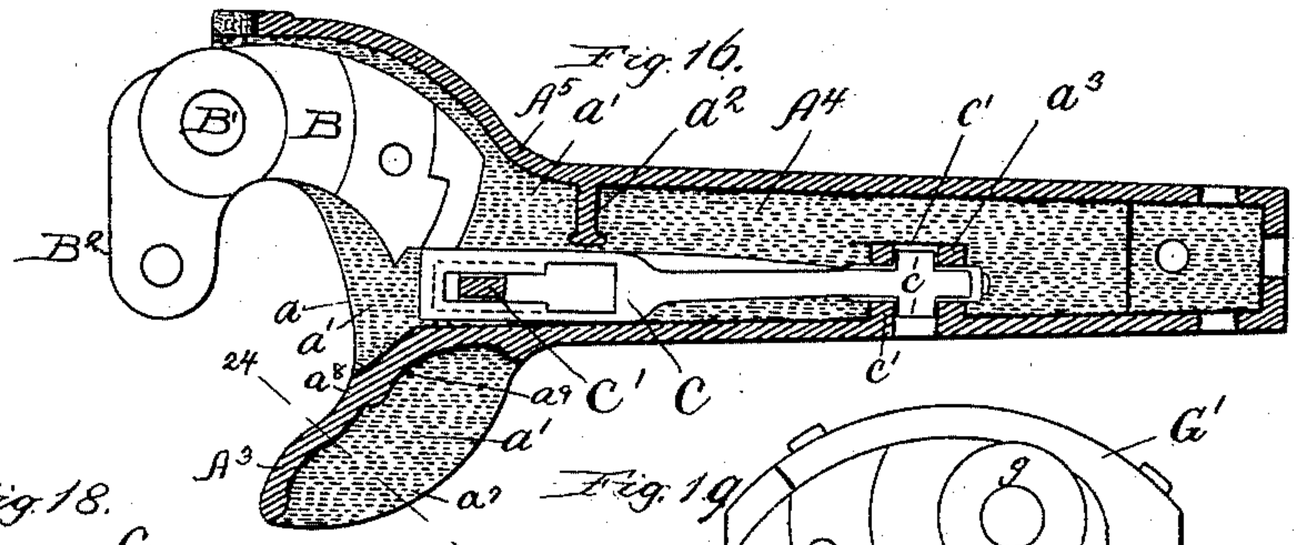


Fig. 18.

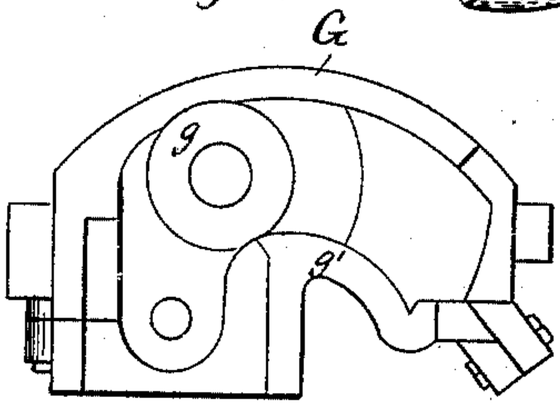


Fig. 19.

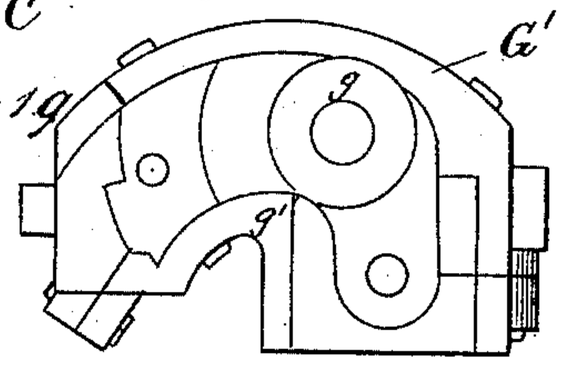


Fig. 20.

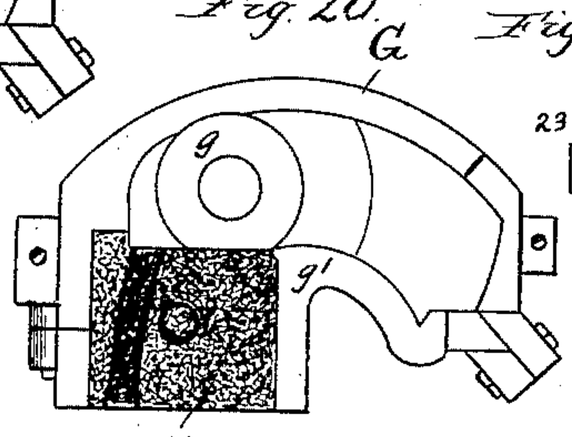
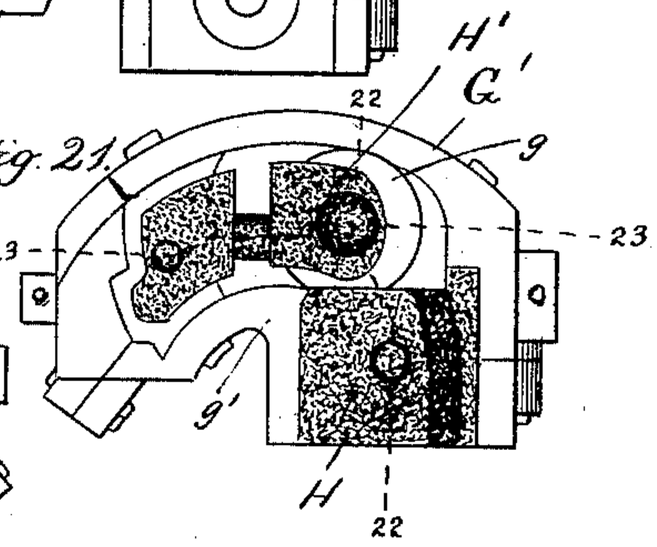


Fig. 21.



Witnesses:
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Inventor:
James Munton
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His Attorneys.

UNITED STATES PATENT OFFICE.

JAMES MUNTON, OF MAYWOOD, ILLINOIS.

MOLD FOR CASTING STEEL CAR-COUPLINGS.

SPECIFICATION forming part of Letters Patent No. 482,687, dated September 13, 1892.

Application filed January 5, 1891. Serial No. 376,789. (Model.)

To all whom it may concern:

Be it known that I, JAMES MUNTON, a citizen of the United States, residing in Maywood, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Molds for Casting Steel Car-Couplers, of which the following is a specification.

My invention relates to iron or metallic molds for casting steel car-couplers.

The object of my invention is to provide an iron or metallic mold in which interlocking car-couplers may be cast in any desired shape or form without subjecting the cast-steel to injurious strains, cracks, or flaws.

In the drawings similar letters of reference indicate like parts throughout all the figures.

Figure 1 is a perspective view of one-half of an iron or metal mold embodying my invention, and Figs. 2 and 3 are similar views of the core-blocks which fit therein. Fig. 4 is a like perspective view of the remaining half of the mold, and Figs. 5 and 6 perspective views of the cores which fit in this other half of the mold. Fig. 7 is a perspective view of a sliding core-block which fits in a pocket formed in the half-mold shown in Fig. 1, and Fig. 8 is a similar perspective view of a sliding core-block which fits in the pocket formed in the half-mold shown in Fig. 4. Fig. 9 is a top or plan view of the core. Fig. 10 is a side elevation of the core, showing the two halves of it placed together. Fig. 11 is a bottom view of the core. Fig. 12 is a partial vertical longitudinal central section showing the mold and coupler draw-bar cast therein. Fig. 13 is a vertical cross-section of the mold and core, taken approximately in the direction of line 13 13 of Fig. 4. To enable the construction and operation of the mold to be more clearly and readily understood, I have shown at Fig. 14 a plan view of the form of coupler which is produced by or cast in the mold, at Fig. 15 a vertical section of the coupler on line 2 2 of Fig. 14, at Fig. 16 a horizontal section on line 3 3 of Fig. 15, and at Fig. 17 a perspective view of the knuckle. Figs. 18 and 19 are plan views of the two halves of the mold in which the knuckle of the coupler is cast, and Figs. 20 and 21 are similar views showing the cores of the knuckle-molds in place.

Before beginning the description of the mold and its core, which constitutes the invention or improvement herein claimed, it will materially aid to an understanding of the same to first briefly describe the coupler or casting which is designed to be produced by the mold.

In the drawings, A represents the draw-bar of the coupler, A′ the coupler-head, and A^2 A^3 its forks or limbs.

B is the knuckle, B′ its pivot, and B^2 B^3 its two forks, hooks, or limbs. The interlocking or engaging surfaces *a* and *b* of the coupler-head and knuckle which receive the corresponding parts of the companion coupler are smooth and formed by the metallic portions of the mold in which the coupler is cast. The surfaces of the coupler which are formed by contact with the non-metallic core are indicated at *a′* and *b′*.

C represents the pivoted locking-bar, and C′ its lifting-link. The locking-bar, it will be observed, is mounted within the chamber A^4 of the hollow draw-bar. An internal flange or projection a^2 is cast upon the draw-bar A near its shoulder or shank A to serve as a guide for the locking-bar. The locking-bar C has pivotal projections *c* cast upon it, and which fit in a suitable bearing *c′*, formed by the internal projections a^3, cast upon the draw-bar.

a^4 and a^5 are external projections on the draw-bar for connecting it to the car or buffer-springs.

D represents one half of the iron or metal mold for the draw-bar and head, and D′ its other or supplementary half.

E E is the non-metallic core to form the hollow chamber A^4 in the draw-bar, and E′ is the core-block which forms the flanges a^6 a^7 upon the coupler-head. The metal mold D is furnished with a pocket *d* to receive the core-block E, and also with pockets *d′* d^2 to receive the sliding core-blocks F F, which form the external shoulders or projections a^4 a^5 upon the draw-bar. The sliding core-blocks F F′ are made enough smaller or shorter than

their pockets d' d^2 to allow for the contracting movement of the steel draw-bar. The space between the end of the pocket and the end of the sliding core-block may be filled in with straw or other dry compressible material *f*.

G is one half-mold, and G′ a corresponding half of the iron or metal mold in which the steel knuckle B is cast, and H H′ are the non-metallic core-blocks employed for making the knuckle.

When the molten steel is poured into the metallic mold and begins to contract, the steel casting A hugs the shoulder D^2 of the mold D, and thus causes the forks, limbs, or hooks A^2 A^3 to draw off or away from the intermediate portion D^3 of the mold which lies between the forks of the coupler-head, and I have found by experiment that the contraction of these forks toward the shoulder D^2 is enough to draw the forks sufficiently off or away from the intermediate portion D^3 of the mold, and thus leave room for the forks to approach each other to the extent required in the contraction of the steel. The shoulder projection d^3 in the bottom of the half-mold D prevents the body portion of the draw-bar at the shank of the forks from moving in the contracting action toward the ends of the forks A^2 A^3, so that the contraction of the casting serves to draw the inclined forks A^2 A^3 out of the forks D^4 D^5 of the mold to a sufficient extent, so that the forks of the casting when thus drawn back from the forks of the mold may have room to move toward each other, and thus compensate for or permit the lateral contraction of the casting without danger of breakage or injury, and this same principle is applied in the mold G for casting the two limbed or forked knuckle B. The circular recess *g* in the mold G likewise serves to hold the bent or crotched portion of the knuckle-casting snugly against the rear wall of the mold, so that the forks of the knuckle-casting B likewise contract away from or draw off of the tapering intermediate portion *g′* of the mold, and thus permit the two forks of the casting to move toward each other as the metal contracts.

As it is obvious that the head end A′ of the casting cannot contract or move toward its shouldered end a^4 a^5, I make provision for the contraction of the steel of the draw-bar by the sliding core-blocks F F′, which form the external shoulders or projections a^4 a^5.

I claim—

1. The mold for casting the draw-bar and forked head of steel car-couplers, comprising two metal half-molds D D′, having a stem portion and two forks D^4 D^5, a core E, and a yielding core-block fitting in a recess or pocket in the metallic stem portion of said mold to form the external projection on the draw-bar and to permit the draw-bar portion of the casting in contracting to move toward the head thereof, substantially as specified.

2. The iron or metallic mold D D′ for casting the fork or divided portion of a car-coupler, said mold having two forks D^4 D^5, furnished with a rounded and tapering intermediate portion D^3, lying between said forks D^4 D^5, said mold being provided with means for slipping or crowding the forks of the coupler-casting off of said intermediate portion of the mold as the metal contracts to give room for the forks to move toward each other in the contracting action of the casting, said means consisting of a shoulder or projection d^3 at the body or shank portion of the mold, and said mold also having a pocket for a core-block in the stem portion thereof, and a core-block fitting in said pocket of smaller diameter than the pocket, and a filling of yielding material at the end of said core-block to permit the stem portion of the coupler-casting to move toward the body or shank portion thereof in contracting, whereby said coupler-castings may be made of steel, substantially as specified.

3. The metal mold for casting steel car-couplings, consisting of two metallic half-molds D and D′, having rounded and tapering intermediate portion D^3, core E, and core-blocks E′, said half-molds having recesses *d* to receive said core-blocks E′, substantially as specified.

4. The metal mold for casting steel car-couplings, consisting of two metallic half-molds D and D′, having rounded and tapering intermediate portion D^3, core E, core-blocks E′, and sliding core-blocks F F′, said half-molds having recesses or pockets *d*, *d′*, and d^2 to receive said core-blocks E′, F, and F′, respectively, substantially as specified.

5. The iron or metallic mold for casting the forked divided portion of a steel car-coupler, said mold having two forks with a rounded intermediate portion between said forks to permit the casting in its contracting action to withdraw its forks from the forks of the mold sufficiently to permit the forks to approach each other as the intermediate body portion of the casting contracts, said mold being provided with a shoulder or projection near the back part of the body or shank portion thereof to cause the casting to hug the back portion of the mold opposite to said forks, and thereby cause the forks of the coupler to withdraw out of the forks of the mold, substantially as specified.

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Witnesses:
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