

No. 775,902.

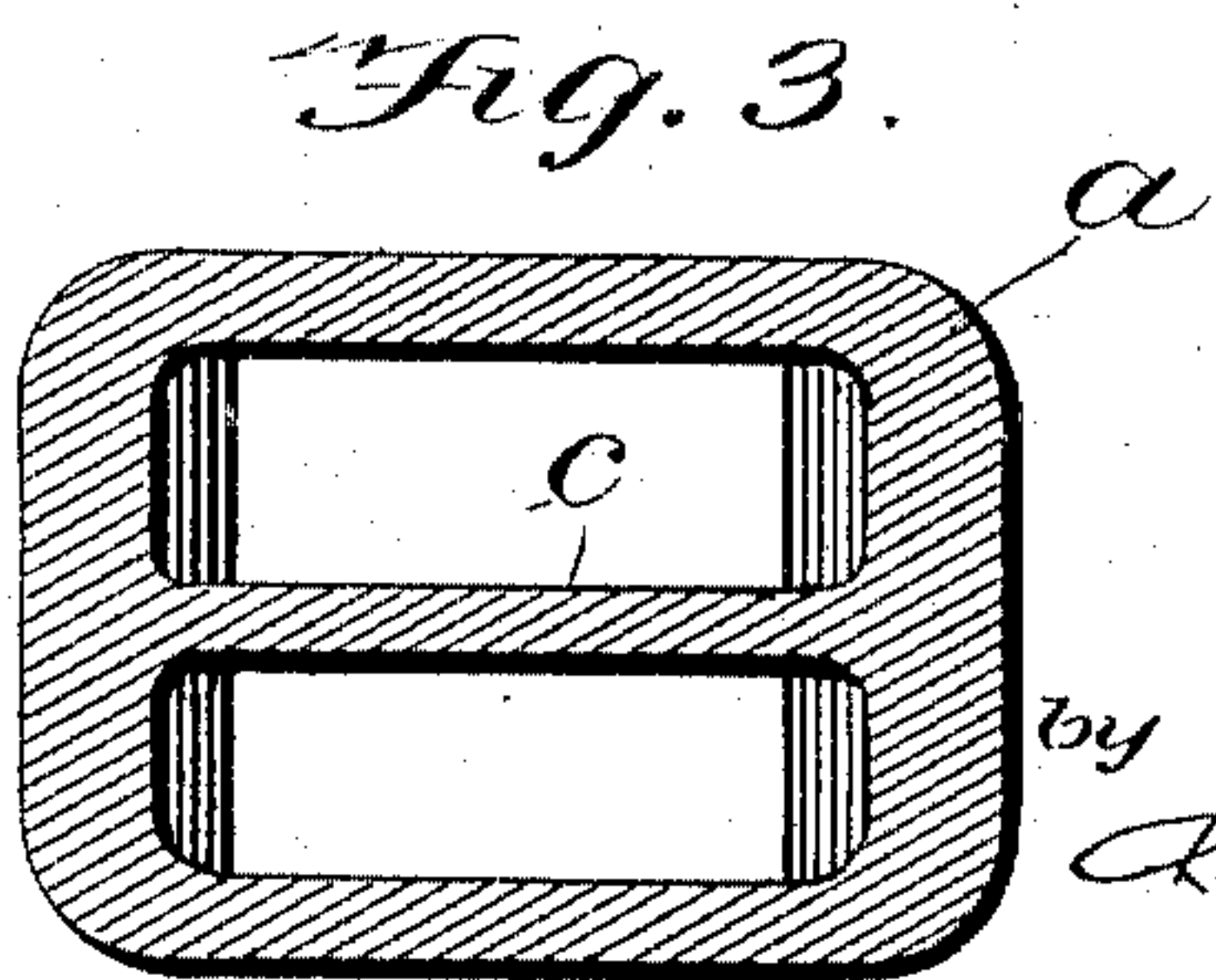
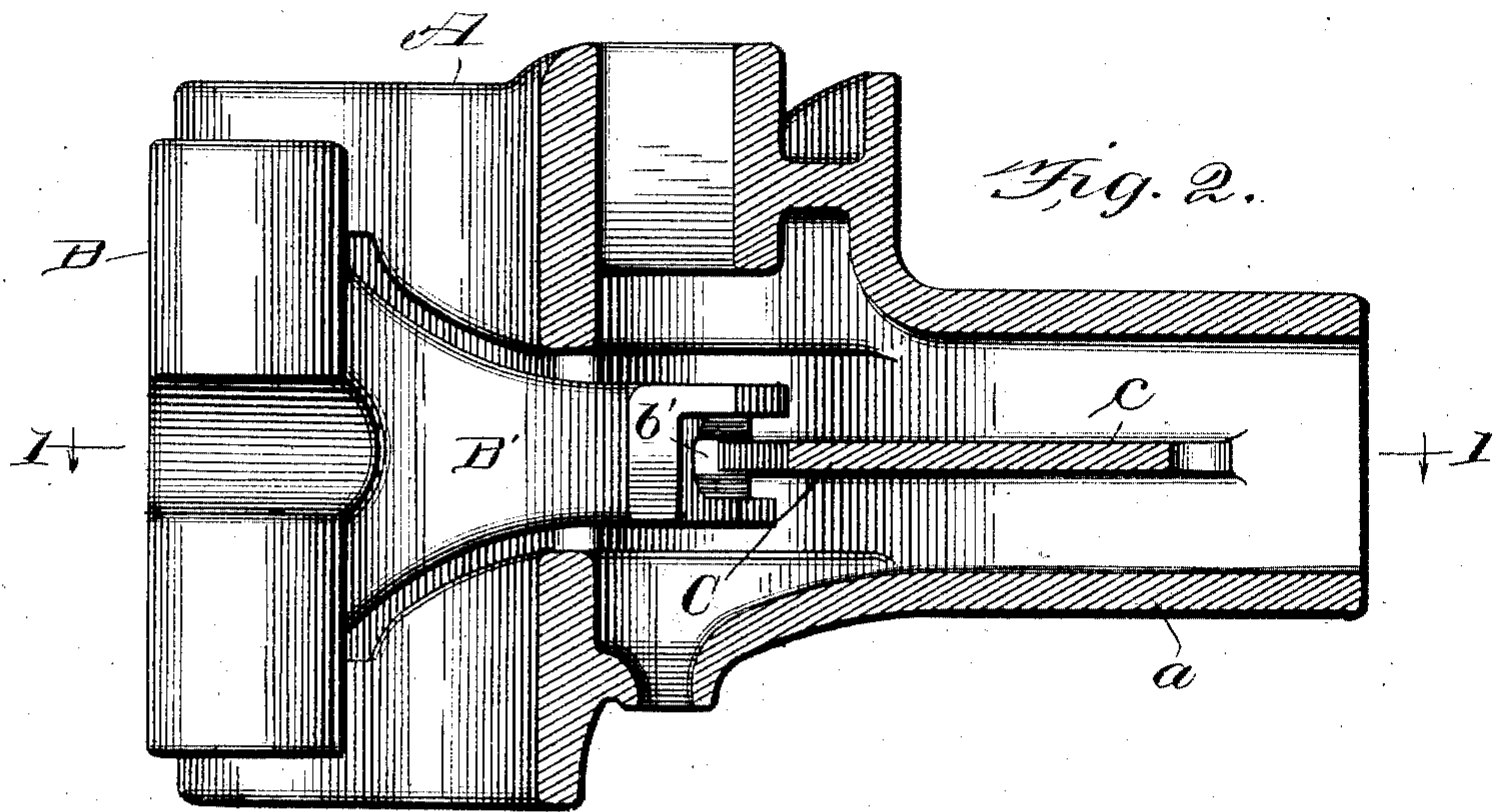
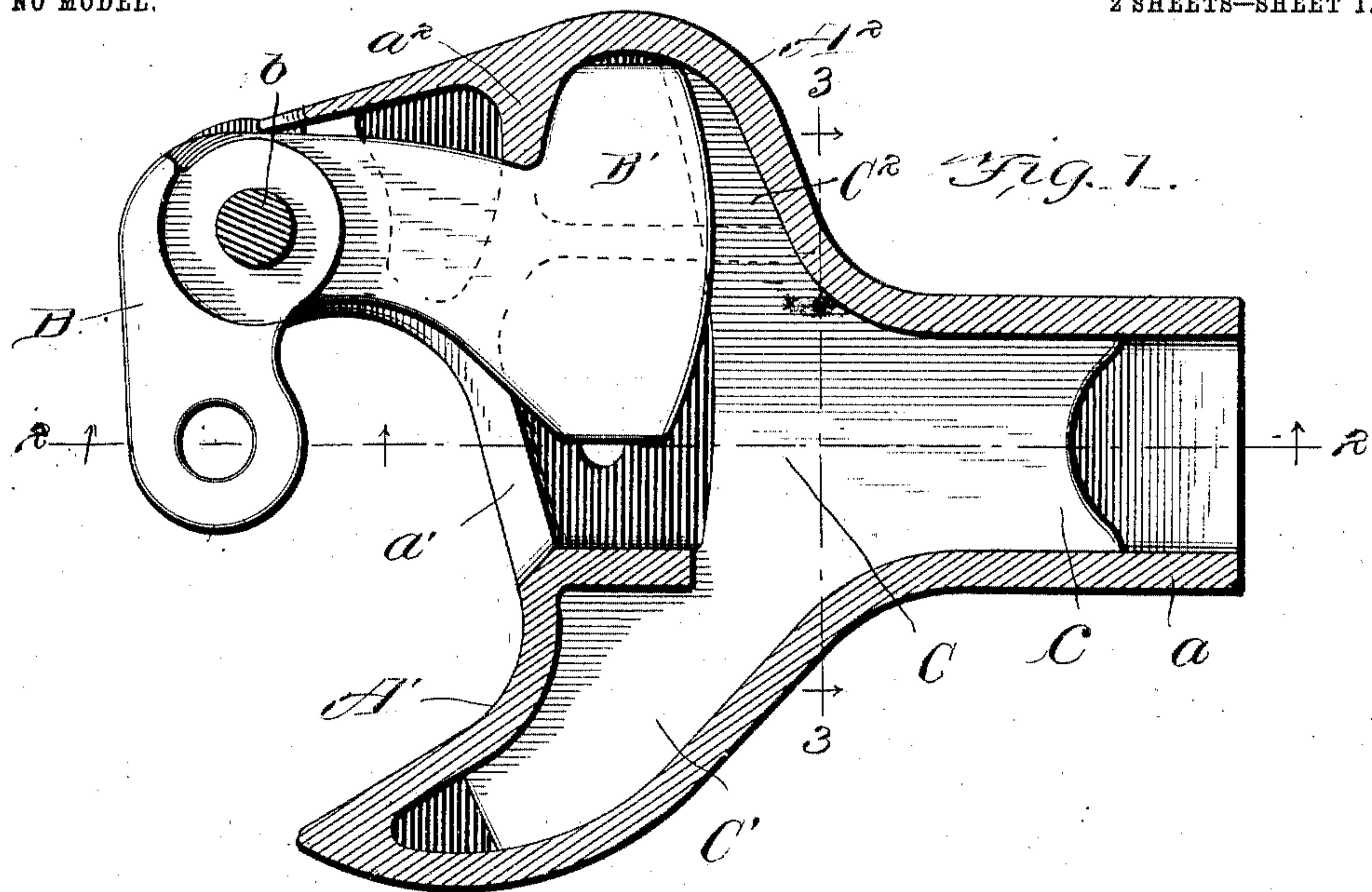
PATENTED NOV. 22, 1904.

P. HIEN.
CAR COUPLING.

APPLICATION FILED JUNE 15, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:
F. C. Barry.
C. C. Cunningham

Inventor
Phillip Hien
by
Lambert & Wilkinson
Attorneys.

No. 775,902.

PATENTED NOV. 22, 1904.

P. HIEN.
CAR COUPLING.

APPLICATION FILED JUNE 15, 1903.

NO MODEL.

2 SHEETS—SHEET 2.

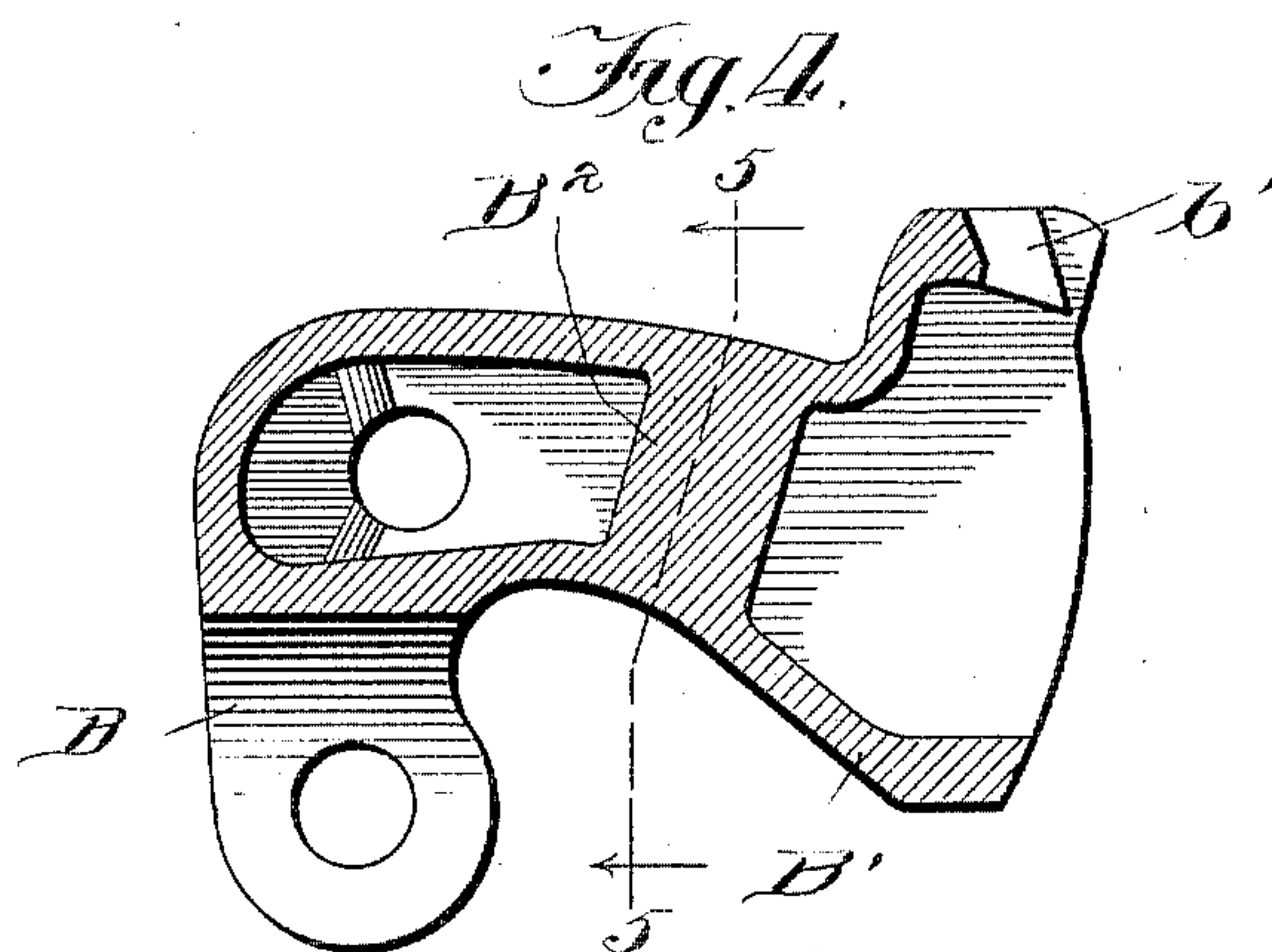


Fig. 5.

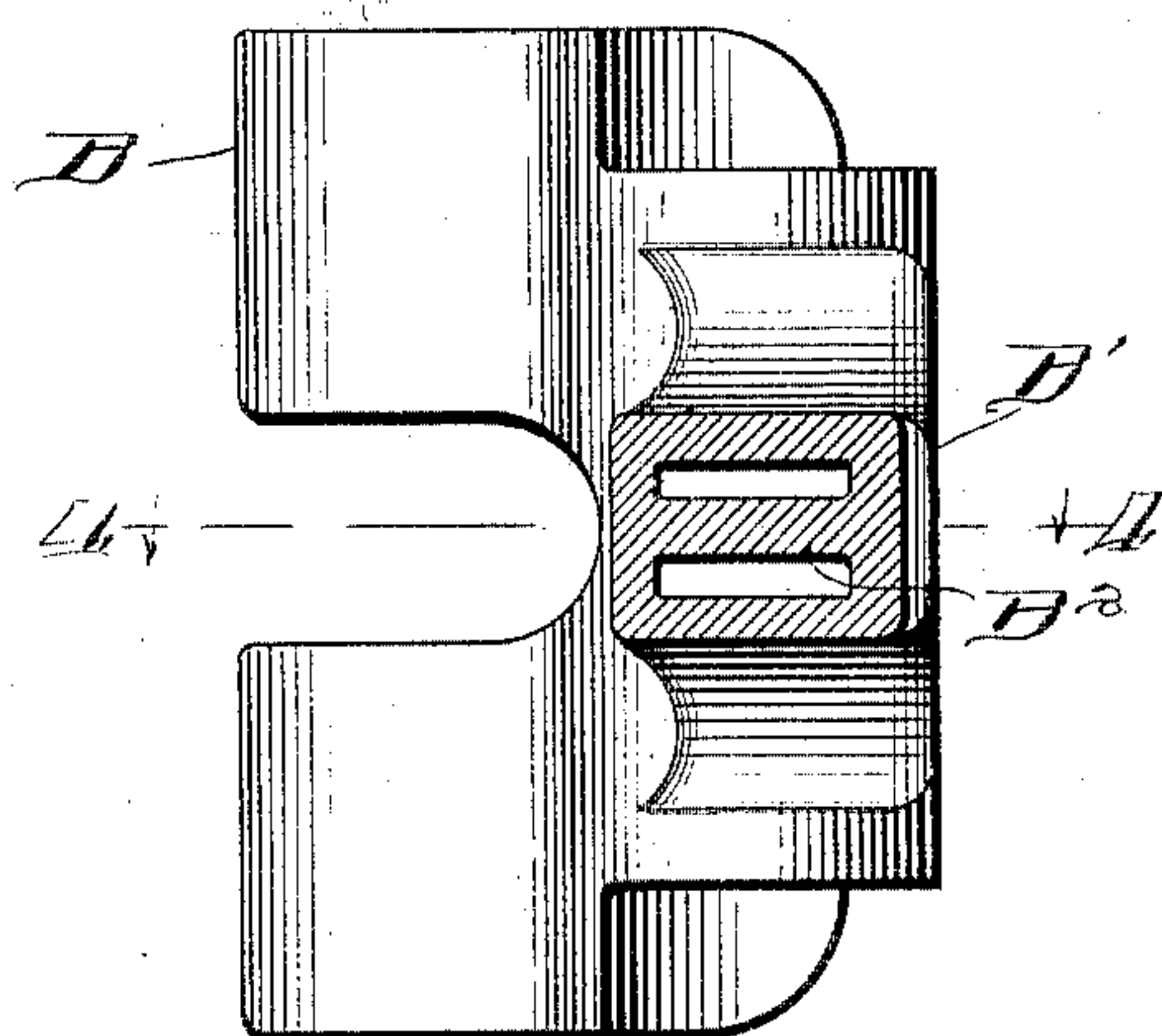
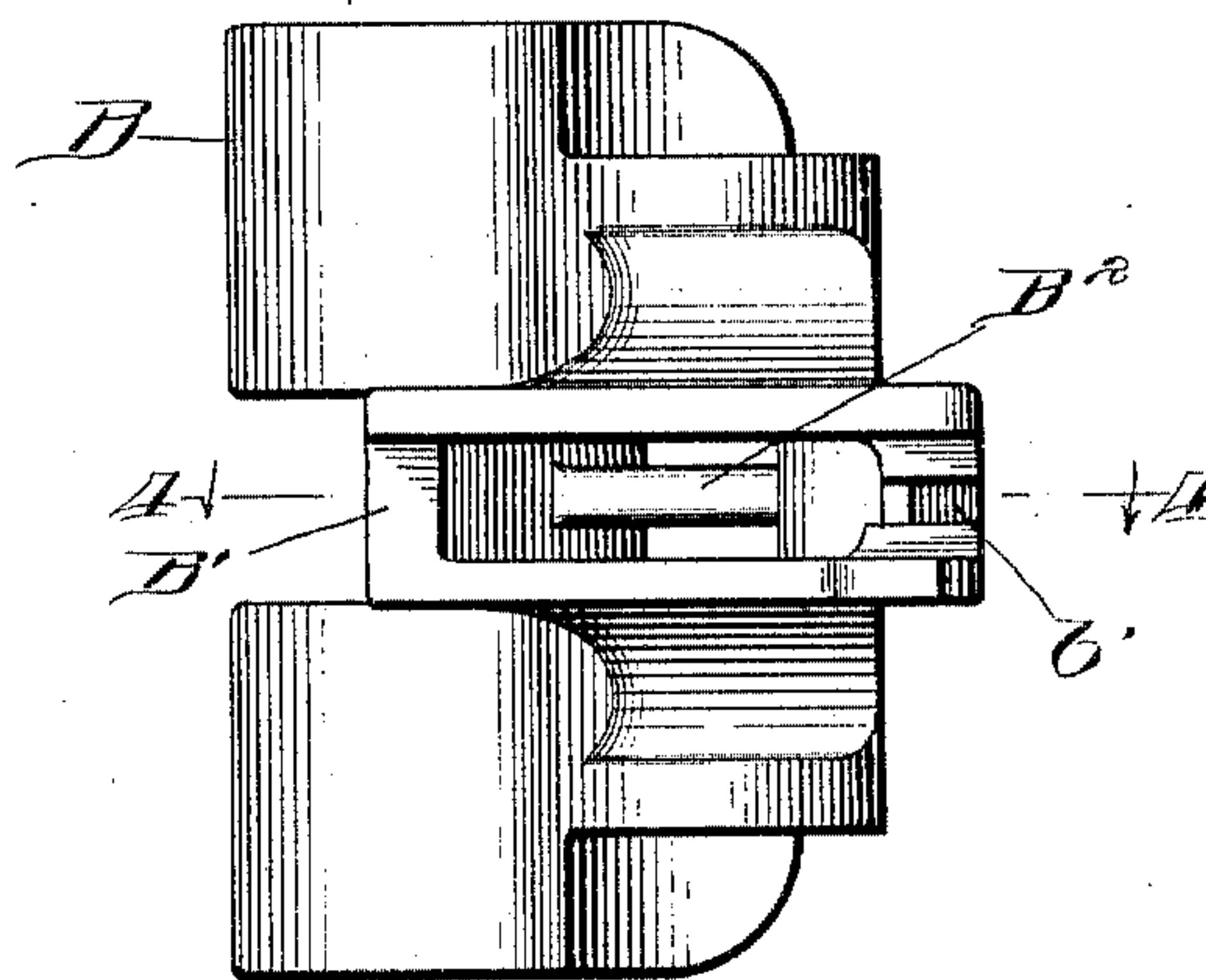


Fig. 6.



Witnesses:

H. S. Gaither
C. C. Cunningham

Inventor:

Phillip Hien
by Lamborn & Wilkison
Attorneys.

UNITED STATES PATENT OFFICE.

PHILLIP HIEN, OF CHICAGO, ILLINOIS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 775,902, dated November 22, 1904.

Application filed June 15, 1903. Serial No. 161,406. (No model.)

To all whom it may concern:

Be it known that I, PHILLIP HIEN, a citizen of the United States, residing at Chicago, county of Cook, State of Illinois, have invented a certain new and useful Improvement in Car-Couplers; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates in general to car-couplers, and more particularly to car-couplers of the Master Car-Builders' type.

In the manufacture of Master Car-Builders' car-couplers it is desirable to make the heads and shanks, as well as the knuckles, hollow, so as to decrease their weight and cost. The principal difficulty experienced in the manufacture of hollow couplers is that of rendering them sufficiently strong in structure to withstand the strain to which they are subjected in use. The greatest strain is exerted in a lateral direction, which occurs when two cars come together with the knuckles of the respective couplers in closed instead of open position, which results in the knuckle of one coupler striking the guard-arm on the coupler of the adjacent car. When cars come together on a curve, this lateral strain is greatest, as the guard-arm of one coupler receives the entire impact of the two cars coming together.

The primary object of my invention is to provide a car-coupler having a hollow head, shank, and knuckle which will possess the required structural strength and at the same time be light in weight and economical in manufacture.

My invention, generally described, consists in providing a horizontal web within the hollow coupler-head, extending transversely from the back wall to and between the walls of the guard-arm and also extending within the shank between the side walls thereof, such web being cast integrally with the coupler, thereby rigidly uniting the walls of the shank, of the back, and of the guard-arm, so as to prevent the walls of the shank adjacent to the

head buckling by strengthening the shank at such point and by reason of such web throwing the breaking strain toward the tail end of the coupler.

My invention further consists in providing a hollow knuckle for a car-coupler, the interior walls of the tailpiece thereof being rigidly united by an integral transverse web.

My invention will be more fully described hereinafter with reference to the accompanying drawings, in which the same is illustrated as embodied in a convenient and practical form, and in which—

Figure 1 is a horizontal sectional view taken on line 1 1, Fig. 2; Fig. 2, a vertical section taken on line 2 2, Fig. 1; Fig. 3, a transverse section taken on line 3 3, Fig. 1; Fig. 4, a horizontal section of the knuckle, taken on line 4 4, Figs. 5 and 6; Fig. 5, a transverse section taken on line 5 5, Fig. 4; and Fig. 6, an elevational view of the knuckle looking from the right in Fig. 4.

The same reference characters are used to designate the same parts in the several figures of the drawings.

Reference-letter A indicates generally the coupler-head, upon which the knuckle B is pivotally mounted, so as to swing in a horizontal plane.

b indicates a pivot-pin, by means of which the knuckle is secured to the coupler-head.

B' designates the tail of the knuckle, which extends when closed behind the rib a^2 , which projects inwardly from the back wall A^2 of the coupler-head. The knuckle is retained in closed position by any suitable locking mechanism, which, however, is not shown, as it forms no part of my present invention.

A' indicates the guard-arm, which retains the knuckles on the cooperating couplers in locked engagement. The guard-arm, as well as the shank of the coupler A, is formed hollow to decrease the weight and minimize the cost of the coupler.

It has been found in practice that a hollow coupler, while desirable in that it reduces the weight and cost thereof, does not possess the structural strength necessary to resist the strain incident to the coupling of cars in making up trains. Owing to the engagement of

the knuckle with the guard-arm and to the engagement of the tailpiece with the back wall on one side and with the locking-pin on the other side, the greatest strain to which the coupler-head is subjected is in a horizontal or lateral direction, and hence it has been found necessary in practice to impart greater lateral strength to the hollow coupler-head. I therefore provide a horizontal web, a portion, C', of which extends between the walls of the guard-arm, while another portion, C², extends to the back wall A², while another portion, c, of the web projects within the hollow shank *a* and is rigidly united to the side walls thereof. The web C is preferably formed integrally with the hollow coupler-head, which may be readily done by the use of cores when the coupler is cast.

In order that the web may extend forwardly a sufficient distance to impart the requisite strength to the coupler, the tailpiece B' of the knuckle is provided with a horizontal groove *b'*, which receives the front edge of the web when the knuckle swings from its open to its closed positions, or vice versa. By the provision of the groove *b'* in the tail of the knuckle the web may be extended forwardly into the path of movement of the tail of the knuckle.

My improved form of knuckle is shown in detail in Figs. 4, 5, and 6, in which B² designates a transverse web extending between and preferably formed integrally with the side walls of the tailpiece. This web may be of a thickness and width sufficient to impart to the tailpiece the requisite strength, thereby rendering it possible to construct the knuckle hollow and reduce its weight and cost without impairing its strength.

From the foregoing description it will be observed that I have invented an improved hollow car-coupler which possesses the advantages of being light in weight and economical in cost and at the same time possesses the lateral structural strength necessary to with-

stand the strain to which the coupler is subjected in its use. It will also be observed that I have invented an improved car-coupler knuckle which requires a minimum amount of metal in its manufacture and at the same time possesses the structural strength necessary to insure it against breakage.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a car-coupler having a hollow head and comprising a guard-arm and back wall, of a transverse web extending between the back wall and guard-arm and integrally united thereto.

2. The combination with a car-coupler comprising a hollow guard-arm, of a web extending between and rigidly uniting the walls of said hollow guard-arm.

3. The combination with a car-coupler comprising a back wall, a hollow guard-arm, a hollow shank, of a transverse web cast integrally with the coupler-head uniting the walls of the guard-arm and extending to and united with the back wall and also extending between the side walls of the hollow shank.

4. As an article of manufacture, a car-coupler knuckle comprising a hollow tailpiece the interior walls of which are united by an integral transverse web.

5. In a car-coupler, the combination with a hollow coupler-head, of a transverse web rigidly uniting the interior walls of the head, a knuckle pivotally mounted in the coupler-head and having a hollow tailpiece, and a transverse web rigidly uniting the interior walls of the knuckle-tailpiece.

In testimony whereof I sign this specification in the presence of two witnesses.

PHILLIP HIEN.

Witnesses:

GEO. L. WILKINSON,
C. C. CUNNINGHAM.