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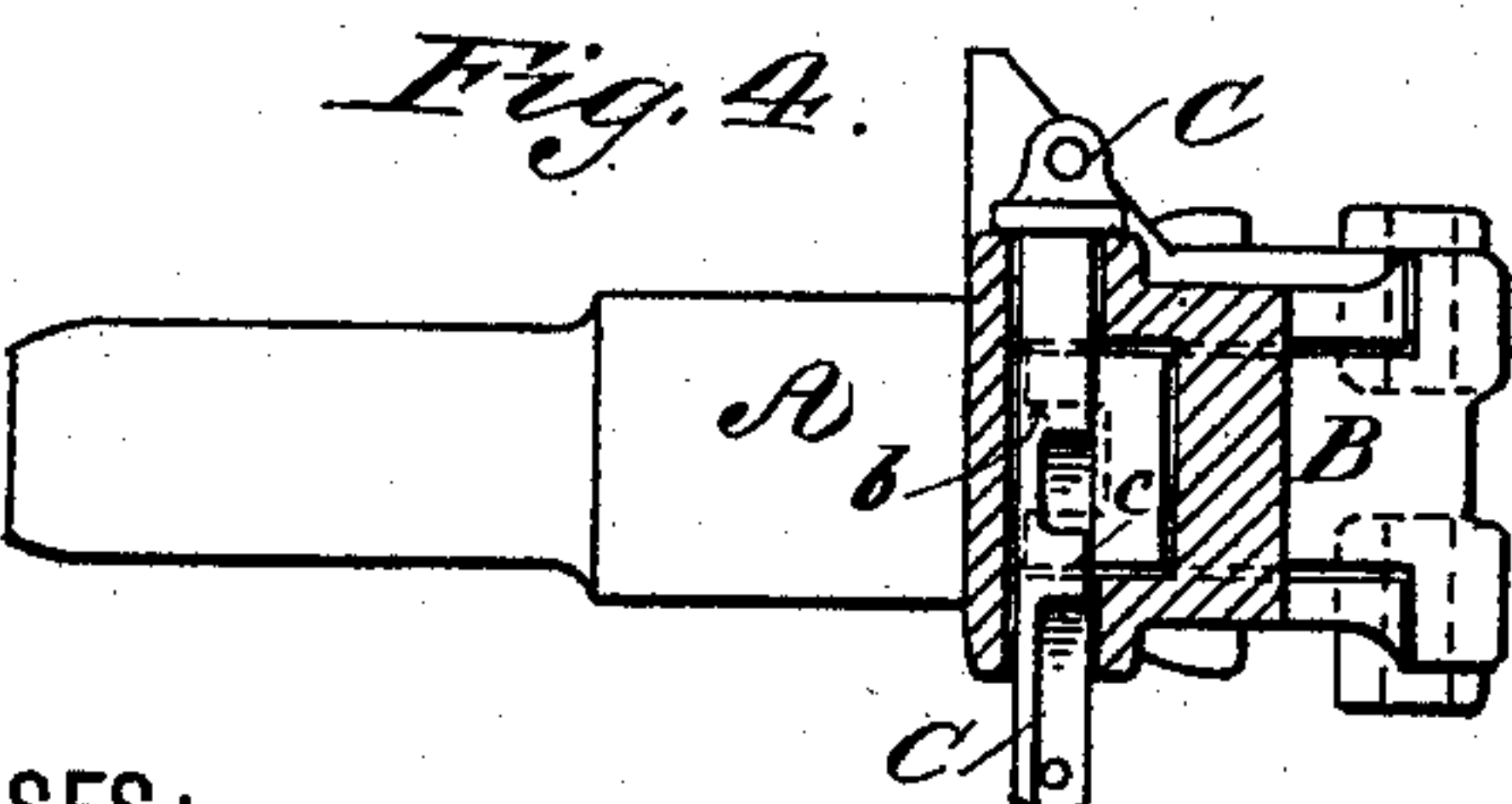
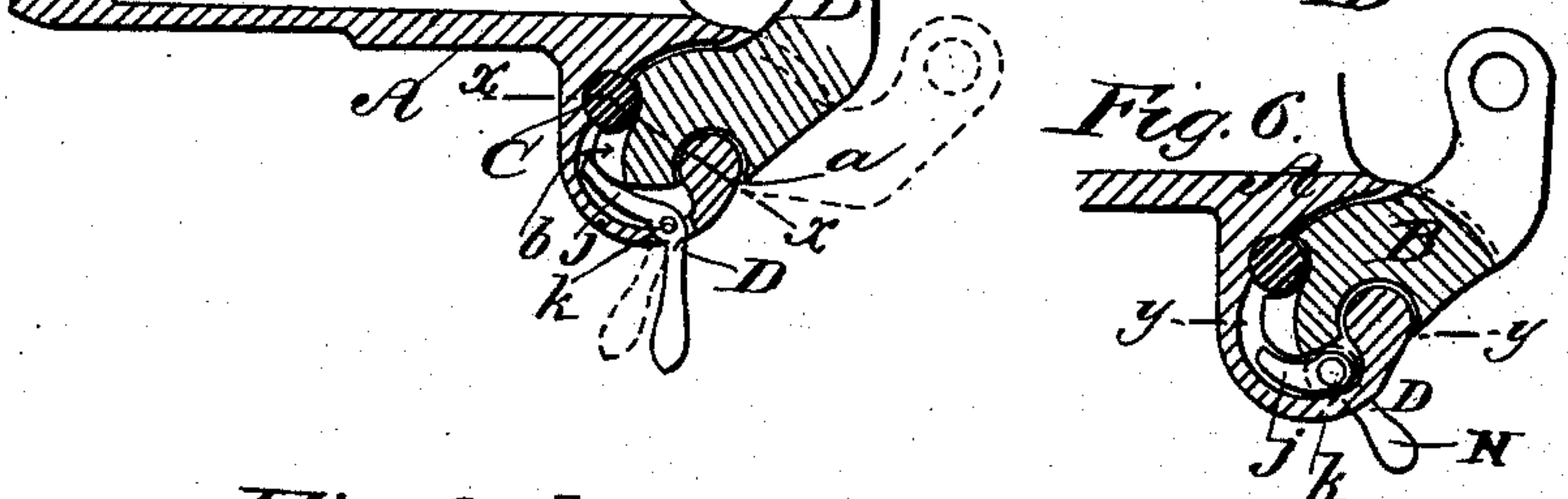
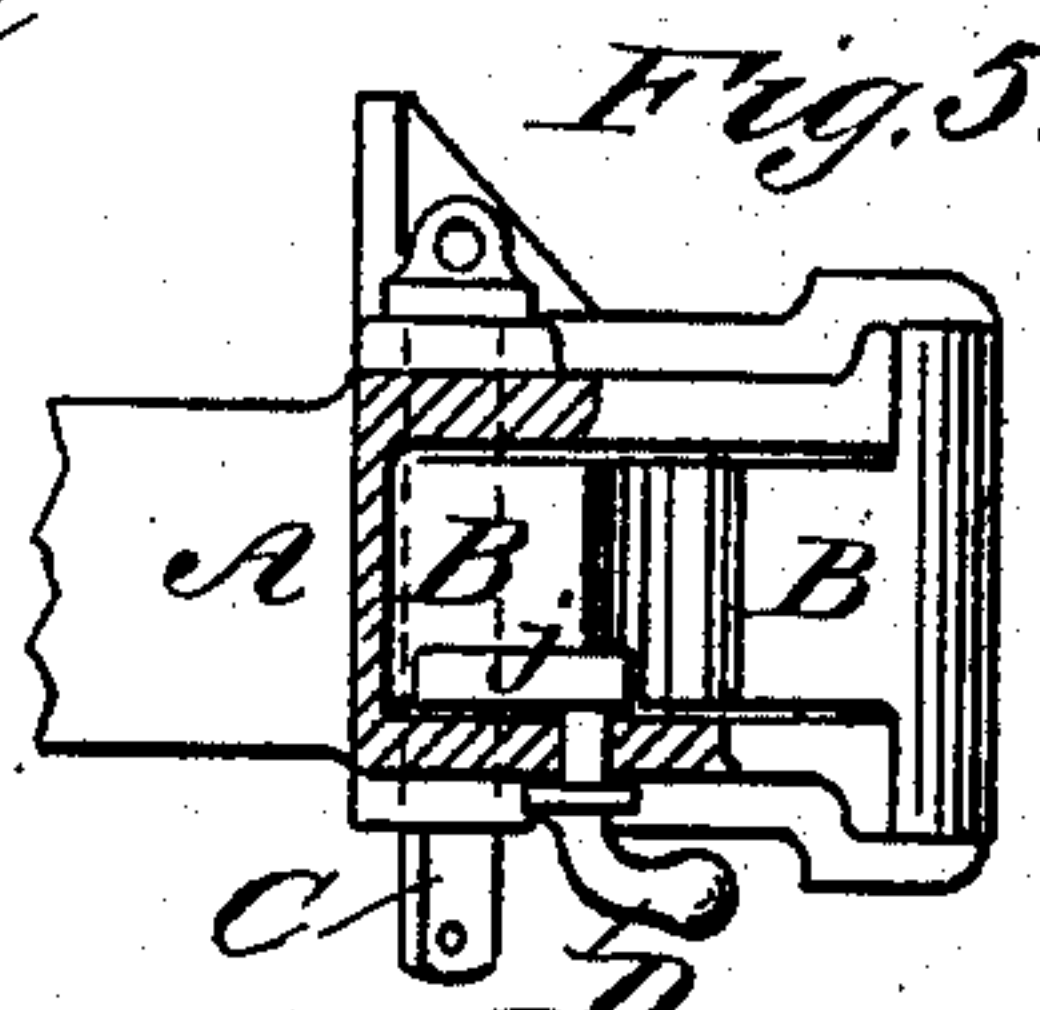
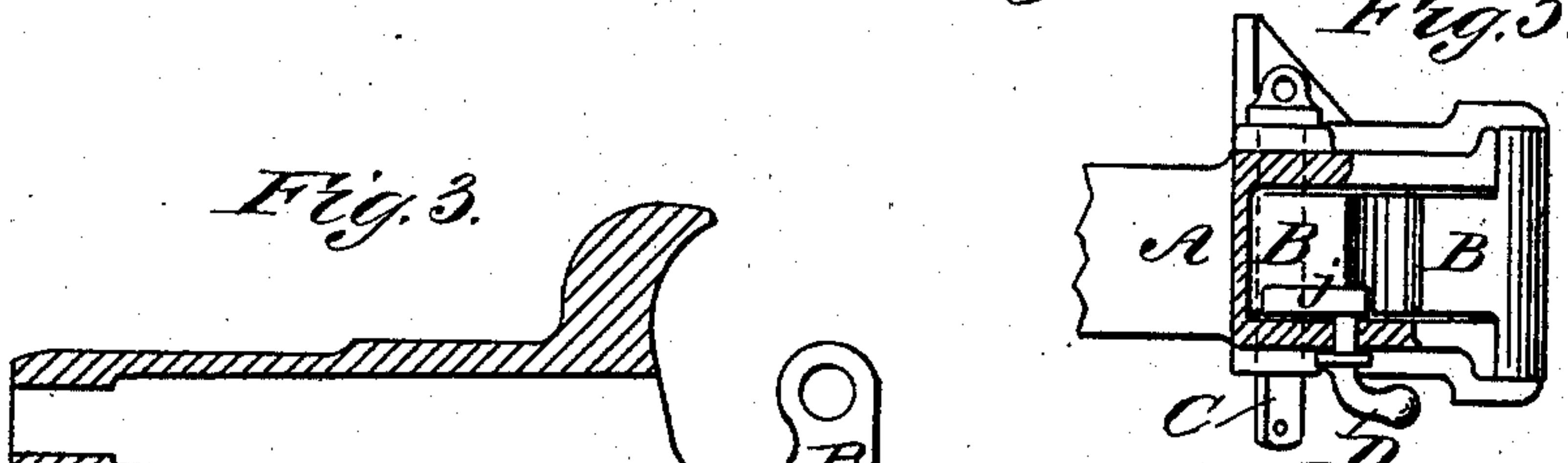
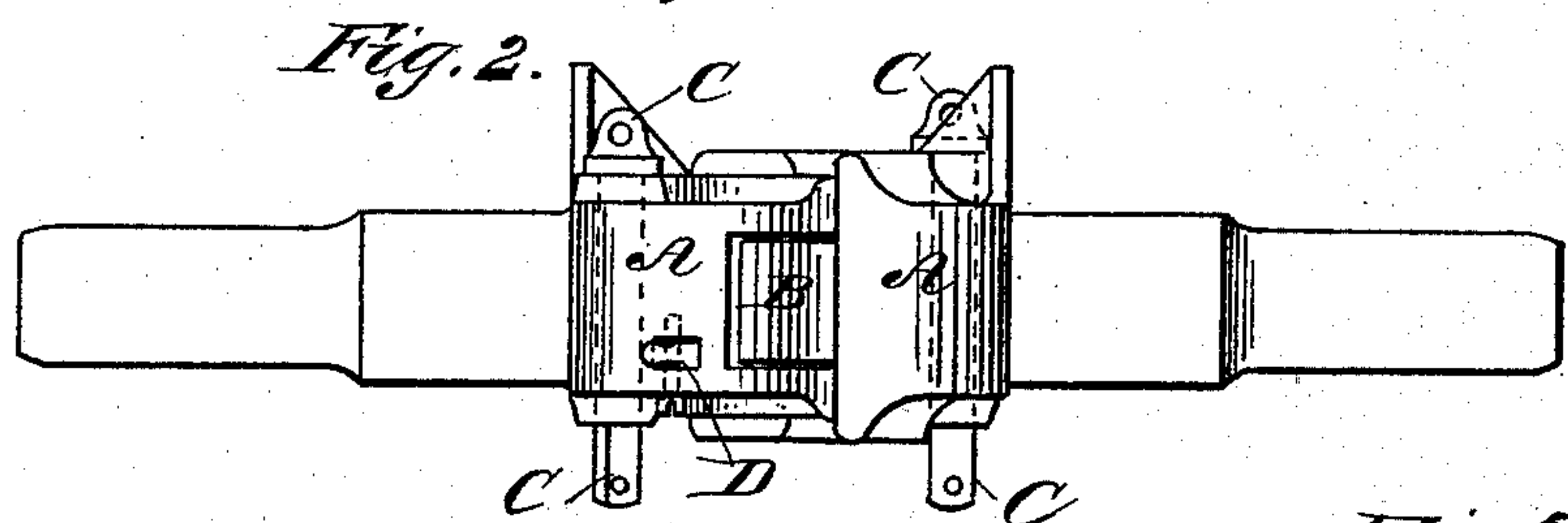
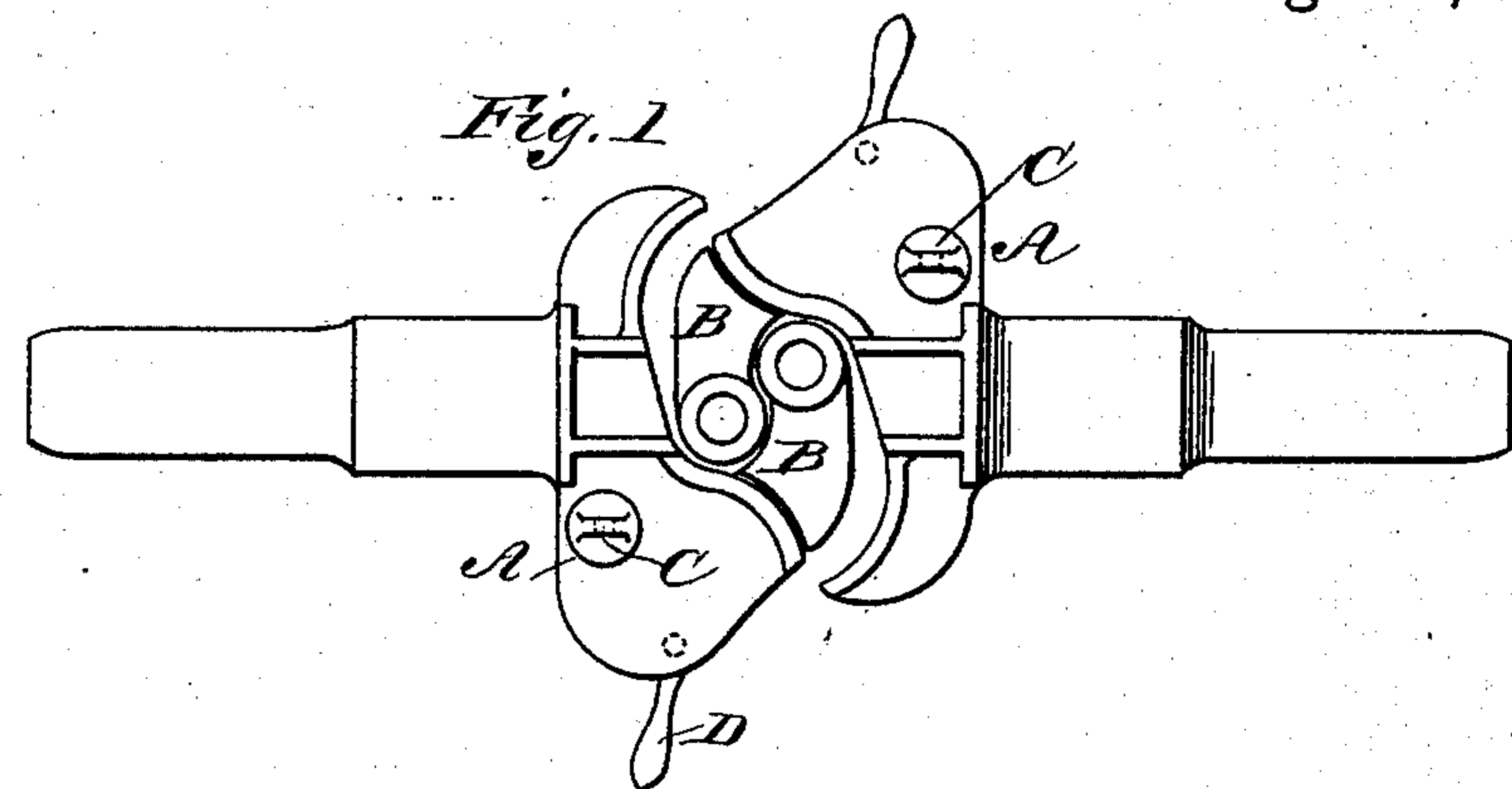
3 Sheets—Sheet 1.

H. H. BURDEN.

CAR COUPLING.

No. 388,396.

Patented Aug. 28, 1888.



WITNESSES:
O. H. Tarrigan Jr.
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INVENTOR.
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BY
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(No Model.)

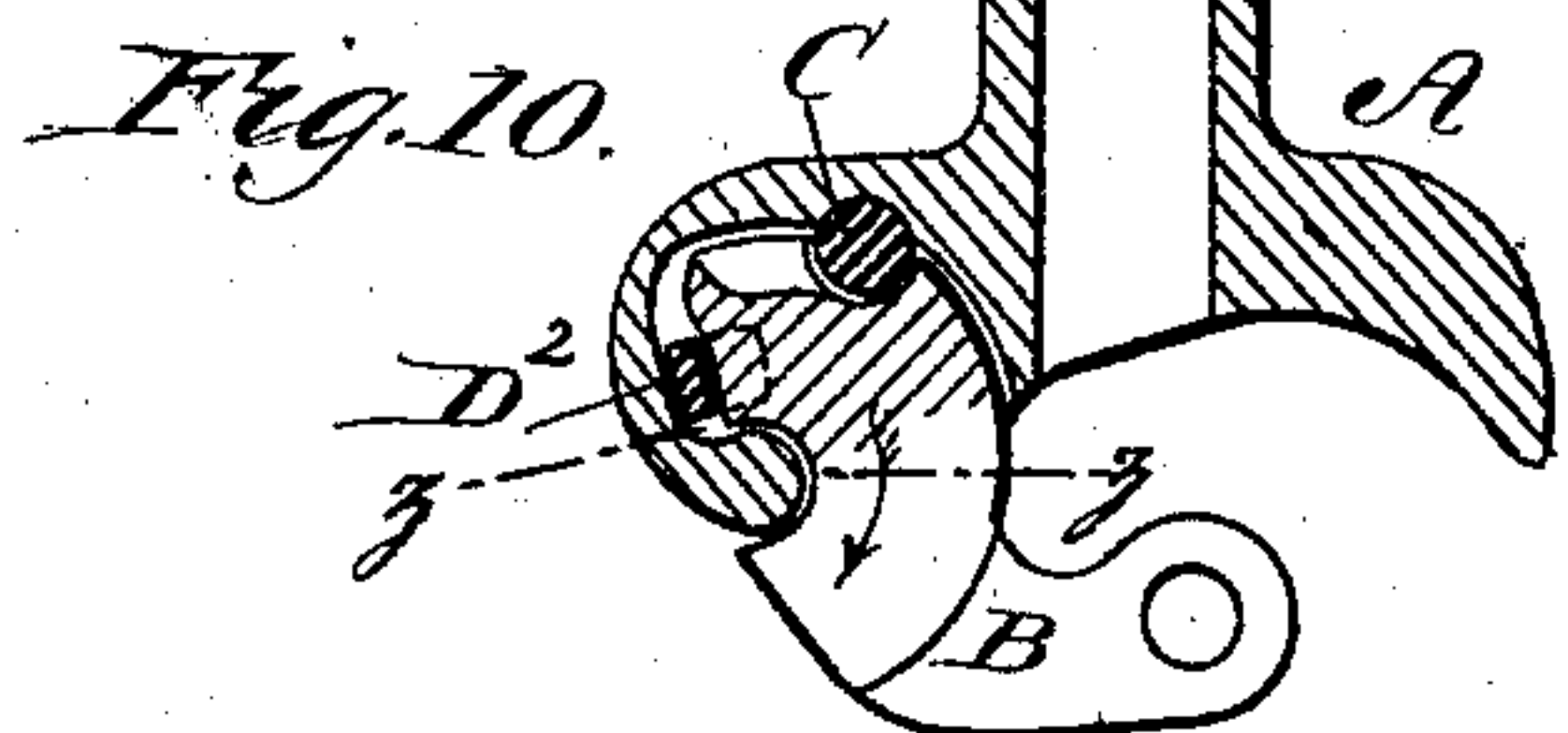
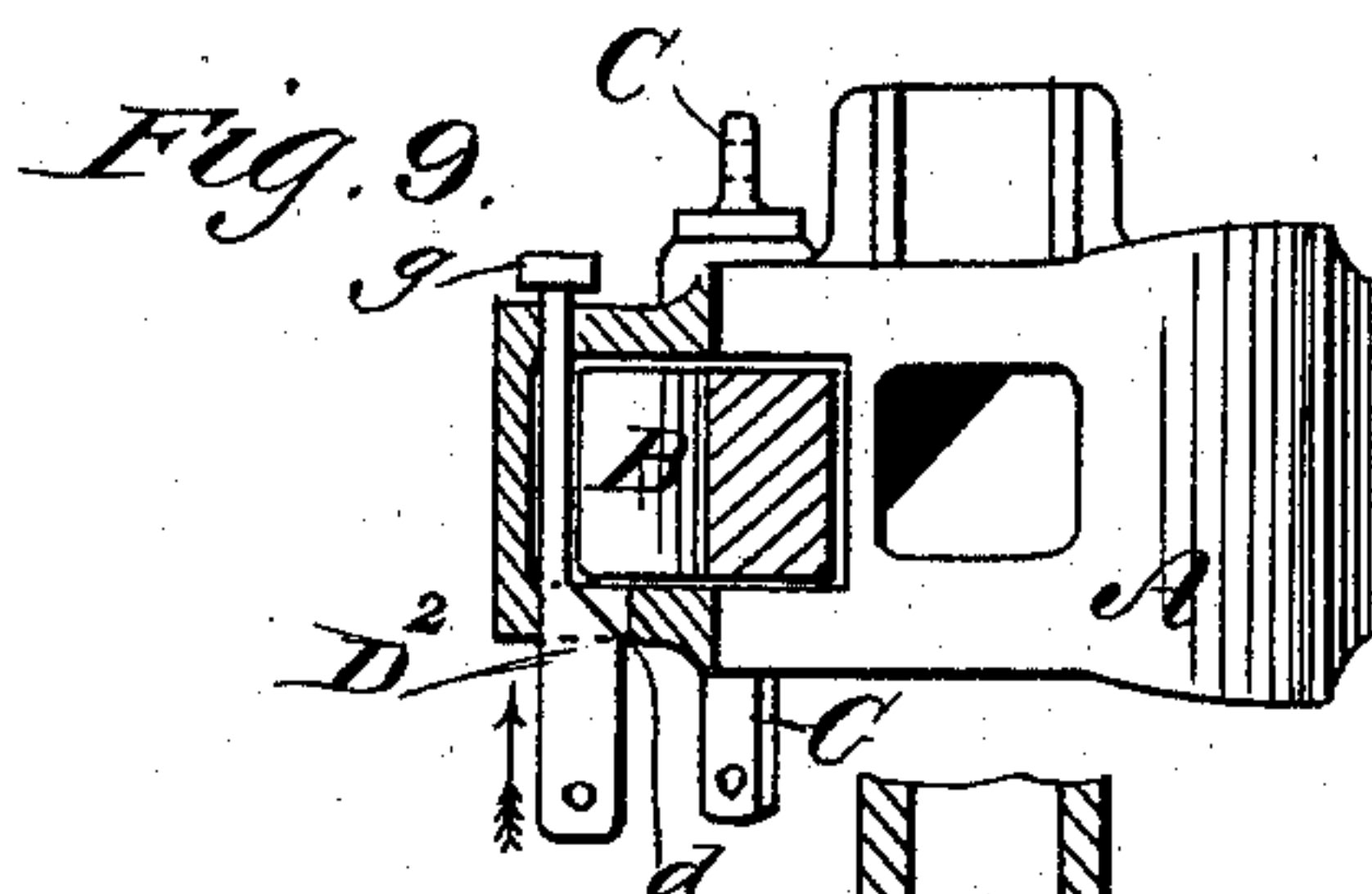
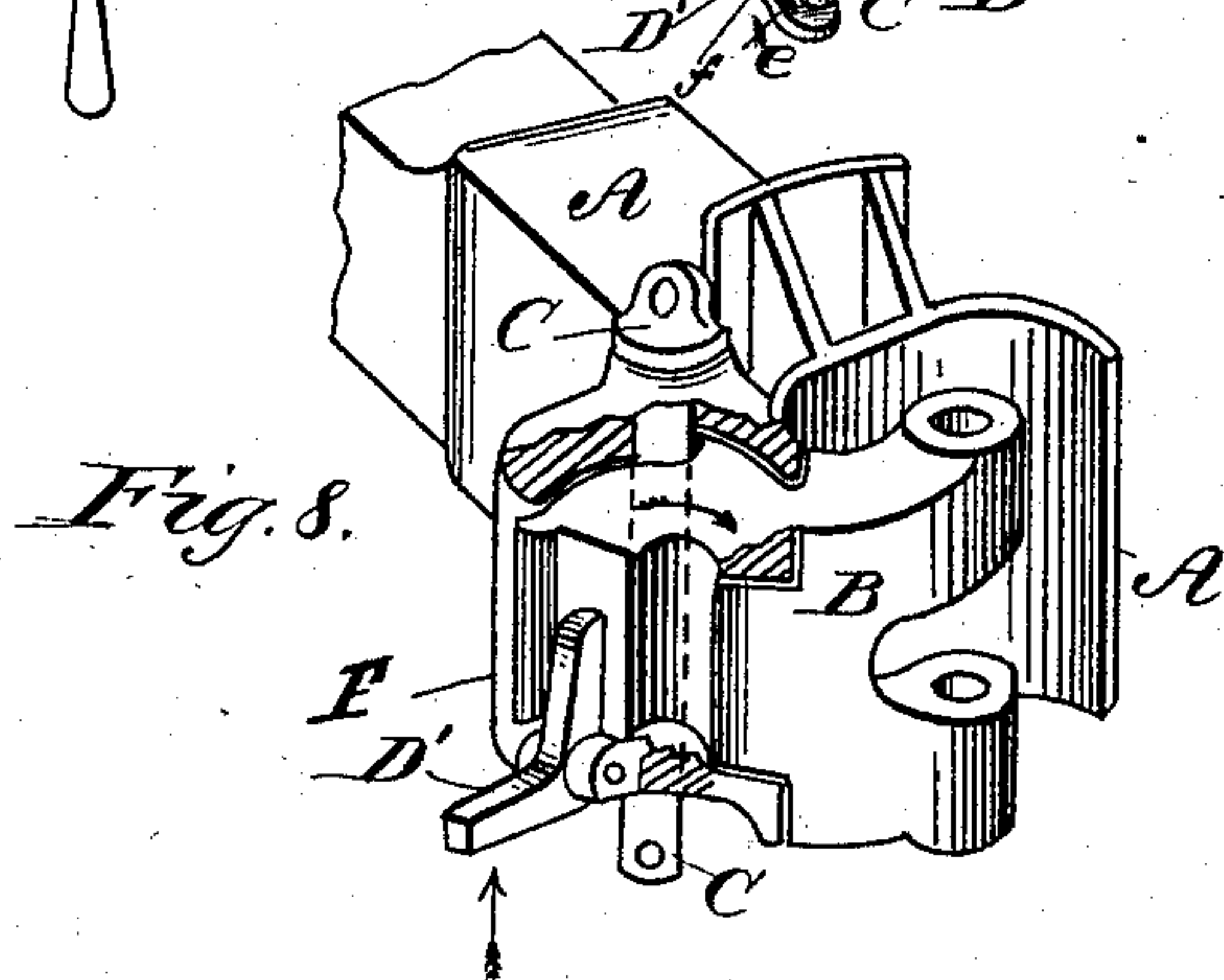
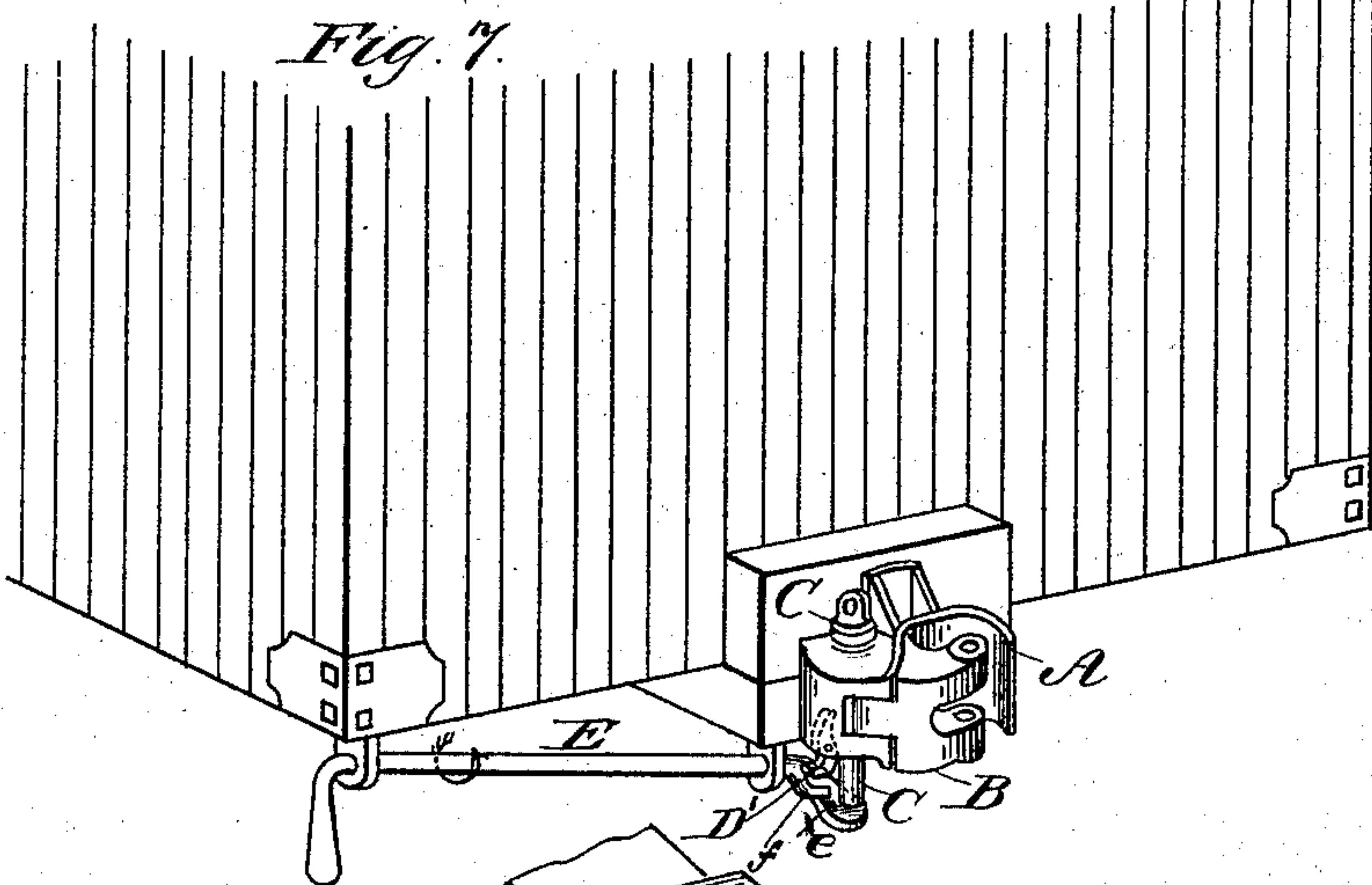
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CAR COUPLING.

No. 388,396.

Patented Aug. 28, 1888.



WITNESSES:

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(No Model.)

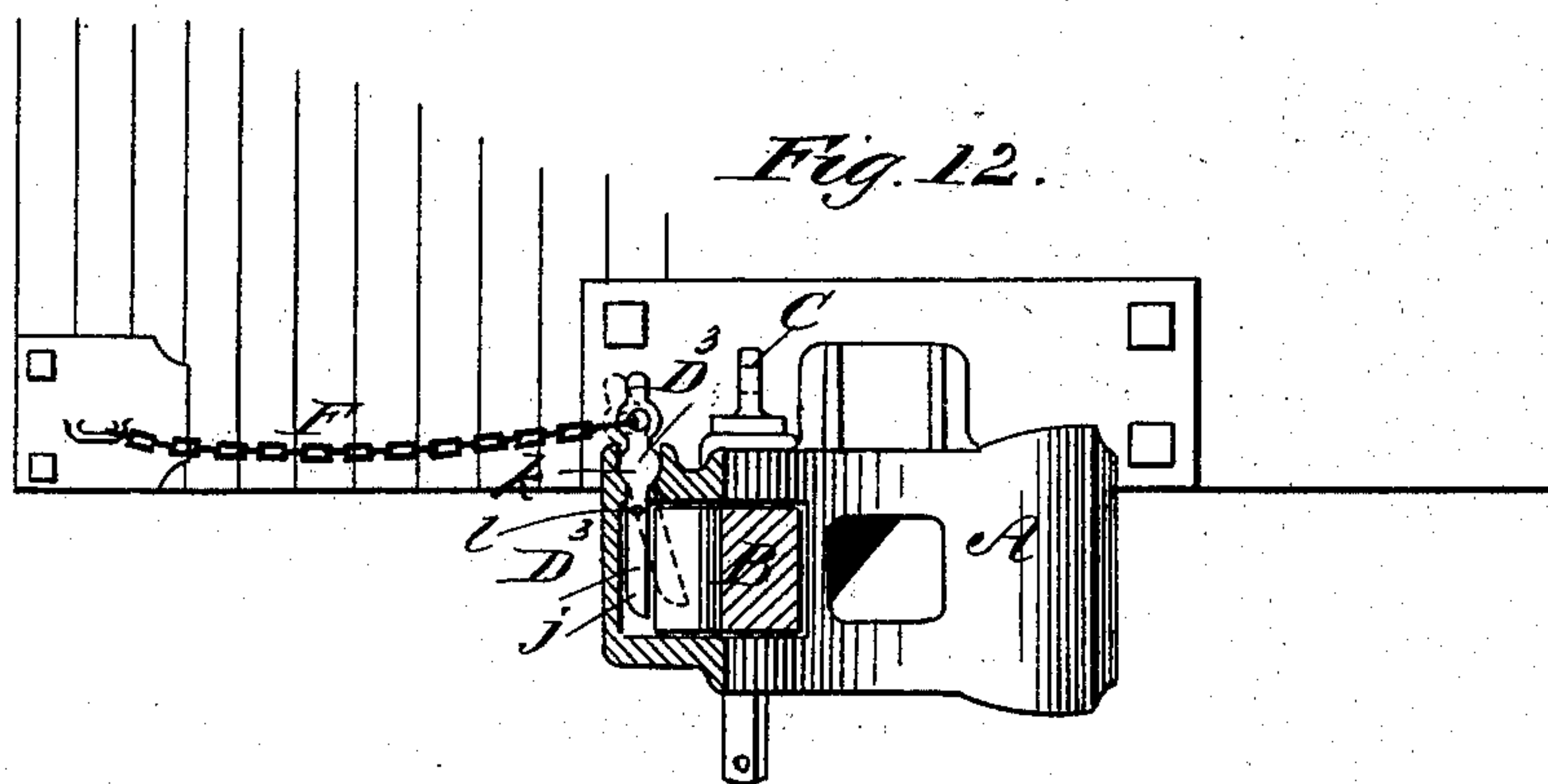
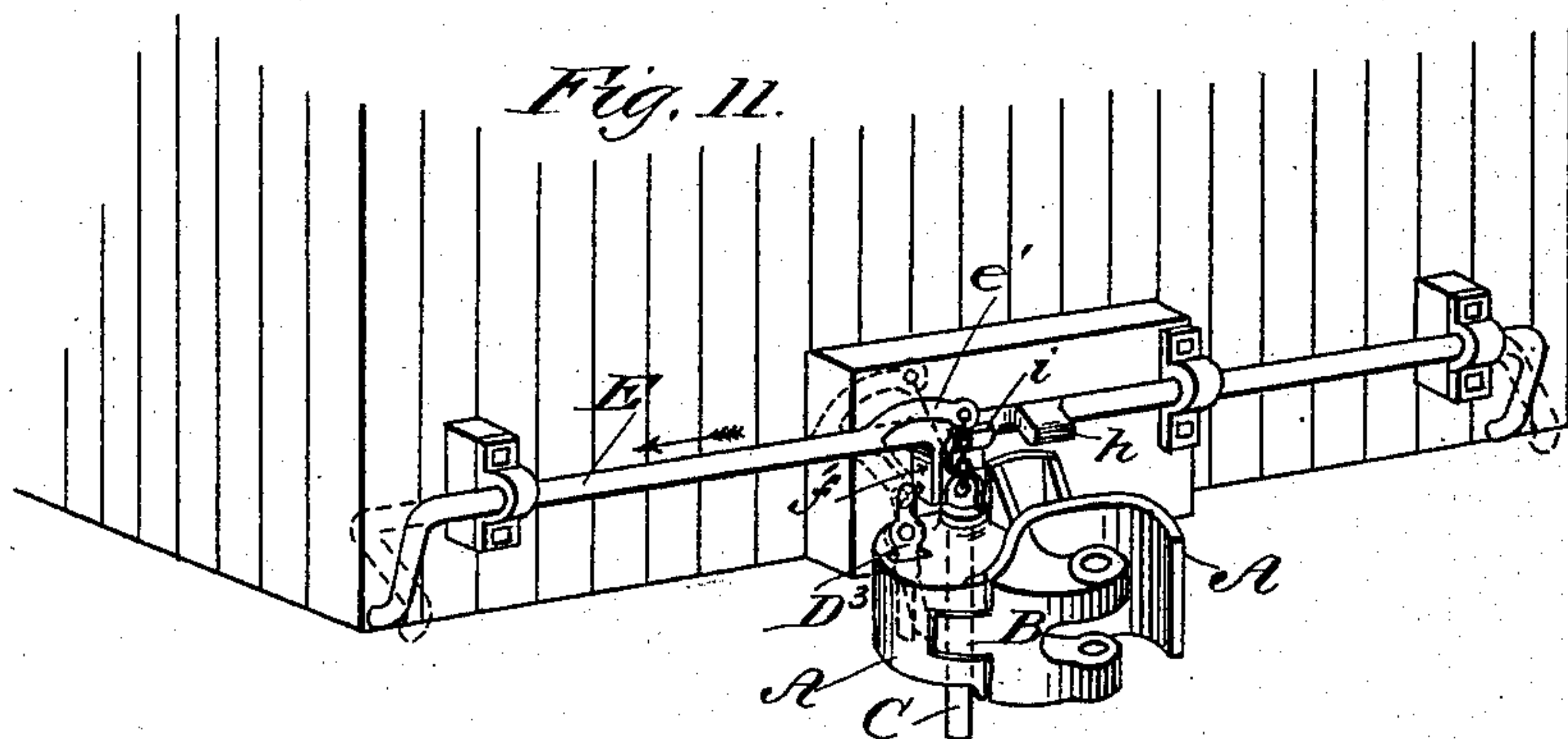
3 Sheets—Sheet 3.

H. H. BURDEN.

CAR COUPLING.

No. 388,396.

Patented Aug. 28, 1888.



WITNESSES:

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HOWARD H. BURDEN, OF TROY, NEW YORK.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 388,396, dated August 28, 1888.

Application filed February 15, 1888. Serial No. 264,127. (No model.)

To all whom it may concern:

Be it known that I, HOWARD H. BURDEN, a citizen of the United States, residing in the city of Troy, county of Rensselaer, and State of New York, have invented a certain new and useful Improvement in Car-Couplings, of which the following is a specification.

My invention is particularly applicable to car-couplings known as "self-coupling," and is illustrated in several forms by the accompanying drawings.

Similar letters throughout the several views designate similar parts.

Figure 1 is a plan view of two couplers united, and Fig. 2 is a side elevation of the same. Fig. 3 represents a horizontal central section through the draw-bar frame and knuckle of one of the improved couplers; and Fig. 4 is a side elevation of the same, partly in section, on the line X X, Fig. 3. Fig. 5 is a similar view, the buffer or frame being broken away between the points *y y*, Fig. 6. Fig. 6 is a horizontal section of a portion of the improved coupler. Fig. 7 is a perspective view of a car furnished with the improved coupler, showing one means of operating the same. Fig. 8 is an enlarged perspective view of the coupler, partially broken away to show the knuckle and another method for its operation. Fig. 9 is an end view, partly in section, through the line *z z*, Fig. 10, showing another form of my improved coupler; and Fig. 10 is a horizontal central section of the same. Fig. 11 is a perspective view of a car furnished with my improved coupler, the knuckle of which is operated by a shaft differing from that shown in Fig. 7. Fig. 12 is an end view of the same operated by means of a chain.

The coupler now in most general use consists of a draw-bar, A, to the frame of which is locked or pinned a movable knuckle, B, by means of a pin, C. To open the coupling, or rather to enable the operator or brakeman to move or draw out the knuckle and thus uncouple the cars, the pin C must be lifted with one hand and the knuckle swung out either with the other hand or else by means of the force exerted by the pulling apart of the cars. If the knuckle is, however, shut when the cars are coming together, it must be thrown open by the employé stepping between the cars for that purpose or reaching down from the plat-

form. This is an operation as hazardous almost as that attendant upon the ordinary link-and-pin coupling, and innumerable and serious accidents naturally result unless great care is exercised.

My improvement consists in arranging a lever or other equivalent mechanism so that it shall operate to open the knuckle, and I prefer to operate in so doing upon the shoulder of the knuckle B the instant the locking-pin G is lifted, and the knuckle thus freed to swing open. It is obvious that such a lever, latch, or other operating mechanism may be placed in and attached to any portion of the frame of the draw-bar, and a few of these positions are shown in the accompanying drawings. It will be observed, however, that the levers, latches, or other operating mechanism in the different position shown must be shaped in such a manner as to allow of the performance of their functions, and the force which is to be applied thereto must be exerted in directions compatible with the nature of the operating devices. In Figs. 1, 2, and 3, for instance, the lever or latch D is one of the first class and is placed upon the side of the knuckle. The force is applied in a direction toward the draw-bar, and the end J presses upon the shoulder of the knuckle *b* and throws the knuckle open.

In Figs. 5 and 6 the operating mechanism consists of a crank, D, attached to the under portion of the frame F and formed with a handle, N, shaft *e*, and a projecting arm, J, which operates upon the shoulder of the knuckle. Force exerted upon the handle N of the crank D toward the draw-bar presses the projecting arm J against the knuckle-shoulder and swings the knuckle open.

Fig. 8 shows another modification of the operating mechanism, consisting of a lever of the first class, D', which is attached to the under portion of the draw-bar frame F. Pressure upward upon one end of the lever pushes against the shoulder and throws the knuckle open.

Fig. 7 shows a method of operating both the locking-pin C and the unlocking mechanism D'. It consists of a shaft, E, arranged so as to be actuated at the side of the car, and so regulated that when moved in the direction shown in the figure the coupling is first unlocked, and at the instant the locking-pin is moved

to the requisite height to enable the knuckle B to open the knuckle is thrown open.

In Figs. 9 and 10 a wedge-shaped pin, *g* D², is shown acting as the equivalent of a lever. This pin pierces the frame F and is formed with a lug, D². By pushing the pin upward the knuckle is thrown open, the lug operating upon the shoulder of the knuckle.

Fig. 11 shows another method of operating both locking-pin and unlocking mechanism. The pin D³ is attached to the upper portion of the frame F, and is connected to the shaft E by the projection *f*. The pin C is also attached to the same shaft by means of the projecting arm *e'*. When the shaft E is operated, the locking-pin C is raised until the knuckle is unlocked. Then the operating-pin D³ is drawn back toward the draw-bar A and the knuckle is thrown open.

Fig. 12 shows another method of unlocking the knuckle, the force being communicated through the chain F.

It is obvious that any of the forms shown may either directly or by supplemental mechanism be operated by an employé without standing between the cars.

As there are numerous well-known forms of

lever which could be readily substituted for accomplishing the same result, I do not wish to limit myself to the specific devices shown 30 in the accompanying drawings; but

What I desire to claim and secure by Letters Patent is—

1. In a car-coupling, the combination, with a frame and movable knuckle, of a lever or its 35 equivalent arranged to operate upon the knuckle to throw it open, substantially as and for the purposes set forth.

2. In a car-coupling, the combination of a frame, movable knuckle, and locking-pin, with 40 a lever or its equivalent arranged to operate upon the knuckle to throw it open, as and for the purposes set forth.

3. In a car-coupling, the combination, with a frame, movable knuckle, and locking-pin, of 45 a lever or its equivalent arranged to operate upon the knuckle to throw it open, and a device arranged to operate both locking-pin and lever, as and for the purposes set forth.

Dated Troy, New York, February 11, 1888. 50
HOWD. H. BURDEN.

In presence of—

SEYMOUR VAN SANTVOORD,
WM. H. H. SAUNDERS.