

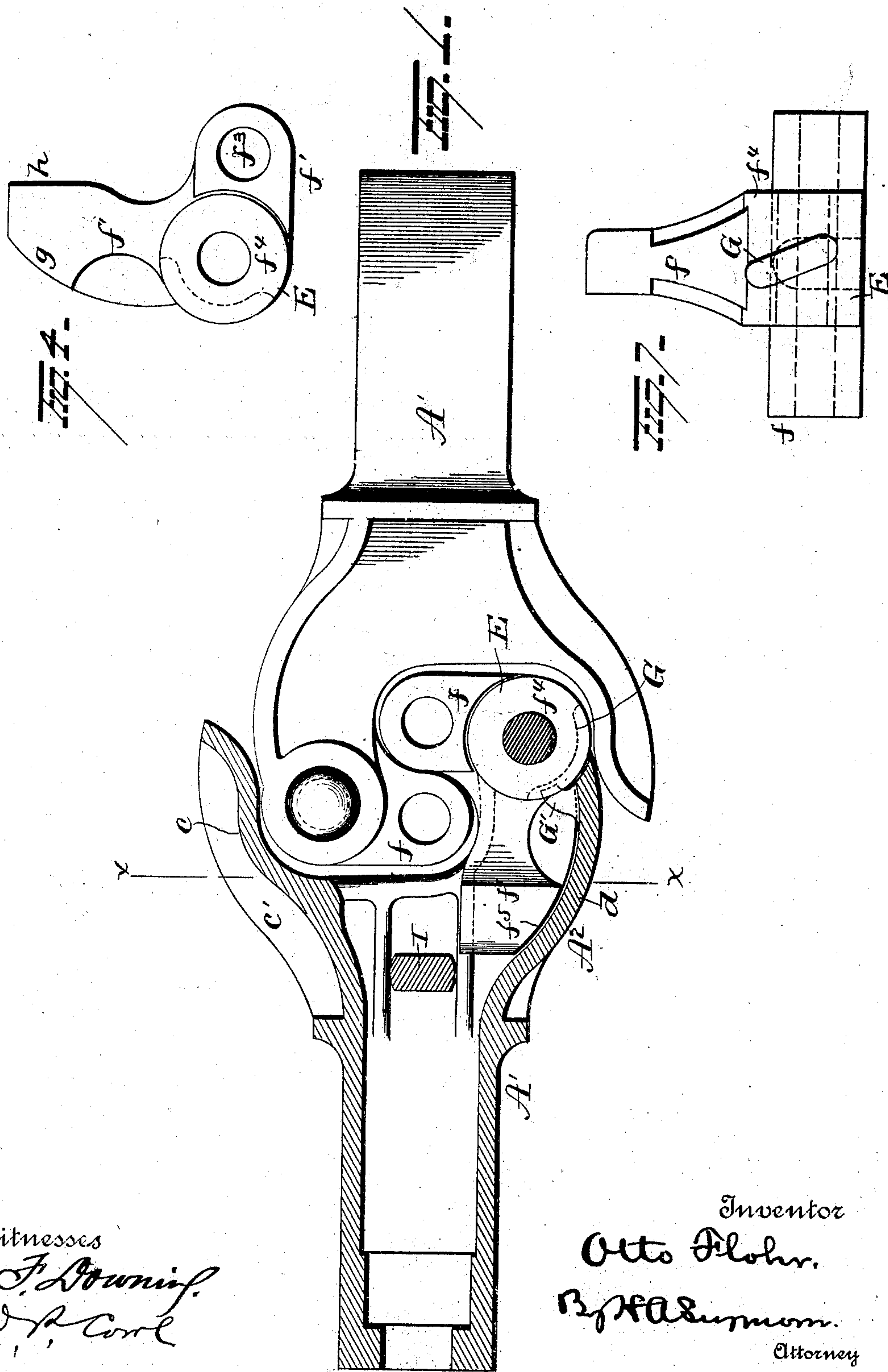
(No Model.)

2 Sheets—Sheet 1.

O. FLOHR.
CAR COUPLING.

No. 502,412.

Patented Aug. 1, 1893.



Witnesses
G. F. Downing
D. R. Cook

Inventor
Otto Flohr.
By H. A. Sumner.
Attorney

(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

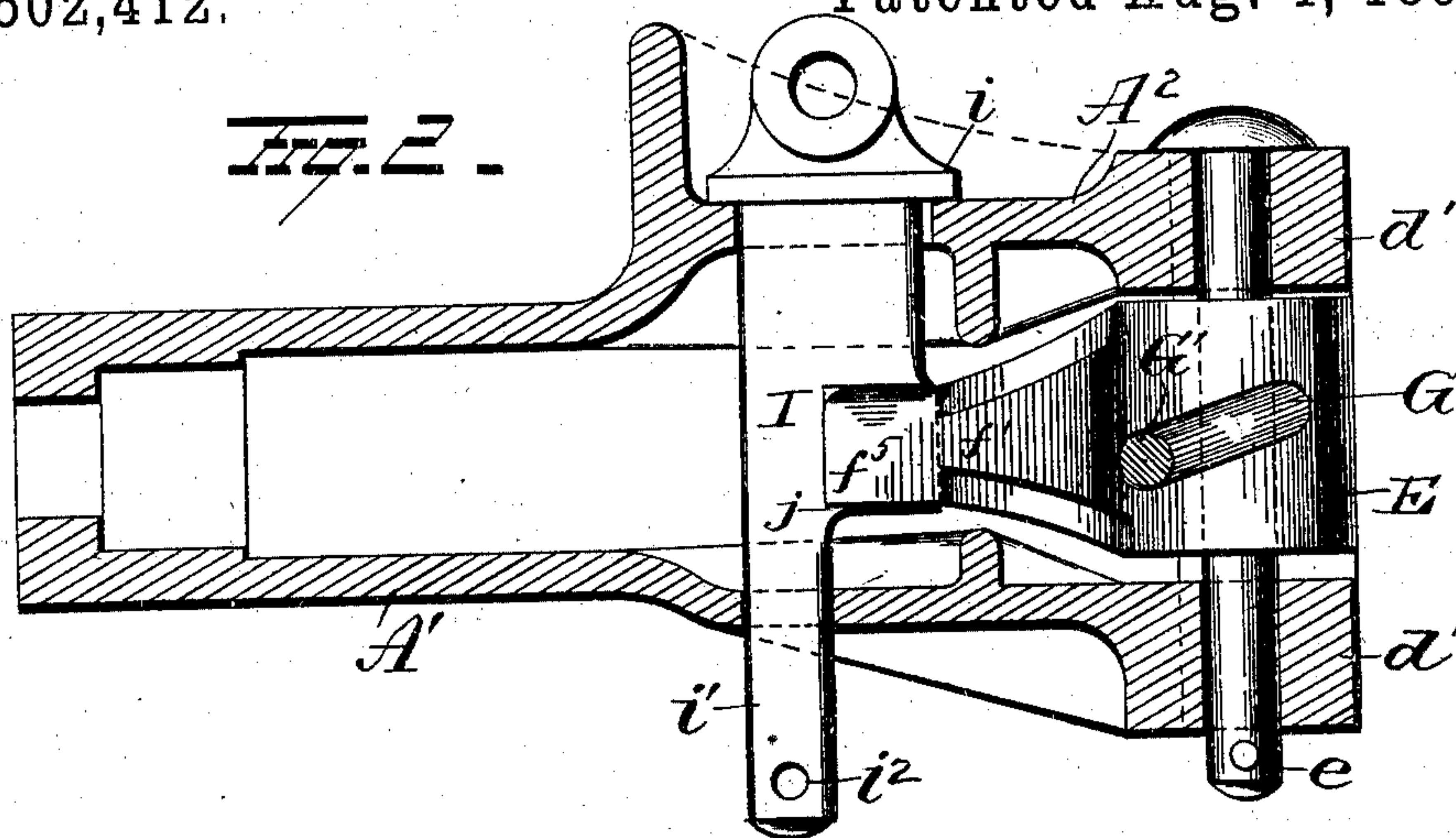


Fig. 3.

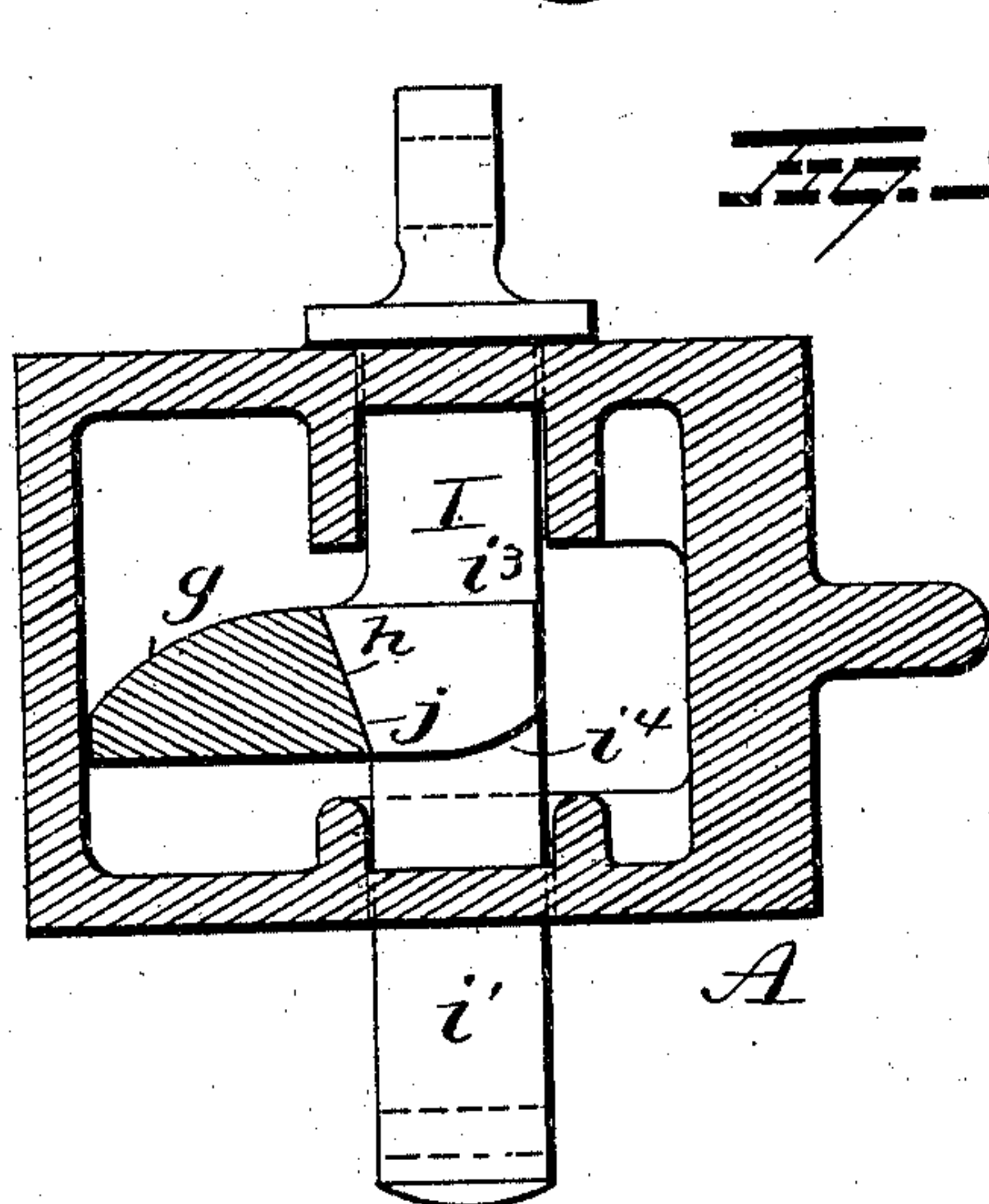


Fig. 5.

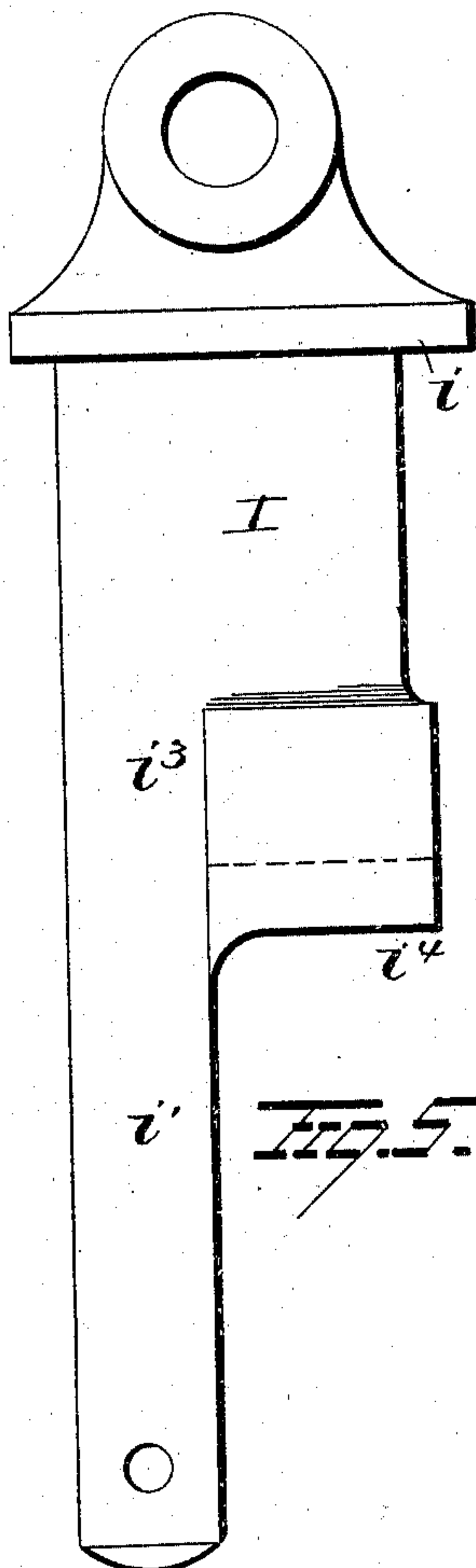
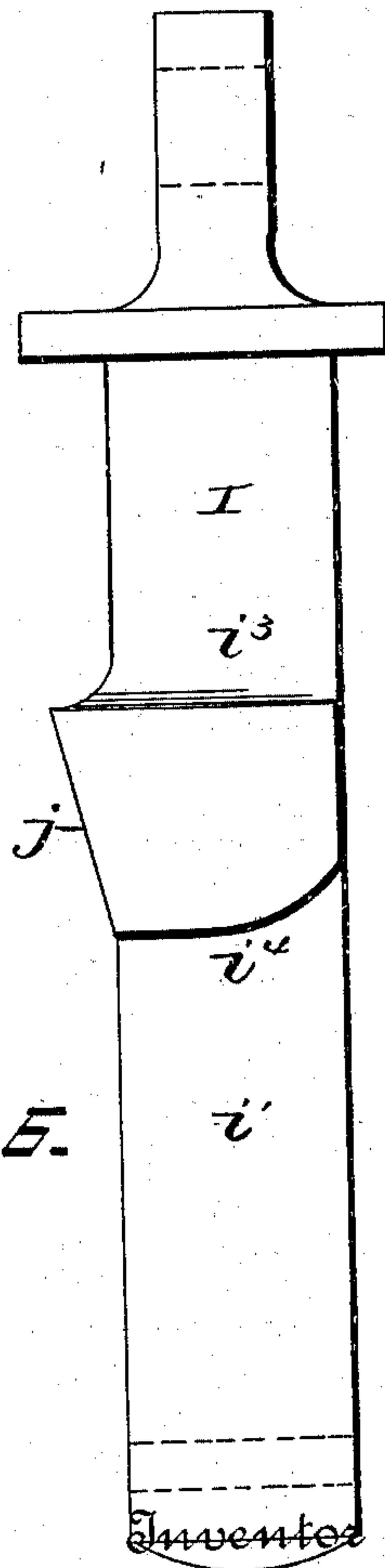


Fig. 6.



Witnesses
G. F. Downing
D. A. Correll

Otto Flohr,
By H. A. Symmons,
Attorney

UNITED STATES PATENT OFFICE.

OTTO FLOHR, OF BUFFALO, NEW YORK, ASSIGNOR OF TWO-THIRDS TO
HENRY ALTMAN AND GEORGE E. MANN, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 502,412, dated August 1, 1893.

Application filed December 3, 1892. Serial No. 454,184. (No model.)

To all whom it may concern:

Be it known that I, OTTO FLOHR, of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Car-Couplings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in car couplings of the class known as the vertical plane coupler, the object of the same being to improve on the type of couplers of this general class by rendering them more positive and certain in their action.

A further object is to so construct the parts that the resistance in uncoupling is reduced to a minimum.

A further object is to lessen the cost by making the coupler of few parts so constructed and disposed that they will not be injured or distorted by any of the usual strains to which car couplers are ordinarily subjected.

With these ends in view my invention consists in the parts and combinations of parts as will be more fully described and pointed out in the claims.

In the accompanying drawings Figure 1 is a view in plan of two couplers showing one in plan and the other in section. Fig. 2 is a view in elevation of one of the couplers, the casing thereof being in section. Fig. 3 is a sectional view on the line xx of Fig. 1. Fig. 4 is a detached view of one of the coupling jaws or knuckles. Figs. 5 and 6 are views of the locking pin, and Fig. 7 is a detail.

The draw head is made of cast metal preferably in one piece with its shank A' constructed to be attached to the car by tail bolt or other means. The top and bottom walls of the shank are preferably horizontal and the front or coupling head A^2 is enlarged vertically and ribbed if desired to give it additional strength to withstand the rough usage to which all couplers are subjected. The side wall c of the head A^2 is curved as shown, and ribbed at c' externally to increase its strength while the wall d is curved and provided with bearings d' for the reception of pin e which latter carries the coupling jaw E . This jaw

E consists of a locking arm f and a coupling arm f' arranged approximately at right angles as shown, the coupling arm f' being somewhat shorter than the locking arm and provided with a slotted end for the reception of an ordinary coupling link, and with a pin hole f^3 for the passage of a coupling pin. The coupling arm, and outer faces of the throat of the coupling head A^2 are so constructed as to engage and receive the corresponding parts of vertical plane couplers now in use, or those constructed on the standard lines, and hence there is no necessity for describing the contour of these parts minutely.

The hub f^4 of the jaw E rests between the bearings d' of head A' and being shorter than the space between the bearings d' has a limited vertical movement as will be hereinafter fully described. The jaw E is mounted on the pin e and is free when unlocked to make a quarter turn. The locking arm f of the jaw E is curved on its rear face as shown at f^5 so as to conform to the shape of the wall d of the head A^2 . By this construction when the jaw is in its locked position as shown in Fig. 1 it has bearings throughout its entire length against said wall d . The hub of jaw E is provided with an inclined slot G adapted to receive a projection G' integral with or rigidly secured to the head A^2 of the coupler. When the jaw is in its closed position the projection G' rests in the lower end of the slot G and the jaw E in its elevated position, or in other words the act of turning the jaw to its closed position, causes the jaw to move vertically by reason of the engagement of the projection G' with the inclined slot G of the hub f^4 . From the foregoing it will be seen that as soon as the locking arm f is released, the weight of the jaw E falls on the projection G' and causes the jaw to swing to an open position and remain open until again forcibly closed by hand or by contact with another coupler.

The locking arm f is rounded or curved at its rear outer end as shown at g , and is beveled at its front outer end as shown at h . The locking pin I with which this arm engages is shown clearly in Figs. 4 and 5. This pin I , passes through the coupling from the top, and being angular in cross section is

prevented from turning. The opening for the passage of the pin, as clearly shown in Fig. 2 is slightly larger than the pin so that the latter can move freely and is provided with a cap *i* which latter is designed to exclude dust and dirt from the interior of the head. The body of the pin is as before stated angular in cross section while the lower section *i'* thereof can be round or of any other shape desired. This section *i'* passes through the bottom of the head and is locked against withdrawal by the pin *i*². The lower edge of the body *i*³ of the pin is curved as shown at *i*⁴ Fig. 5, while the side of the body adjacent to the lower edge of the curved section is inclined as at *j* outwardly and upwardly from the lowest point of the curved portion *i*⁴ a distance equal to the thickness of the locking arm *E'*. This inclined face *j* is engaged by the inclined face *h* of the locking arm when the latter is in its locked position, and holds the locking arm solidly in position and prevents any movement whatsoever. The pin normally rests in its depressed position and when the coupling jaw is turned by contact with another coupler or by hand, the curved section *g* thereof engages the curved under face *i*⁴ of the forwardly projecting portion of the pin and raises same. By making the surfaces *g* and *i*⁴ curved there is but a limited contact between said parts and hence but slight friction to overcome. The locking arm or the curved section *g* thereof passes under the curved portion *i*⁴ of the pin, and after the former has passed the latter, the pin falls, thus bringing the inclined face *j* of the pin in contact with the inclined face of the locking arm. The weight of the pin resting on the inclined face of the locking arm holds the latter rigidly in position, and consequently prevents undue wear of the arm and pin *e*.

The strain of the inclined face *h* of the locking arm *E*, against the inclined face *j* of the pin tends to elevate the pin and hence when it is necessary to uncouple for any purpose while the train is in motion or standing still, but very little power is required to elevate the pin and release the locking arm.

This coupling is composed of but two mov-

able parts and hence the liability to damage is reduced to a minimum.

It is evident that changes in the construction and relative arrangement of the several parts might be made without avoiding my invention and hence I would have it understood that I do not restrict myself to the particular construction and arrangement of parts shown and described, but,

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

1. In a car coupling the combination with a draw head having a projection thereon, of a coupling jaw having an inclined slot within which said projection rests and means for locking the jaw in its closed position.

2. In a car coupling the combination with a draw head having a projection thereon, of a coupling jaw pivoted to the head and having an inclined slot in its hub adapted to receive the projection on the head, and means for locking the jaw in its closed position.

3. The combination with a draw head and a coupling jaw consisting of a coupling arm and a locking arm, the latter having a curved face and an inclined face, of a locking pin having a curved surface adapted to be engaged by the curved face of the locking arm as the latter is moved to its closed position and with an inclined face adapted to rest in contact with the inclined face of the locking arm when the latter is in its closed position.

4. The combination with a draw head having a projection and a coupling jaw having a slot, a curved face and an inclined face, of a coupling pin having a curved section adapted to be engaged by the curved section of the locking jaw, and an inclined section adapted to engage the inclined section of the locking jaw.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

OTTO FLOHR.

Witnesses:

C. S. DRURY,
GEORGE F. DOWNING.