

(No Model.)

P. M. REAGAN.
CAR COUPLING.

No. 577,389.

Patented Feb. 16, 1897.

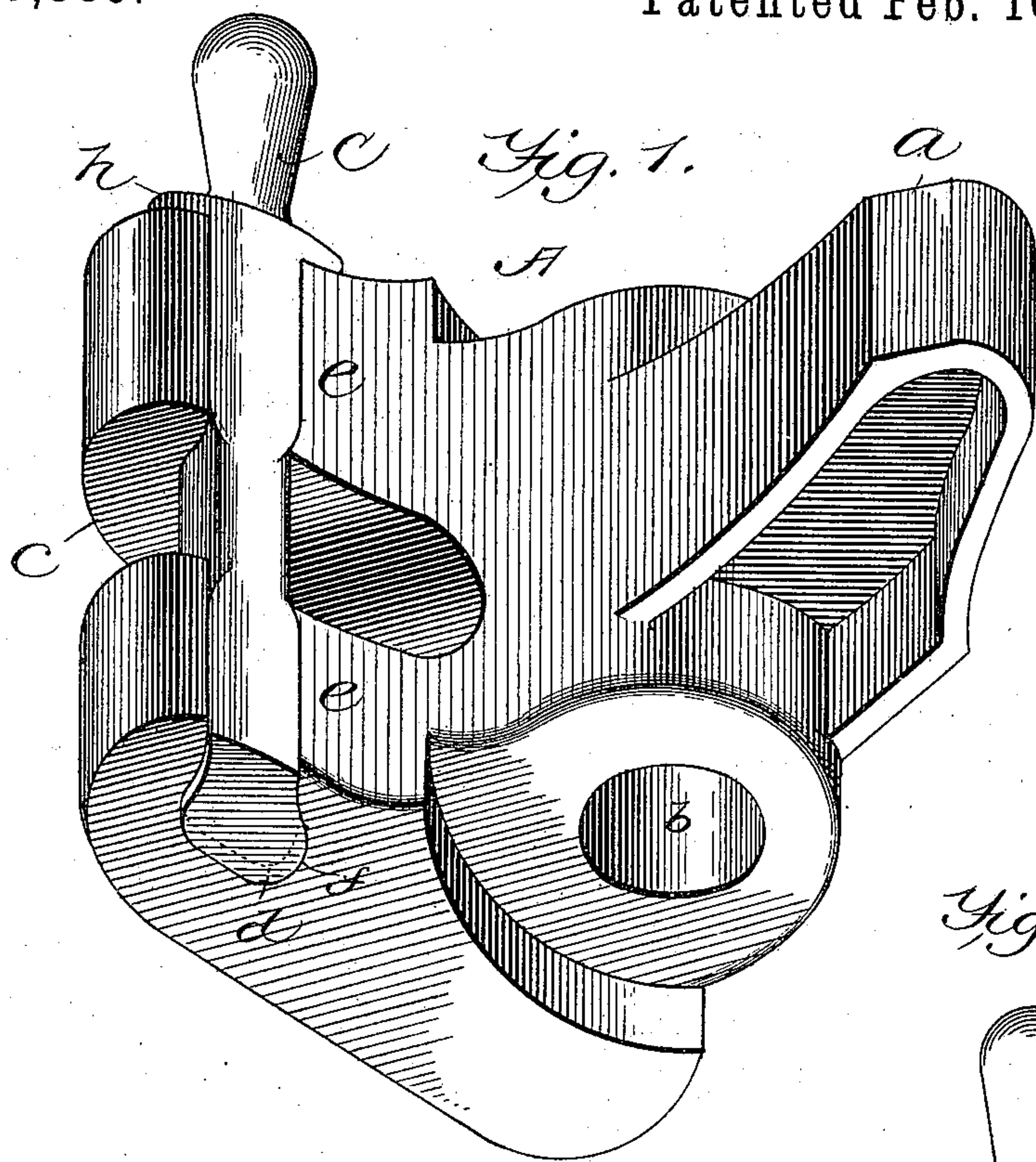
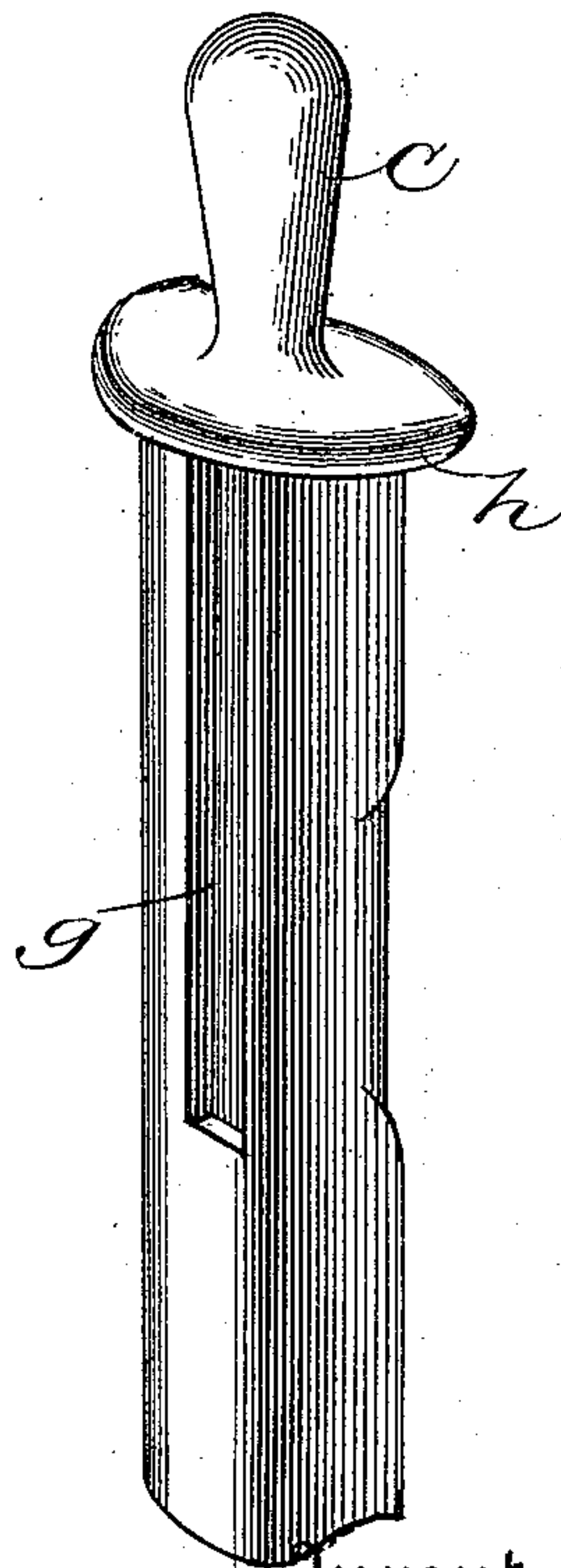
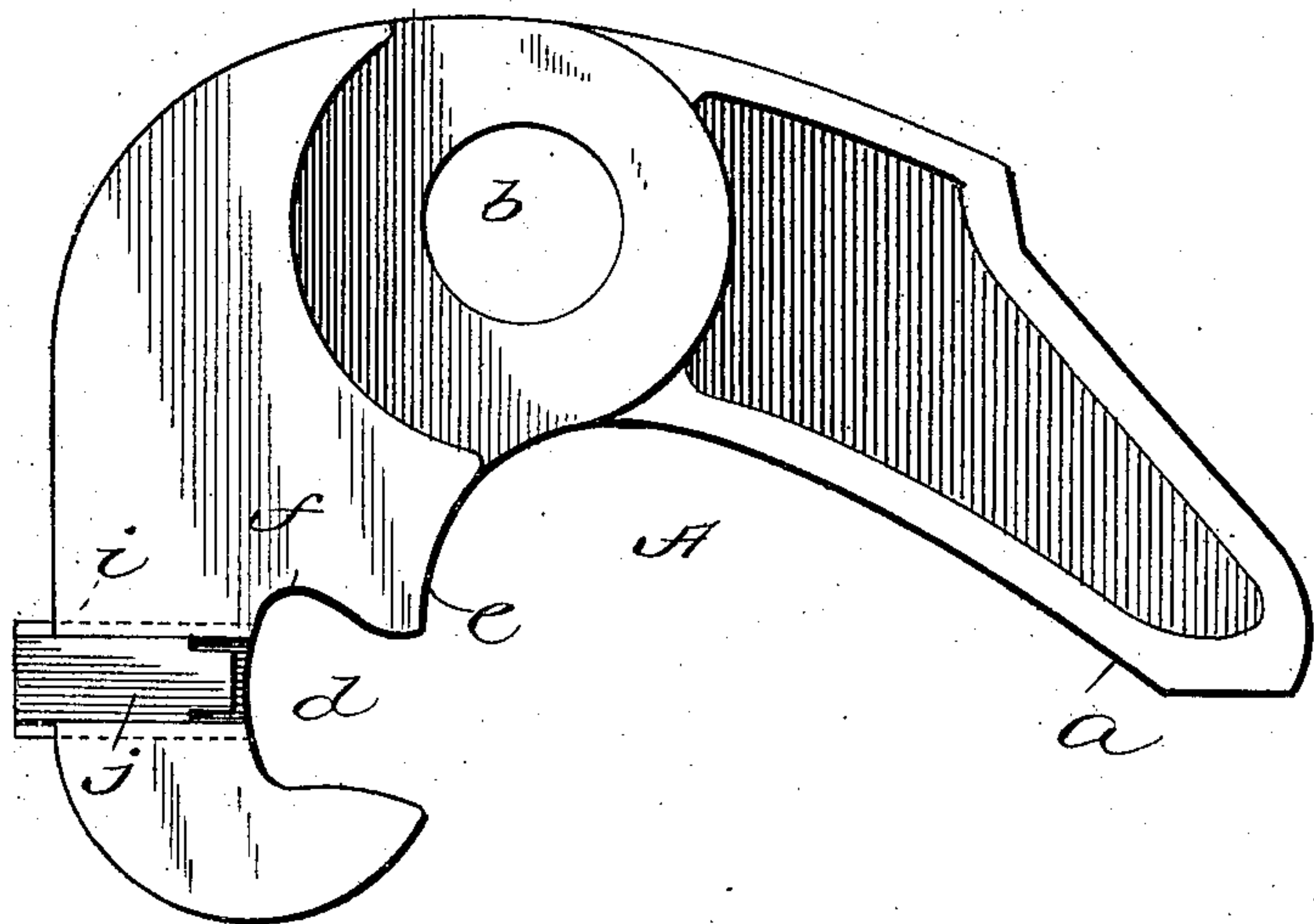


Fig. 1.

Fig. 3.

Fig. 2.



Witnesses

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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 577,389, dated February 16, 1897.

Application filed July 16, 1896. Serial No. 599,429. (No model.)

To all whom it may concern:

Be it known that I, PAUL M. REAGAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Car-Couplers; 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.

This invention relates generally to car-couplers, and particularly to automatic couplers of that type in which swinging knuckles are employed to make the coupling, although the invention may also be applied to that class of couplers known as "Miller" hooks; and it has for its object to increase the durability of the knuckle or hook and to render the same practically indestructible from the wear on their faces resulting from the rubbing action of the meeting faces on each other when in use and at the same time reducing the liability of the knuckle to break at the point where the coupling-pin passes through it when it is used as a link-and-pin coupler, while the means employed to produce this result may also be used as a coupling-pin to couple a link-and-pin coupler to the automatic couplers named above; and it consists, broadly, in providing a knuckle having a groove formed in its inner or bearing face and intersecting the link-slot and providing a pin adapted to fit said groove, as will be hereinafter more fully described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a perspective view of knuckle for a car-coupler provided with my invention; Fig. 2, a top plan view of the same with the pin removed, and Fig. 3 a perspective view of the pin.

Similar letters refer to similar parts throughout the several views.

Referring to the drawings, A represents a knuckle for an automatic car-coupler of the Janney type provided with a tailpiece *a*, a pivot or hinge pin opening *b*, and a link-slot *c*, all of which may be of the usual or any desired form of construction adapted for use in vertical-plane couplers. In this style of knuckle a vertical perforation is usually formed centrally of the bearing-arm of the

knuckle to receive a pin whereby the coupler may be coupled with a link when necessity arises, and it is found that such perforations tend to weaken the knuckle and that fracture thereof frequently occurs under the strain of moving heavy trains; also, it is found that the constant rubbing of the bearing-faces of the couplers against each other while in use soon wear the metal away and render the knuckle useless.

Now it is the purpose of my invention to obviate the objectionable features named above by providing a knuckle having a removable bearing-face in the shape of a pin, which also serves the purpose of a coupling-pin when it is necessary to make a coupling between a link-and-pin coupler and an automatic coupler of the types named.

In carrying out my invention I form a groove *d* in the bearing-face *e* of the coupling-arm of the knuckle, which preferably extends vertically through the arm and intersects the link-slot *c*, although for the purposes of my invention the groove may terminate at a point below the plane of the bottom of the link-slot and not extend entirely through the arm.

I prefer to form the groove *d* so that it extends laterally deeper, as at *f*, into the metal of the knuckle on the side adjacent its hinge or pivot pin opening for the reason that the knuckle is heavier at that side than at the end or other side of the knuckle, and I am thereby enabled to provide a comparatively wide mouth for the groove and at the same time give a somewhat dovetail shape to the groove in order to lock the pin C therein against lateral movement without materially affecting the strength of the arm. The wide mouth given the groove enables me to use a pin having one side of such width as to afford all the bearing-surface for the mating knuckle, thus obviating all rubbing and frictional action on the knuckles and throwing it on the pin, and as the latter can be made of much harder metal than is practical in the knuckle-casting its resistance to wear is greater than that of the knuckle.

The pin C corresponds generally to the shape of the groove *d*, and the latter may be of any preferred shape, and one side of the pin, the outer, when in position in the groove,

is formed slightly rounded or beveled to conform to the curvature of the bearing-face of the coupling-arm, so that said bearing-face and pin present a smooth uniform surface.

- 5 Any desired or suitable means may be employed to prevent the accidental entire withdrawal of the pin from the groove *d*, and I do not desire to be limited to any particular means for this purpose, but I have shown
- 10 one means for accomplishing this object, which consists in forming a groove *g* longitudinally in one side of the pin from a point near its top to a point at or below the plane of the bottom of the link-slot *c* and provid-
- 15 ing the pin with a flange or projection *h*, adapted to extend over the end of groove *d* and rest on the coupling-arm, thus preventing the pin dropping through the groove, while I form a dovetail slot *i* in the upper
- 20 surface of the arm, in which a key *j* is inserted and extends into the groove *g* of the pin, so as to engage the lower end wall of the groove *g* when the pin is raised and thus prevent its entire withdrawal from the groove.
- 25 When it is desired to couple a car provided with a link-and-pin coupling to a car provided with an automatic coupler having my improved knuckle, the pin *C* is raised and the link inserted in the slot *c* of the knuckle
- 30 and the pin dropped therethrough, thus making a coupling in substantially the same way as when a pin is dropped into the perforation therefor in the ordinary knuckles, with this advantage in result that owing to the loca-
- 35 tion of the groove I take up the slack of the link with my improved pin without the necessity of dropping additional pins in the link for this purpose, as is necessary where the pin opening or perforation is formed cen-
- 40 trally of the knuckle-arm.

It will be observed that my invention possesses many advantages over the knuckle having a perforation for the pin in that the groove *c* does not materially weaken the coupling-arm, since it provides a greater thickness

45 or quantity of metal in front of the pin at the point where the greatest strain is sustained in hauling and that the pin may be quickly replaced when occasion requires, thus prac-

tically providing a new knuckle with but 50 trifling expense as compared to the replacement of the knuckle itself and in that I provide an increased bearing and wearing surface for the knuckles by extending the pin across the slot *c*.

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

1. The combination, in an automatic car-coupler, of a knuckle or hook having a coupling-arm formed with a link-slot and a groove 60 adapted to retain a pin formed in the bearing-face of said knuckle and intersecting said slot, and a pin for said groove, substantially as described. 65

2. The combination, in an automatic car-coupler, of a knuckle or hook having a link slot or opening and a groove adapted to retain a pin against lateral movement formed 70 in the bearing-face of said knuckle and intersecting said slot or opening, a pin for said groove, and means for preventing the accidental withdrawal of said pin from said groove, substantially as described.

3. The combination, in an automatic car-coupler, of a knuckle or hook having a link slot or opening and a groove intersecting said slot or opening, and a pin conforming in shape 75 to said groove and having its exposed face or side conforming to the curvature of the bearing-face of the knuckle, substantially as described. 80

4. The combination, in an automatic car-coupler, of a knuckle or hook having a link slot or opening and a groove adapted to re- 85 tain a pin against lateral displacement formed in the bearing-face of the knuckle and intersecting the link slot or opening, a pin having a groove formed in one side thereof, and a key entering the groove of said pin to prevent 90 its accidental withdrawal from the knuckle-groove, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

PAUL M. REAGAN.

Witnesses:

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