

(Model.)

B. W. ARNOLD.

CAR COUPLING.

No. 251,155.

Patented Dec. 20, 1881.

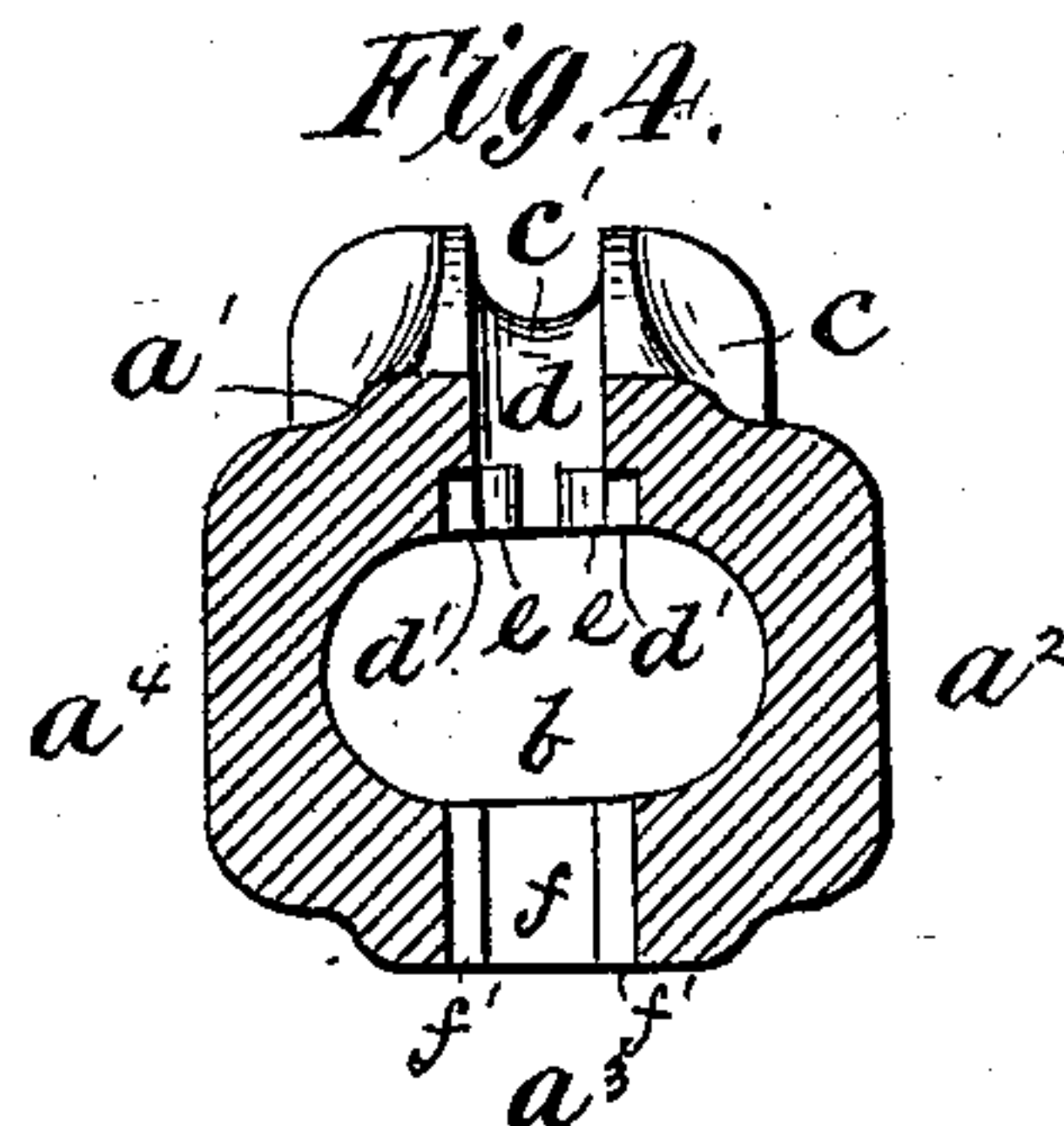
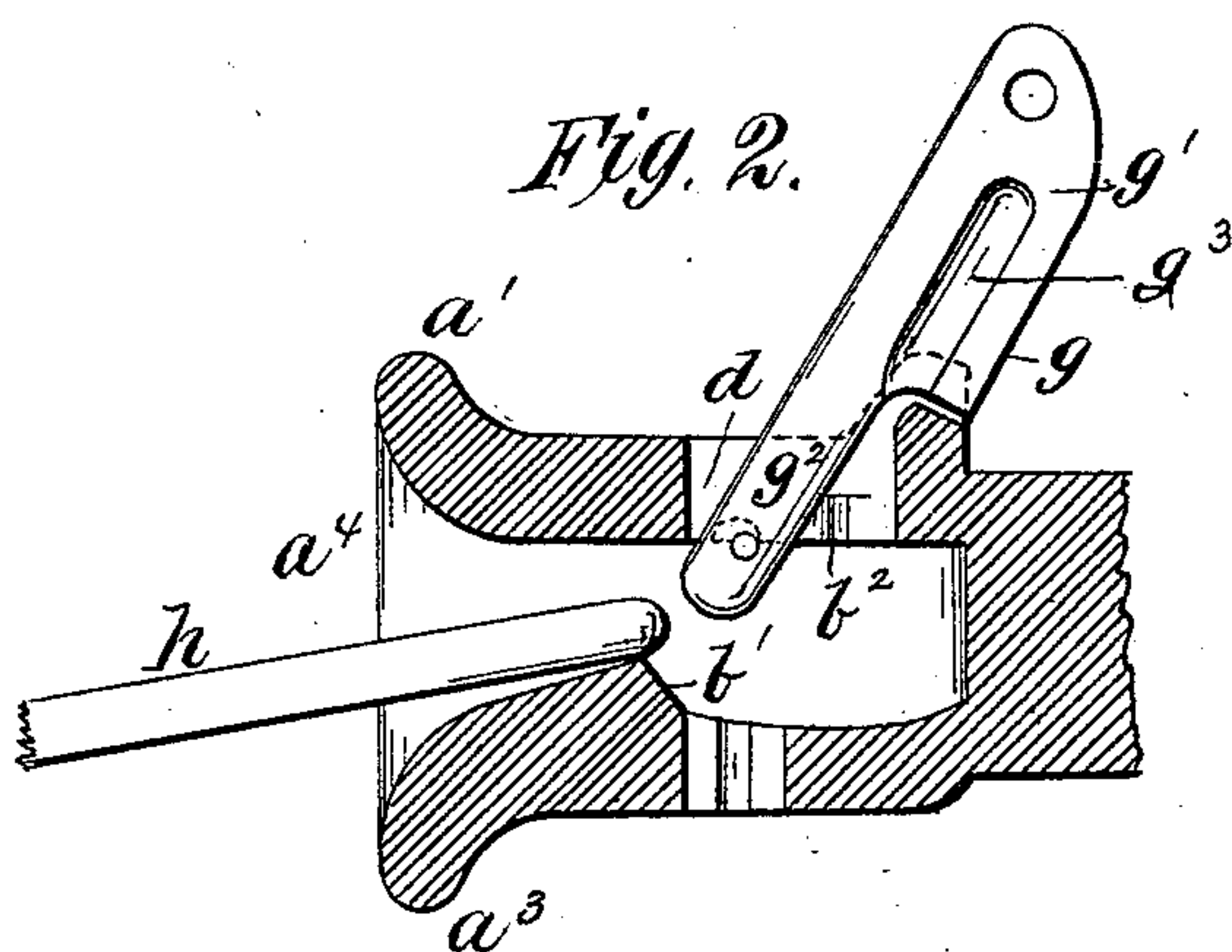
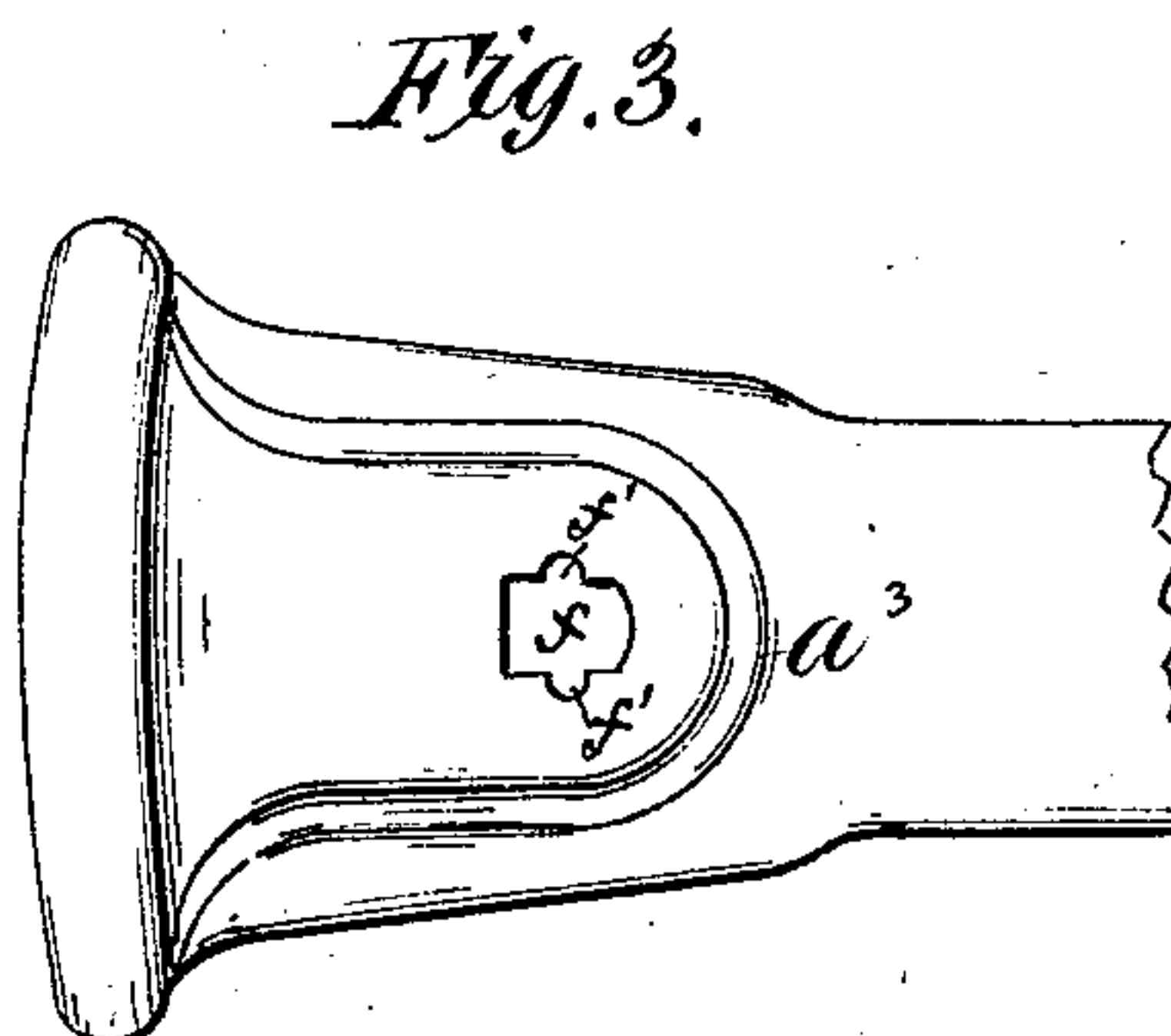
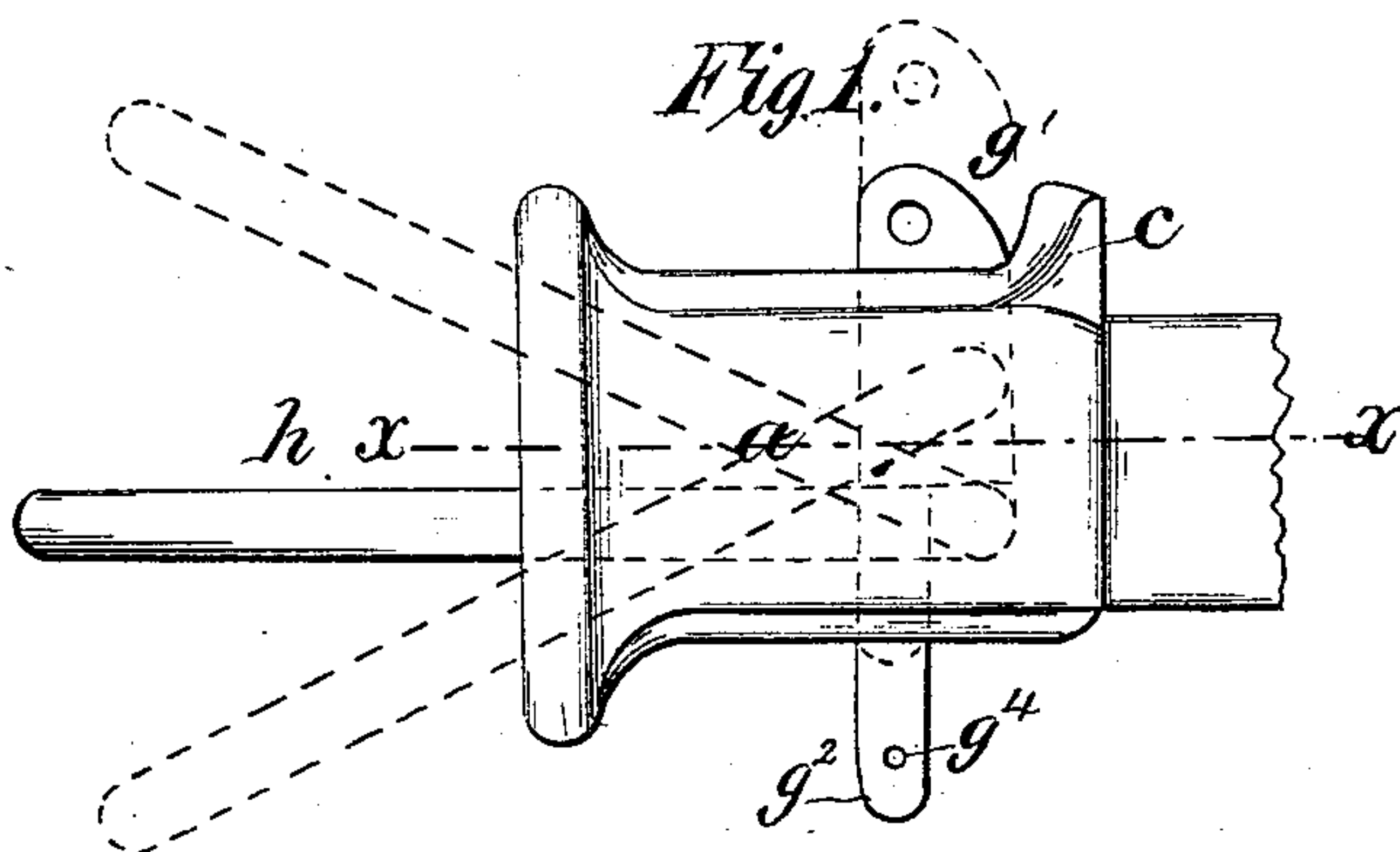


Fig. 5.

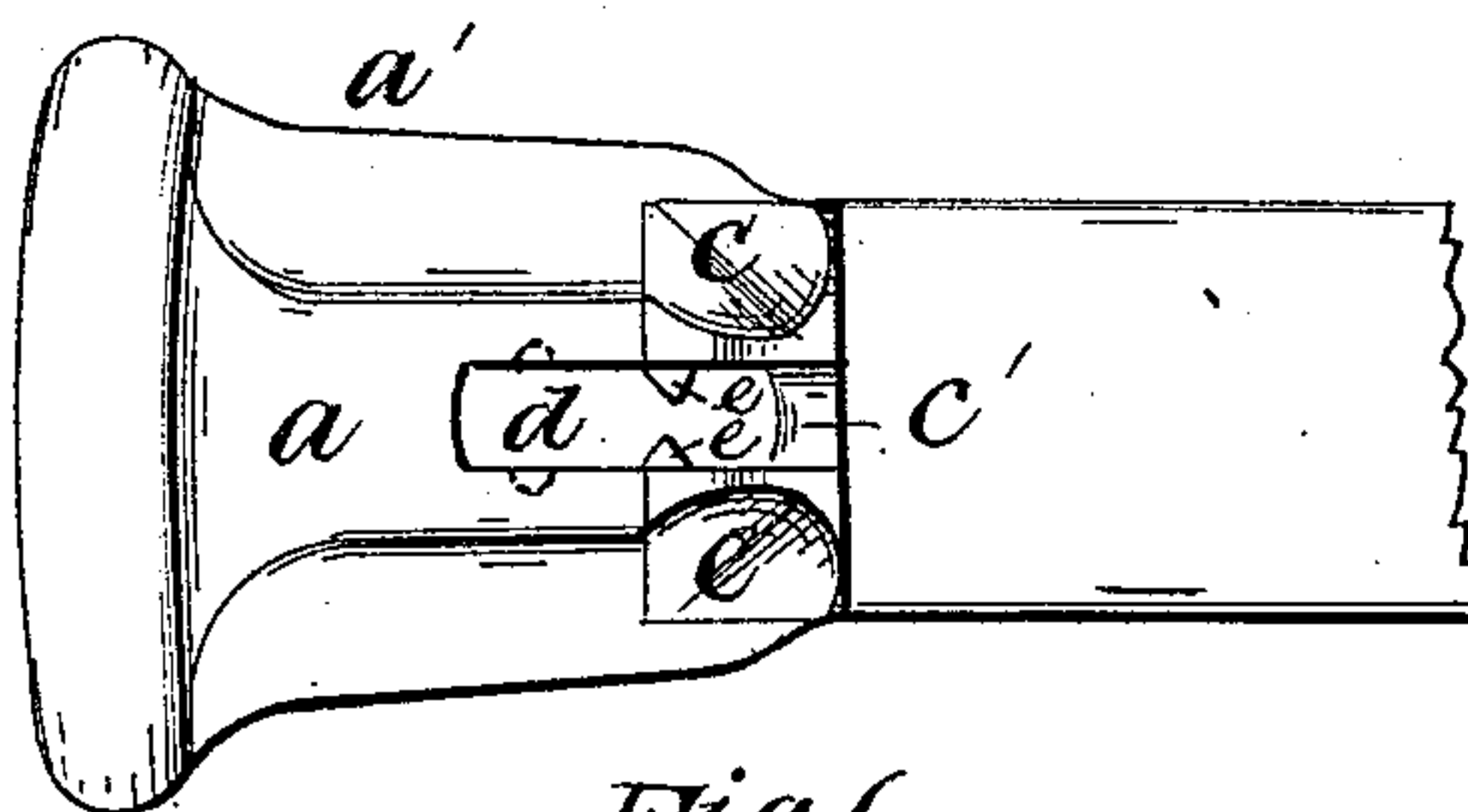
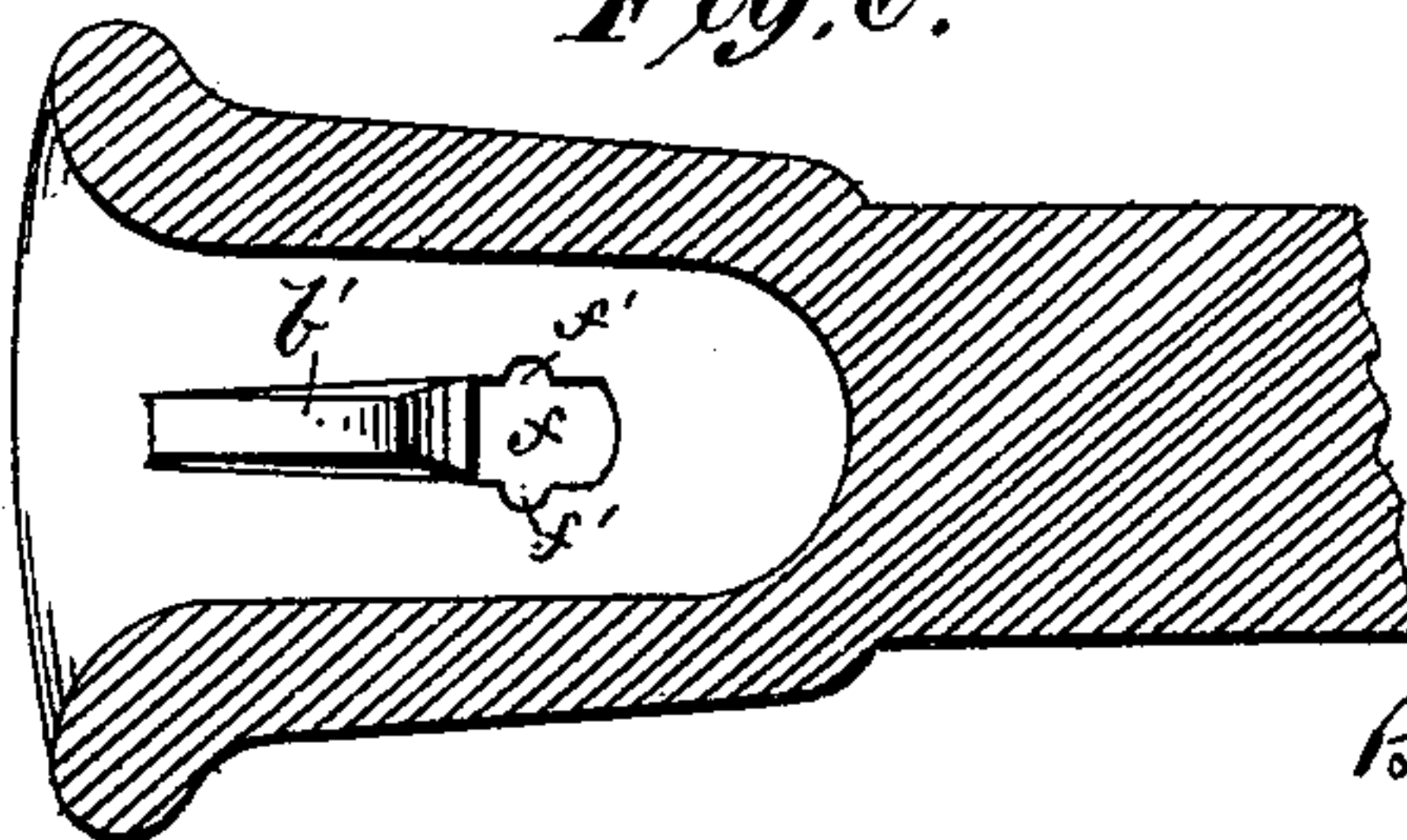


Fig. 6.

Witnesses:
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UNITED STATES PATENT OFFICE.

BERNARD W. ARNOLD, OF LITCHFIELD, ILLINOIS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 251,155, dated December 20, 1881.

Application filed November 10, 1881. (Model.)

To all whom it may concern:

Be it known that I, BERNARD W. ARNOLD, a citizen of the United States, residing at Litchfield, in the county of Montgomery and State of Illinois, 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

5 appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in car-couplings; and it consists in the construction and arrangement of the several parts hereinafter described, and specifically pointed out in the claim.

In the drawings, Figure 1 is a side view. Fig. 2 is a longitudinal section. Fig. 3 is an under side view. Fig. 4 is a cross-section on line xx , Fig. 1, with pin removed. Fig. 5 is a plan view with pin removed; and Fig. 6 is a horizontal section on line xx , Fig. 1, of a coupling constructed according to my invention.

a is the draw-head, provided with ordinary mouth or opening to receive the coupling-link, of ordinary construction. The mouth is flared or rounded, as shown, to facilitate the correct

30 entrance of the link.

b is the recess formed between the four sides $a' a^2 a^3 a^4$ of draw-head a .

b' is a ridge or lug, projected from the top of side a^3 up into the recess, and it extends from

35 near the mouth of the draw-head back to opening hereinafter described, and it is beveled on its forward and rear side, as shown.

cc are lugs or jaws, formed near rear of draw-bar and projecting up on either side of the portion c' , which forms a seat for the coupling-pin, and they are also extended forward part-way on either side of the slot, hereinafter described, and serve as guides for the pin in its descent in the act of coupling, as will be described. The rear portion of the bottom of the draw-head is depressed, or lower than the forward portion, which enables the link to be elevated by pressing on the top of pin when pin

45 is down, as hereinafter described.

d is an elongated slot or opening, formed through the top of the draw-bar, extending

forward from between the jaws c , and it is long enough to permit the widest part of the coupling-pin to enter it.

$d' d'$ are grooves in side of slot d , extended part way up from recess in draw-head and terminating with square shoulder, and adapted to receive and serve as fulcrums for the cross-pins on coupling-pins, as shown, and will be hereinafter described.

55 60

ee are lugs projecting toward each other from the sides of opening d . They are placed near the lower end of said opening and sufficiently distant from front of said opening to permit the lower end of pin to pass between it and the lugs e , and they are arranged to fit into grooves in the side of wider or upper portion of pin and guide it in the descent when coupling, and also to prevent the pin falling so far into the opening as to prevent it from being withdrawn from the top of draw-head. This is accomplished by terminating the grooves in which the lugs fit a sufficient distance from top of the coupling-pin, forming shoulders which bear on the lugs.

65 70 75

f is a slot or opening through lower part of the draw-head, and its front end is arranged directly in line with the front end of opening d , and it is extended rearward far enough to admit the lower or smaller end of coupling-pin.

80

$f' f'$ are grooves in sides of opening f . They are arranged opposite each other, and directly under and in line with the grooves $d' d'$, hereinbefore described.

g is the pin. It is constructed with the wide top section, g' , and the narrower section g^2 , their junction forming a square shoulder, as shown.

85

$g^3 g^3$ are grooves on sides of top section, g' . They extend from alongside the top of section g^2 to near top of the wider section, and, terminating, form shoulders, which are engaged by lugs $e e$, hereinafter described.

90

g^4 is a small pin or cross-bar, placed through the coupling-pin near the lower end of the latter, and extending out on either side of the coupling-pin a sufficient distance to fit and slide easily in the grooves $f' f'$ and $d' d'$, and it is on this pin, resting against tops of grooves $d' d'$, that the coupling-pin is pivoted and held in proper position in the jaws c , and so the link can engage it and knock it down in the act of coupling.

95 100

h is the link, of ordinary construction.

The operation of my device is simple and readily understood by reference to the drawings. In the act of coupling the pin is in the position shown in Fig. 2. The link enters the flaring mouth, as shown, and is guided by the ridge *b'* up to and engages the lower end of coupling-pin and knocks it from its seat, the link then passes down the rear bevel of the ridge *b'*, and the pin falls within the end of the link and secures it. The pivoting of the coupling-pin by the pin *g*⁴ in the tops of grooves *d'* *d'* and the novel arrangement of the said grooves and the lugs *e e* and the jaws which hold the top of pin prevent it from becoming displaced or knocked from its position of rest except by action of link, as described. It will also be seen that when the link is held in the draw-bar ready for coupling with another car the weight of the pin, resting with the shoulder formed by the juncture of the wide and narrow sections, bearing on the inner end of link, just balances link which is fulcrumed on the bottom of recess *b*. If the draw-head of the car to be coupled is higher, the outer end of link can be raised by pressing on the coupling-pin; also, in case the draw-bar of other car is lower, if the coupling be raised the outer end of link will fall. Thus the difficulty from difference in height of draw-bars is overcome.

My invention is simple in construction and operation, and quick of coupling, and neat in appearance, and has no springs or complicated mechanism to get out of order.

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

The combination, substantially as hereinbefore set forth, with a draw-head having an inclined ridge for guiding the link, and having a slot in its top in the sides of which are grooves extending part way up and terminating in square shoulders, and provided with jaws extending from its top and arranged to hold the coupling-pin, of a coupling-pin constructed with a shoulder to rest on the end of and regulate the position of the link, and having through it near its lower end a pin adapted to slide in the grooves in the slot in top of draw-head and bear against shoulders of same and hold the coupling-pin in proper position to be engaged and released by the link, substantially as set forth.

In testimony whereof I affix my signature, in presence of two witnesses, on this 1st day of November, 1881.

BERNARD W. ARNOLD.

Witnesses:

W. M. MARTIN,
JOSEPH L. HOOD.