

No. 791,439.

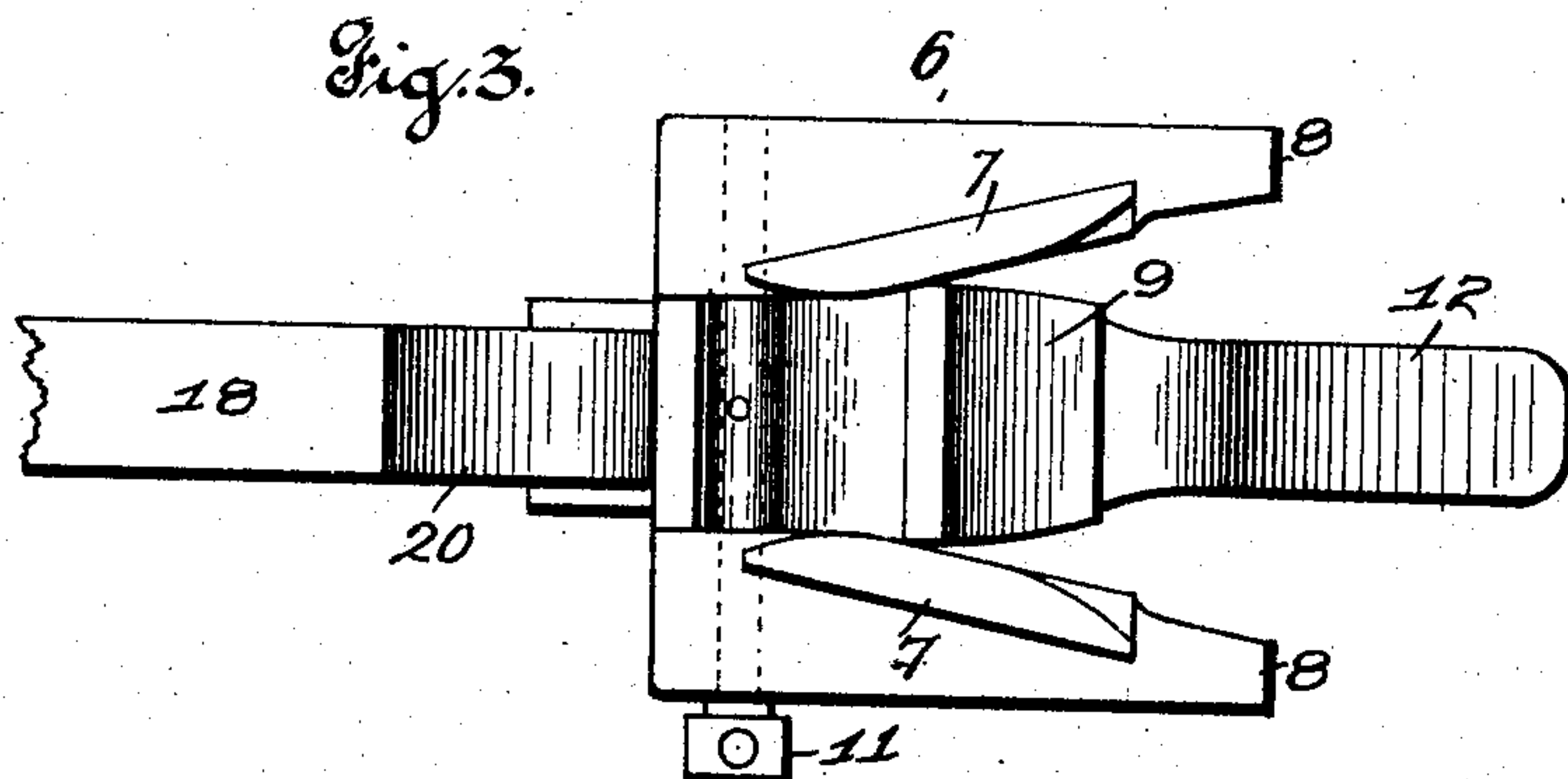
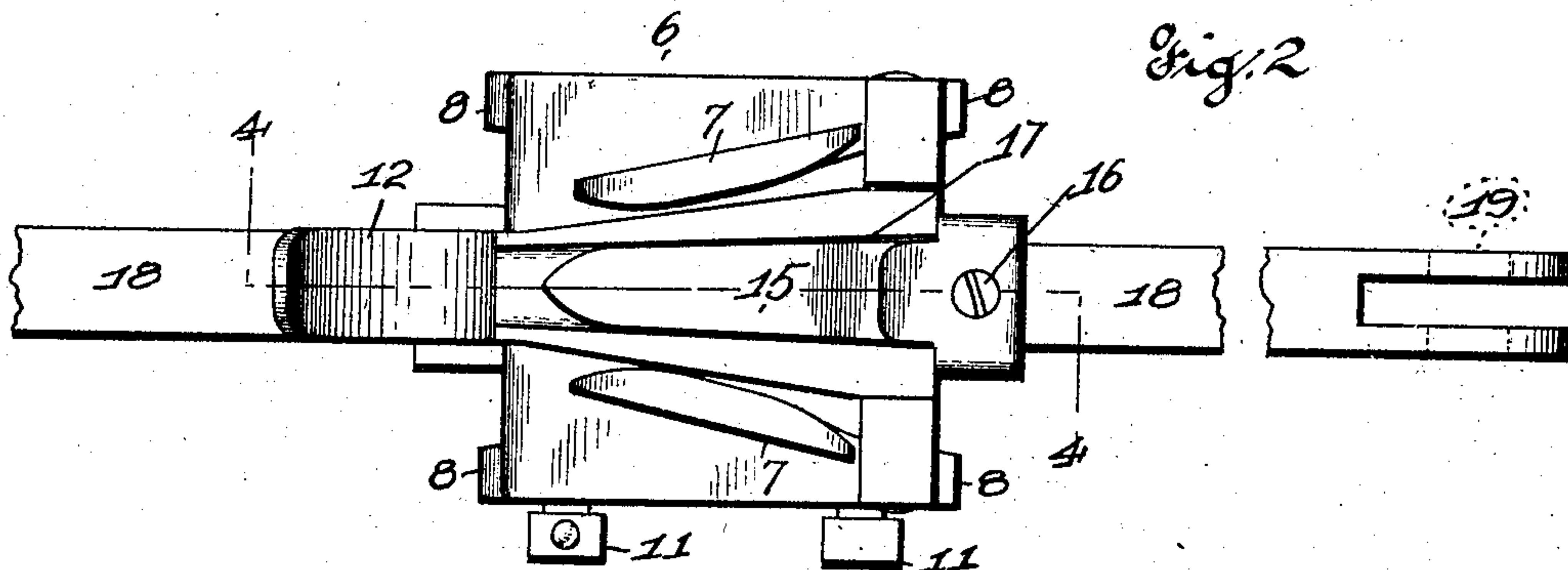
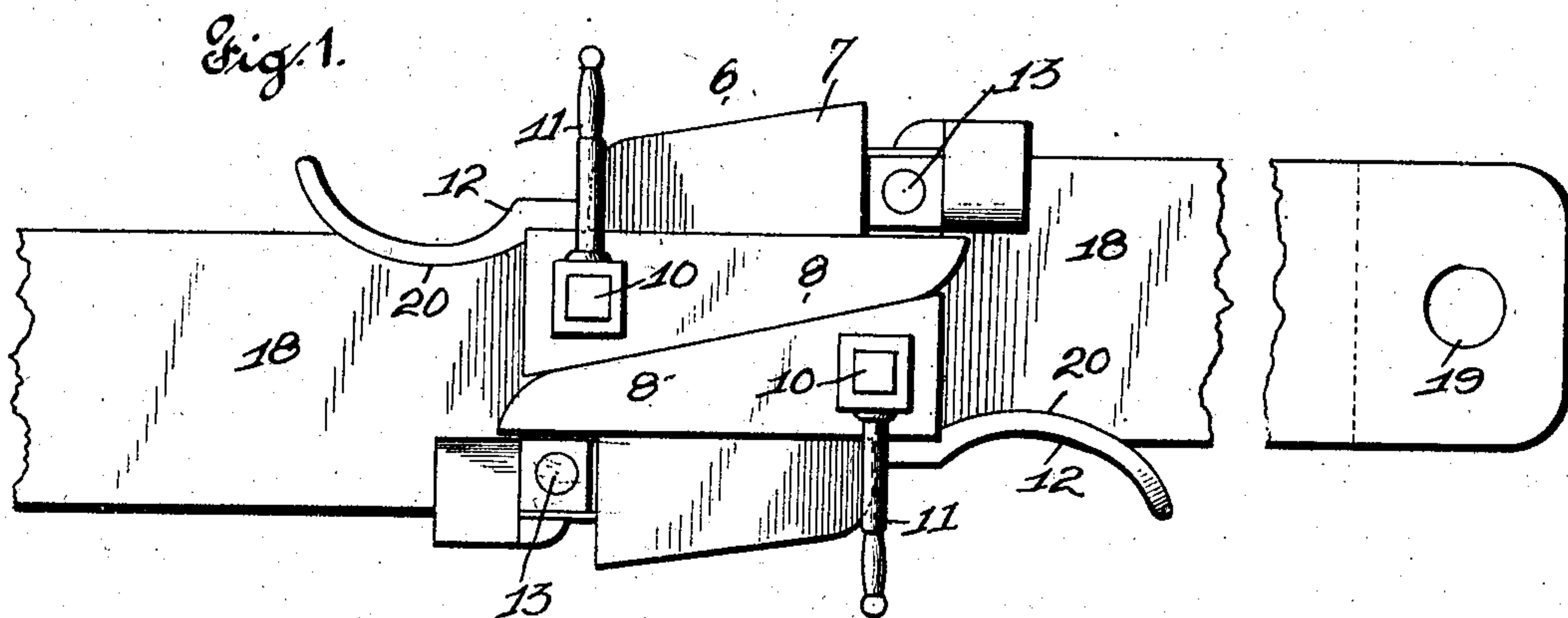
PATENTED MAY 30, 1905.

L. C. CARY.

AUTOMATIC STREET CAR COUPLING.

APPLICATION FILED MAR. 10, 1903. RENEWED JAN. 23, 1905.

2 SHEETS—SHEET 1.



Witnesses
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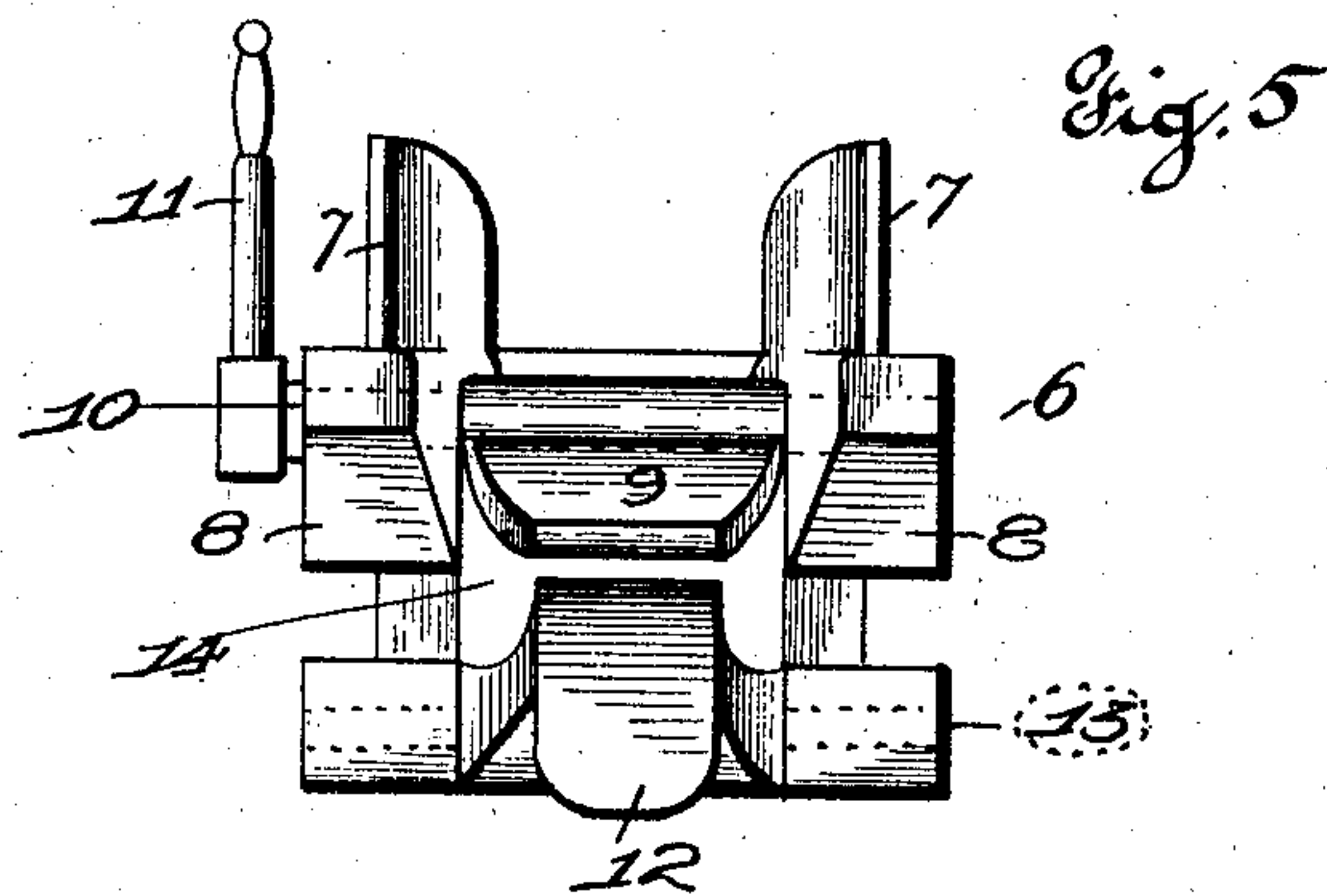
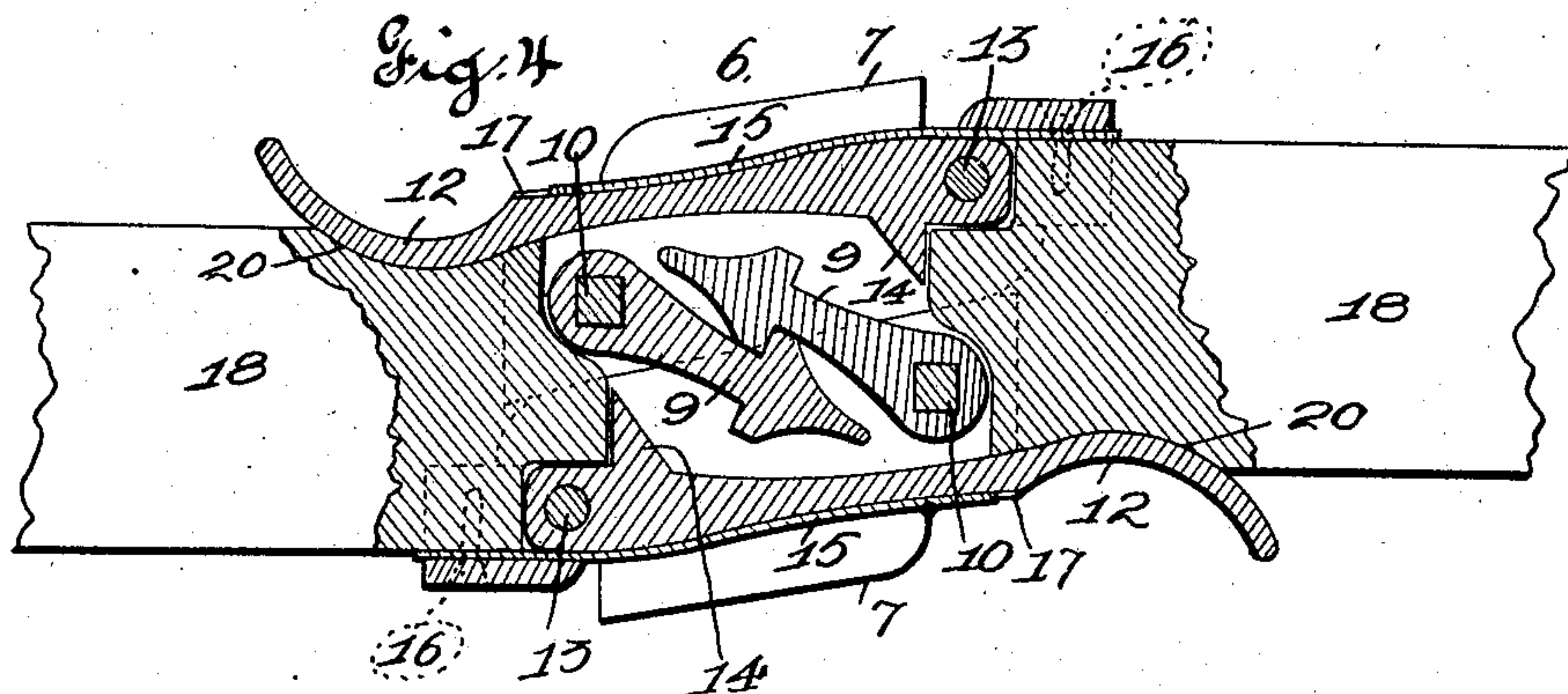
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Witnesses

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UNITED STATES PATENT OFFICE.

LEWIS C. CARY, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO JULIA CALDWELL, OF EL PASO, TEXAS, AND ONE-FOURTH TO EVERETT E. SWINEY, OF CHICAGO, ILLINOIS.

AUTOMATIC STREET-CAR COUPLING.

SPECIFICATION forming part of Letters Patent No. 791,439, dated May 30, 1905.

Application filed March 10, 1903. Renewed January 23, 1905. Serial No. 242,325.

To all whom it may concern:

Be it known that I, LEWIS C. CARY, a citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Automatic Street-Car Couplings, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming
10 a part hereof.

My invention relates to improvements in automatic street-car couplings; and it consists of the novel construction, combination, and arrangement of parts hereinafter shown,
15 described, and claimed.

The object of my invention is to provide an improved automatic street-car coupling which shall possess especial points of construction and function.

Heretofore street-car couplings have usually been of the link-and-pin type, owing to the fact that the automatic type had not been adapted for operation upon street-cars because of the sharp curves encountered at
25 street-corners.

In the drawings, Figure 1 is a plan view of a pair of my improved automatic couplings in a coupled position. Fig. 2 is a side elevation of same. Fig. 3 is a side elevation of one coupling. Fig. 4 is a sectional plan view on the line 4 4 of Fig. 2. Fig. 5 is an end view of one of the heads shown in Figs. 1 and 4, the same being turned so that the operating-handle extends upwardly for the purpose
35 of better illustration.

6 indicates the heads of the couplings, which are exact counterparts of each other and are adapted to automatically interlock, the right front portion having opposite flaring guides 7 in vertical alinement, but with an open space between and at the right and left of said guides. At the left of said guides are horizontal inclined guides 8, arranged in vertical alinement and formed integral
45 with said flaring guides 7. There is also an open space between said horizontal guides, and in this space is pivoted the coupling-hook 9, which is preferably provided with an

arrow-shaped head for an obvious purpose, and said hook is mounted upon a vertical squared pin 10, which has bearings in the base of the upper and lower horizontal guides 8. Said pin extends through the upper horizontal guide 8 and is provided with a handle 11.

For guiding the two heads and also to assist in locking them in a coupled position I provide each head with a yielding combined guide and locking-arm 12, the inner end of which is pivoted at 13 to the base of the head, and said arm extends forwardly and is curved outwardly at its free end. Said arm near its base is provided with a projecting shoulder or lug 14, which is adapted to come in contact with the base of the head, and thereby limit the inward movement of said arm. The outward movement is limited by means of a suitable spring 15, which I prefer to form in blade shape, as shown, with the rear end of said spring fixed to the base of said head by means of a suitable pin or rivet 16, so that the main portion of said spring extends forward parallel to the said arm in contact with the outer surface of the latter. Said arm is provided with a longitudinal groove or recess 17, in which said spring is mounted. Said groove acts as a guide and protection for said spring.

18 indicates the draw-bar, which is preferably made of great length for the purpose of permitting the necessary lateral movement of the head in turning the sharp corners or curves of the city streets. I have not shown the full length of said draw-bar, but have broken it away. It is sufficient to state that the pivotal end of the draw-bar is provided with a pin-hole 19 and extends under the car-body from three to eight feet from the head.

Formed in one edge of the draw-bar, near the base of the head, is a curved locking-recess 20, within which the correspondingly-curved part of the locking-arm 12 of the opposing coupling is to be received.

The operation is as follows: When opposing couplings are made to approach each other,

if they are out of line horizontally the curved outer ends of the guide and locking arms 12 will first come in contact with each other, and as the approach continues said arms will guide the heads into the proper horizontal relation until the said curved ends enter the space between the upper and lower horizontal guides 8 and flaring guides 7, when said guides will cause the said arms to pass inwardly until the said curved ends reach and enter the curved locking-recesses 20. Meanwhile the coupling-hooks will have been interlocked by impact therewith of the adjacent locking-arms 12, and the two heads will thus be held together by a double locking means, one means being the said guide and locking arms and the other means being the said coupling-hooks. It will be observed that the said coupling-hooks have no spring of their own; but they are thrown into a coupling position by means of the sharp impact upon their heads of the inner surfaces of the adjacent guide and locking arm 12, and as said arm is urged inwardly by its spring 15 in ultimately seating in its recess 20 it (said arm) forcibly strikes the head of the coupling-hook and drives said coupling-hook into contact with the opposing coupling-hook after the arrow-heads slip past each other, and then they will interlock, as shown in Fig. 4. When it is desired to uncouple the heads, it will only be necessary to grasp either or both of the handles 11, and thereby swing one of the coupling-hooks 9 out of the path of the opposing hook, when the heads may then be separated by a slight pull, which will unseat the curved ends of the arms 12 from their curved recesses 20.

It will be observed that the flaring opposite guides 7 will act to guide the entering arms 12 vertically in making a coupling. Said arms project a considerable distance in front of the head and act as a "feeler" for the same, so that whenever said arm is properly guided its head will follow after it.

I claim—

1. The improved automatic street - car coupling, comprising a head having opposite vertically-aligned bearing-guides at one side of said head, opposite vertically-aligned horizontal guides having inclined faces and located about centrally of said head, a long guiding-arm projecting a considerable distance in advance of said head and adapted to

act as a "feeler" upon contact with an opposing head, and means for locking said head to an opposing head, substantially as described. 55

2. The improved automatic street - car coupling, comprising a head having opposite vertically-aligned bearing-guides at one side of said head, opposite vertically-aligned horizontal guides having inclined faces and located about centrally of said head, a long guiding-arm projecting a considerable distance in advance of said head and adapted to act as a "feeler" upon contact with an opposing head, means for locking said head to an opposing head; said guiding-arm having a curved part, and a portion of an opposed coupling having a curved recess to receive said curved part of said arm, substantially as described. 65 70

3. The improved automatic street - car coupling, comprising a head having opposite vertically-aligned bearing-guides at one side of said head, opposite vertically-aligned horizontal guides having inclined faces and located about centrally of said head, a long guiding-arm projecting a considerable distance in advance of said head and adapted to act as a "feeler" upon contact with an opposing head, means for locking said head to an opposing head, and a coupling - hook mounted in the space between said horizontal guides, substantially as described. 75 80 85

4. The improved automatic street - car coupling, comprising a head having opposite vertically-aligned bearing-guides at one side of said head, opposite vertically-aligned horizontal guides having inclined faces and located about centrally of said head, a long guiding-arm projecting a considerable distance in advance of said head and adapted to act as a "feeler" upon contact with an opposing head, means for locking said head to an opposing head, a coupling-hook mounted in the space between said horizontal guides, and a spring for said arm, substantially as described. 90 95

In testimony whereof I have signed my name to this specification in presence of two subscribing witnesses. 100

LEWIS C. CARY.

Witnesses:

ALFRED A. EICKS,
M. G. IRION.