

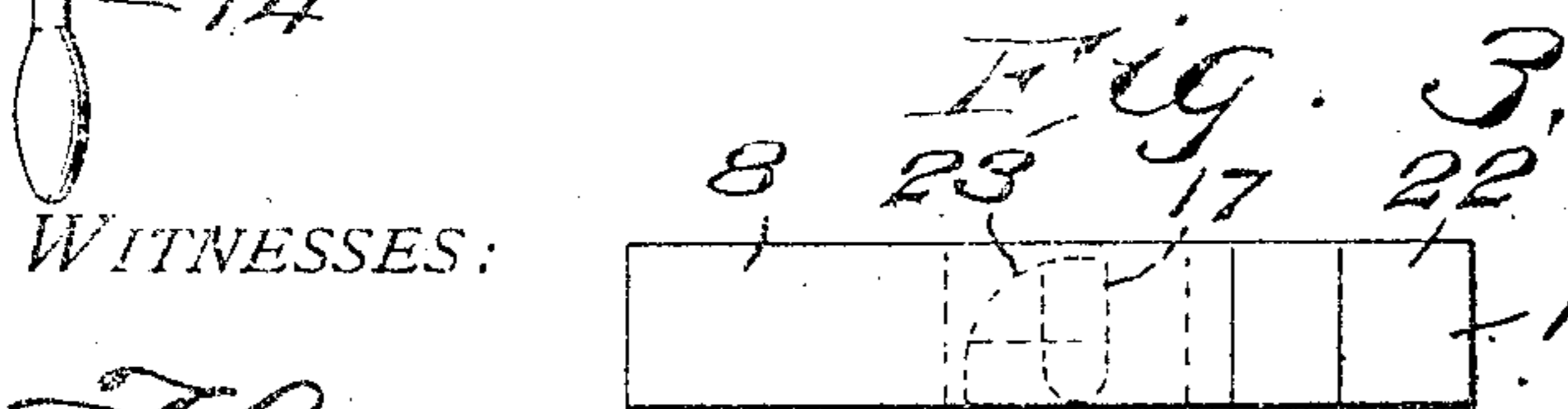
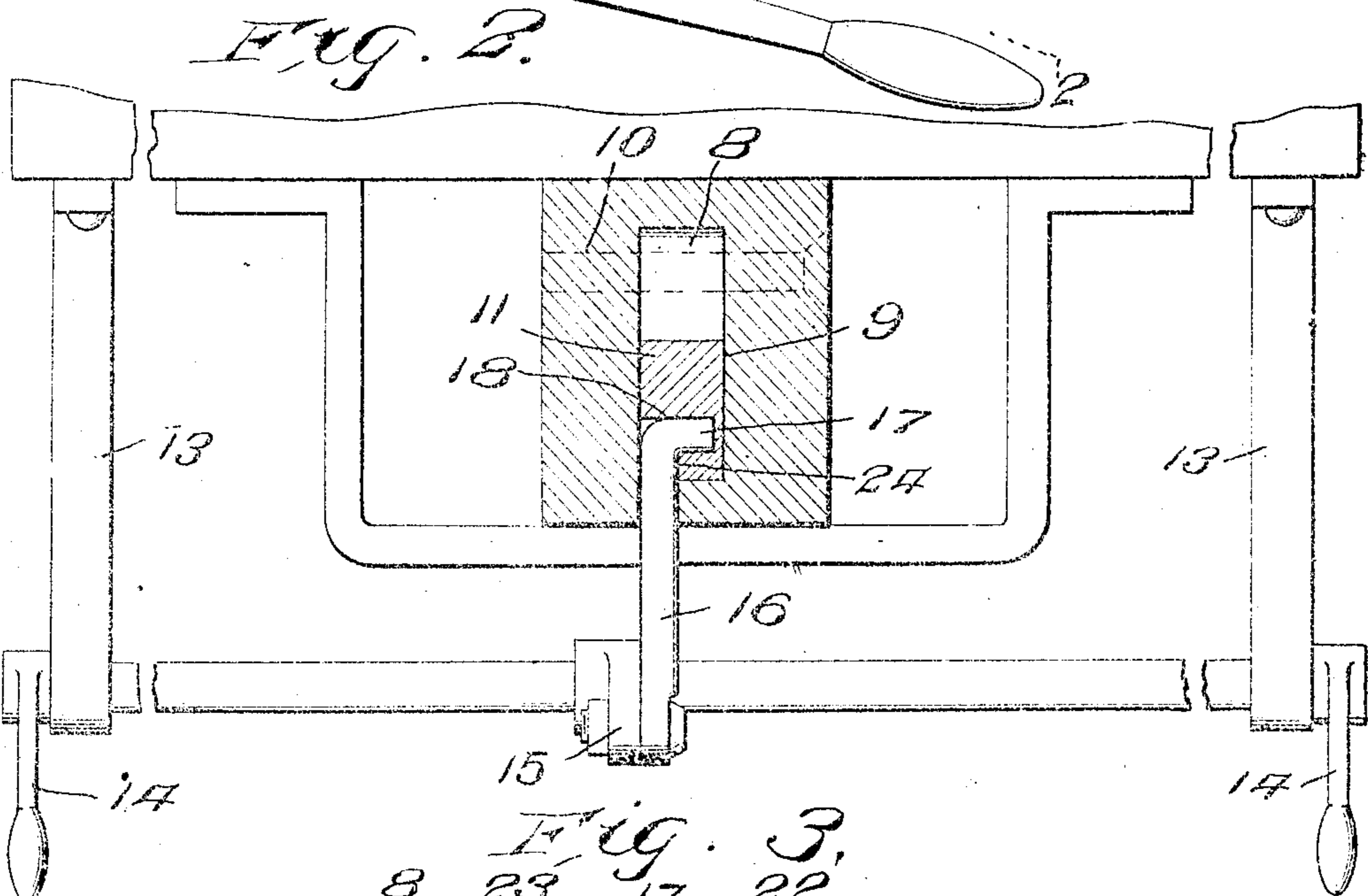
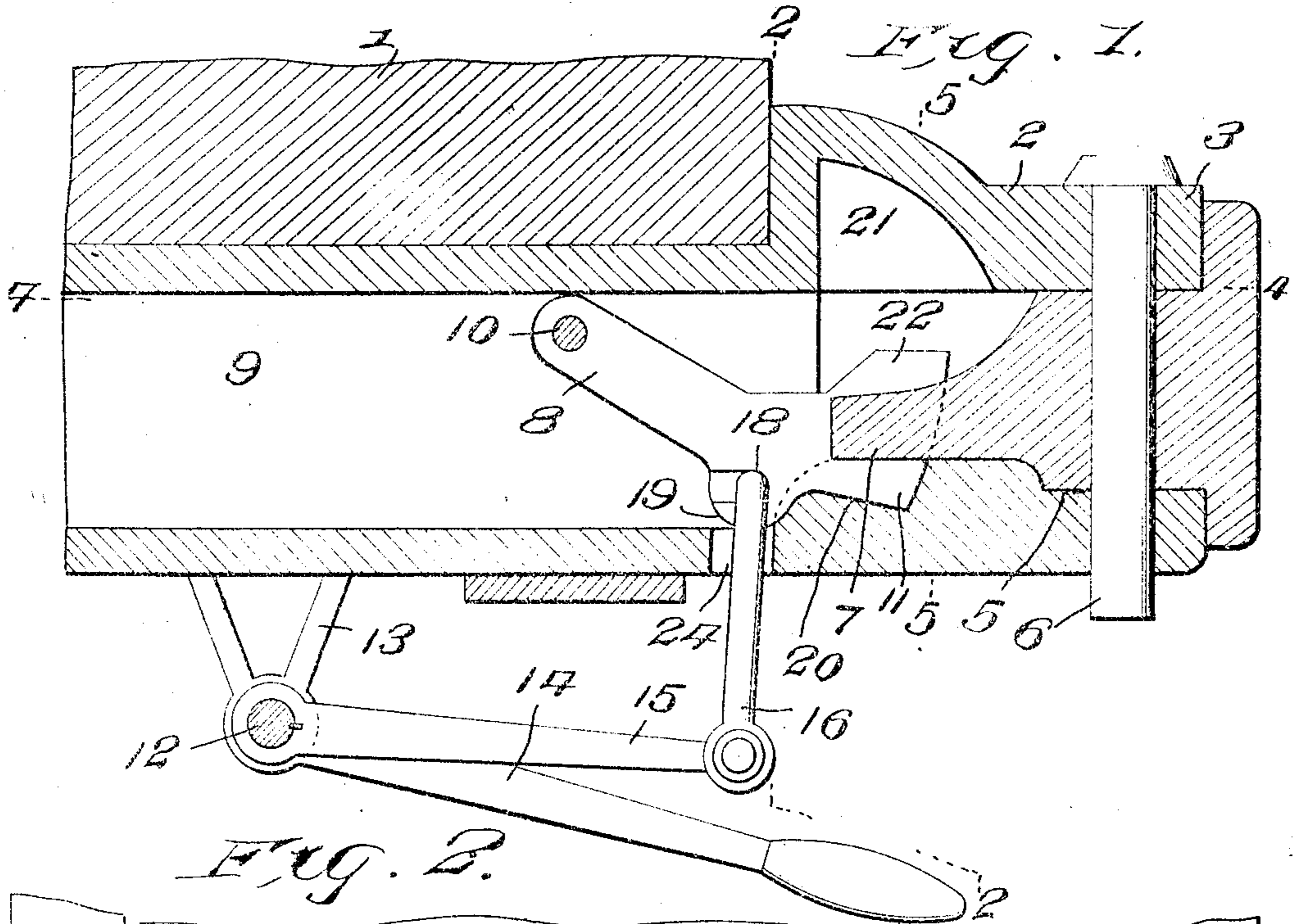
No. 888,431.

PATENTED MAY 19, 1908.

I. SPARKS.
CAR COUPLING.

APPLICATION FILED AUG. 28, 1907.

2 SHEETS—SHEET 1.



WITNESSES:

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2 SHEETS—SHEET 2

Fig. 4

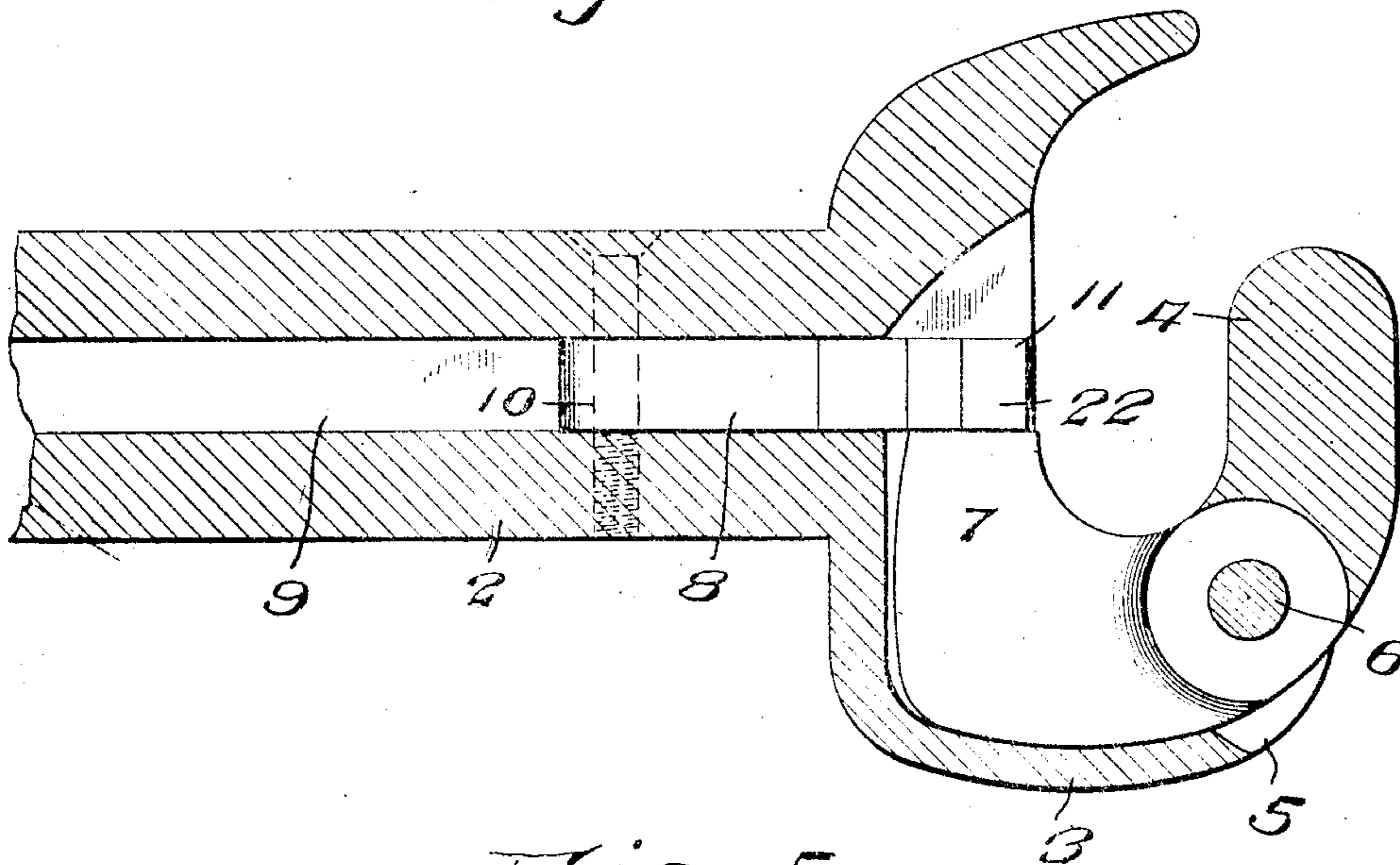
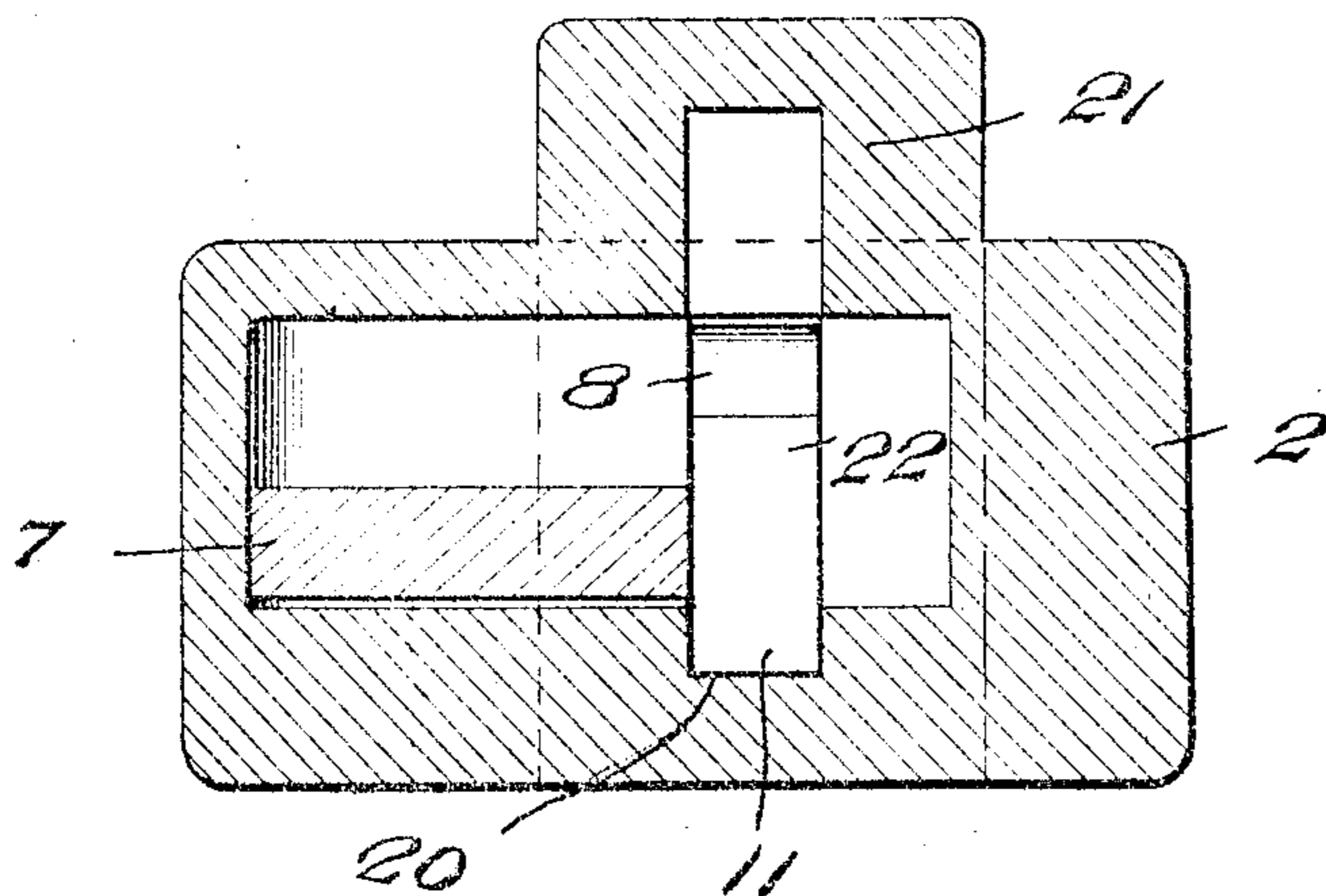


Fig. 5.



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UNITED STATES PATENT OFFICE.

ISRAEL SPARKS, OF LA FAYETTE, INDIANA.

CAR-COUPLING.

No. 888,431.

Specification of Letters Patent.

Patented May 19, 1908.

Original application filed March 30, 1907, Serial No. 365,465. Divided and this application filed August 28, 1907.

Serial No. 390,495.

To all whom it may concern:

Be it known that I, ISRAEL SPARKS, a citizen of the United States, residing at La Fayette, in the county of Tippecanoe and State of Indiana, 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.

My invention relates to new and useful improvements in car couplers, and more particularly to that class known as automatic couplers using knuckles for securing the coupling heads together and is a division of my former application filed March 30th, 1907, Ser. No. 365465, and my object is to provide a locking device for holding the knuckles in their coupled position and a further object is to provide means for manually operating said locking device.

Other objects and advantages will be hereinafter referred to and more particularly pointed out in the claims.

In the accompanying drawings which are made a part of this application, Figure 1, is a detail, longitudinal sectional view through a coupler showing my improved attachment operatively secured thereto. Fig. 2, is a sectional view as seen on line 2—2 Fig. 1. Fig. 3, is a top plan view of the locking mechanism employed in connection with the coupler. Fig. 4, is a horizontal, sectional view as seen on line 4—4, Fig. 1, and Fig. 5, is a sectional view as seen on line 5—5 Fig. 1.

Referring to the drawings in which similar reference numerals designate corresponding parts throughout the several views, 1 indicates the body of a car which may be of the usual or any preferred construction, and either a freight car or passenger coach.

Secured in the usual manner to the end of the car body is a draw-bar 2, one end of which extends beyond the car body and is provided with a head 3, said head being of the usual or well known form of automatic coupler and provided with a knuckle 4, which is pivotally secured in a cavity 5 in the head 3. The knuckle 4 is secured in the cavity 5 by means of a pivot pin 6 which extends through the upper and lower walls of the head and through the knuckle 4, that portion of the knuckle in the cavity 5 being reduced in thickness to form an arm 7 which

swings from side to side of the cavity when the knuckle is being swung into its open or closed position.

In order to hold the knuckle in its closed position a locking dog 8 is pivotally mounted in a bore 9 in the draw-bar 2 and in the rear of the knuckle 4, said dog being pivotally mounted in the bore by means of a bolt 10 which passes through the walls of the draw-bar and through an opening in the rear end of the locking dog. The forward end of the locking dog is provided with a latch 11 which is so located as to extend into the path of the arm 7, and when the knuckle is in its closed position the latch descends into the path of and engages one edge of the arm so that the knuckle will be positively held against rotation on the pivot pin 6.

When it is desired to release the couplers and allow the knuckles to readily separate, the locking dog 8 is swung on the bolt 10 and the latch end thereof elevated a sufficient distance to allow the arm 7 to freely swing below the latch, said arm being of sufficient breadth to support the locking dog in its elevated position when the knuckle is partially or entirely open and thereby prevent the locking dog from descending excepting when the knuckle is entirely closed.

The locking dog 8 is adapted to be manually operated to raise the latch out of engagement with the arm 7 and to this end a shaft 12 is provided which is rotatably mounted in suitable brackets 13 suspended from the car body 1, said shaft extending beyond the brackets and having levers 14 thereon, while the central portion of the shaft has fixedly secured thereto a bar 15 to the free end of which is pivotally secured a pitman 16, the upper end of the pitman extending through an opening in the lower face of the bar and having at its extreme upper end a trunnion 17 which in turn enters a slot 18 in one face and at the lower edge of the locking dog 8, said locking dog being provided at this point with a semi-circular projection 19 in which the slot 18 is formed so that the locking dog will not be in any manner weakened by providing the slot.

When the couplers are in their locked position the arm 7 directs lateral pressure against the latch 11, and in order to thoroughly brace the latched end of the locking dog and prevent the same from becoming bent or broken a channel 20 is formed in the

lower face of the bore 9 in which the lower edge of the latch 11 rests when the latch is in its lowered position, while the upper wall of the bore 9 is provided with a similar channel 21 to receive an extension 22 at the upper edge of the latch 11, so that when the latch is in its elevated position the extension 22 will enter the channel 21 and prevent lateral movement of the latch.

10 In order to readily introduce the trunnion 17 into the slot 18 the rear wall 23 of said slot is curved inwardly from the open end thereof, thereby allowing the trunnion 17 to swing into or out of the slot when the pitman 16 is rotated, and in introducing the pitman into coöperative relation with the locking dog the pitman is turned until the trunnion is at right angles to the position shown in Figs. 1 and 2 and in registration with the longitudinally disposed opening 24 in the draw-bar 2, when the pitman is elevated upwardly until the trunnion is in registration with the slot 18, then the pitman is again rotated and the trunnion entered in the slot 18, when by 25 securing the lower end of the pitman to the bar 15 the trunnion will be firmly held in the slot 18.

In operating the device to release the knuckle so that the cars may be uncoupled, 30 an upward pull of the levers 14 will partially rotate the shaft 12 and elevate the free end of the bar 15, this operation causing the pitman 16 to move the locking dog upwardly until the latch 11 is in a plane above the arm 7, when the knuckle thus released may swing on its pivot pin and as soon as the knuckle has started to open, the arm 7 passes below the latch which will hold the latch in its elevated position as long as the knuckle is open, 40 in which event the lever may be released as soon as the knuckle starts to open.

When two of the cars are directed together the knuckles will be rotated on their pivot pins until the arms have been removed from 45 below the latches, whereupon the weight of the locking dog, together with the levers for operating the same, will cause the locking

dog to descend by gravity and rest in the path of and engage one edge of the arm 7, the lower edge of the latch resting in the channel in the lower wall of the bore 9. 50

It will thus be seen that I have provided a very cheap and economical form of coupling device and one that will act automatically to couple the cars together. It will further be seen that I have provided convenient means for assembling the parts of the coupler together, and it will still further be seen that I have provided means for operating the locking parts of the coupler without passing 60 between the cars.

What I claim is:

The combination with a coupler having a bore therein, a knuckle pivotally secured to the coupler, and an inwardly extending arm 65 on said knuckle; of a locking dog, one end of which is pivotally secured in said bore, a latch on the free end of said locking dog to extend in the path of said arm and engage one edge thereof when the knuckle is closed, 70 the lower wall of said bore having a channel therein to receive the lower edge of the latch, a curved projection on the lower edge of said locking dog, said projection having a slot therein the rear wall of which is curved, a 75 pitman extending upwardly through an opening in the bottom of the coupler, a trunnion at the upper end of the pitman adapted to enter said slot and secure the pitman to the locking dog, a shaft rotatably mounted 80 below the coupler, a bar fixed to said shaft and pivotally secured to the lower end of the pitman and levers at each end of said shaft whereby the shaft may be manually rotated to move the pitman vertically and elevate 85 the locking dog, whereby the knuckle will be released.

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

ISRAEL SPARKS.

Witnesses:

EDITH G. BROCKENBROUGH,
PEARL TIMMONS.