

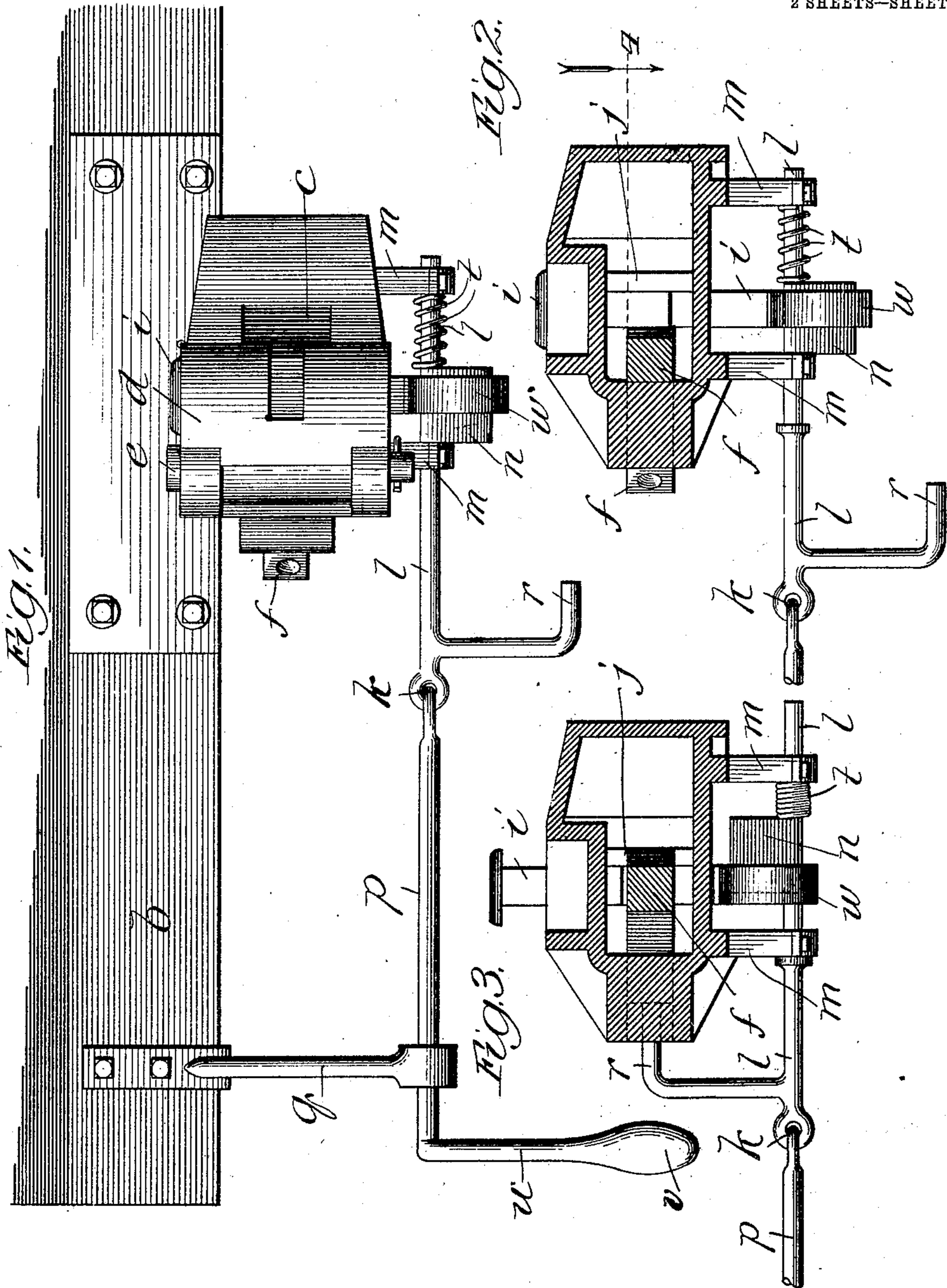
No. 821,789.

PATENTED MAY 29, 1906.

C. DIETZ.
CAR COUPLING.

APPLICATION FILED DEC. 5, 1903.

2 SHEETS—SHEET 1.



Witnesses:
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2 SHEETS—SHEET 2.

Fig. 7.

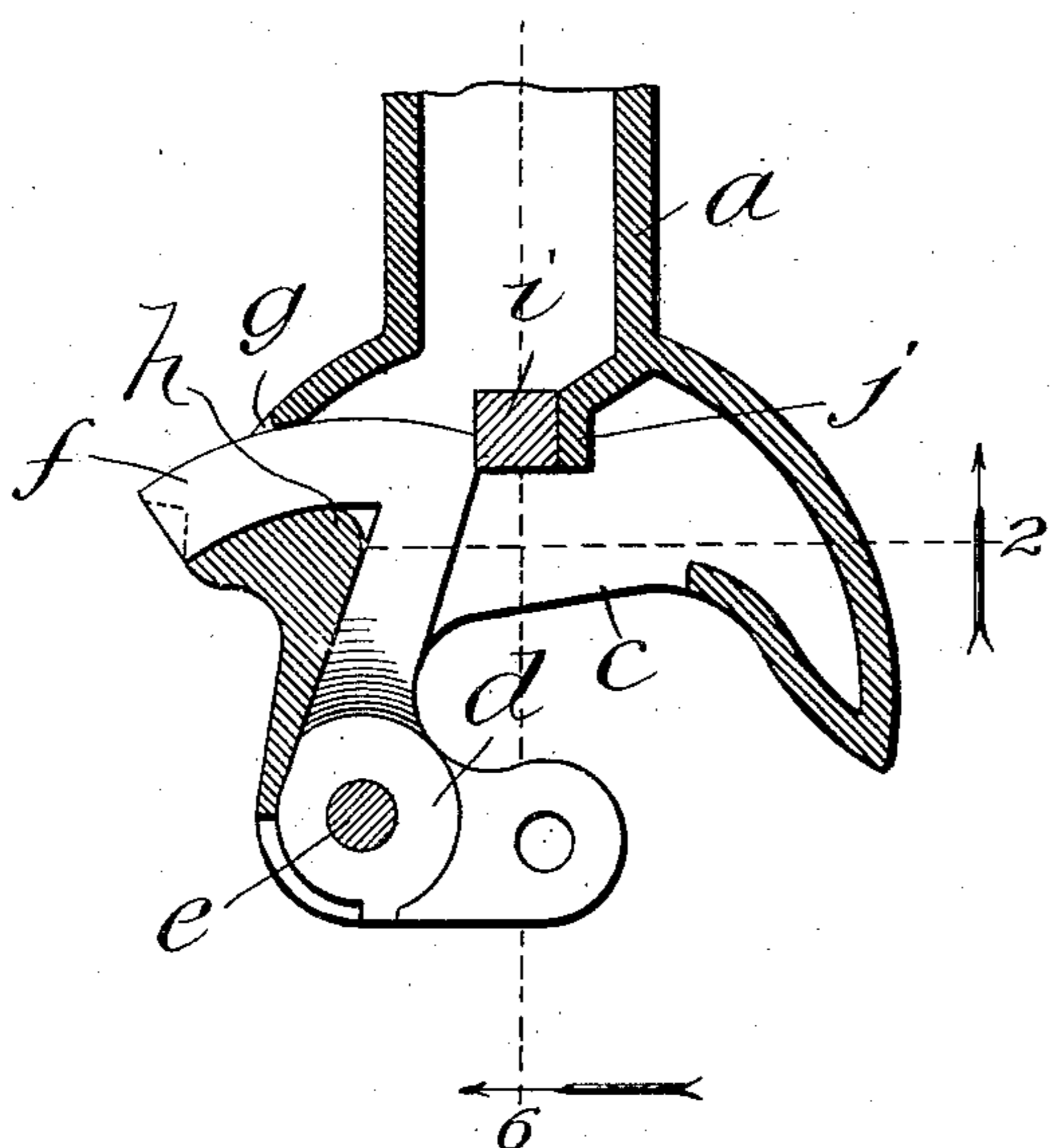


Fig. 5.

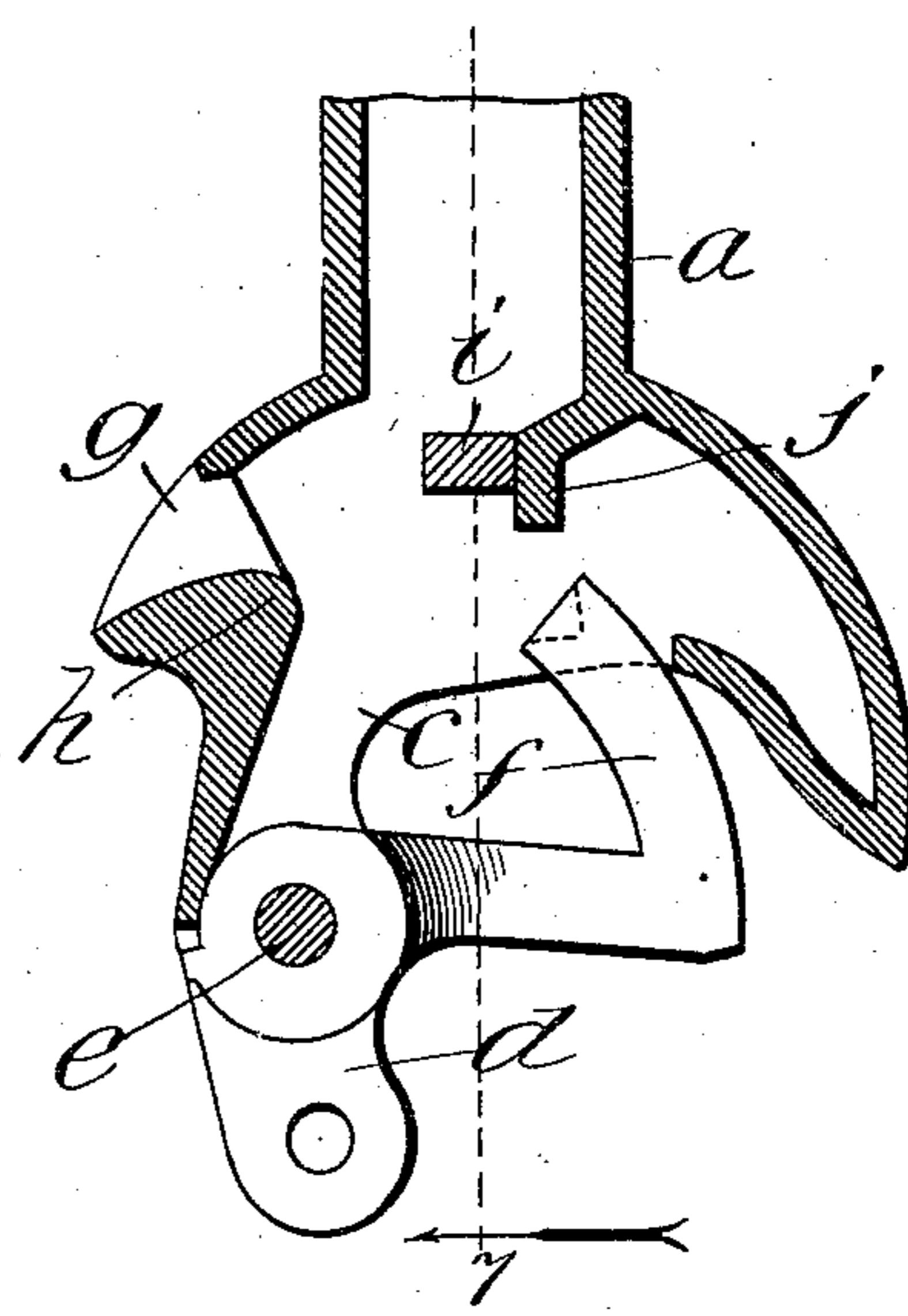
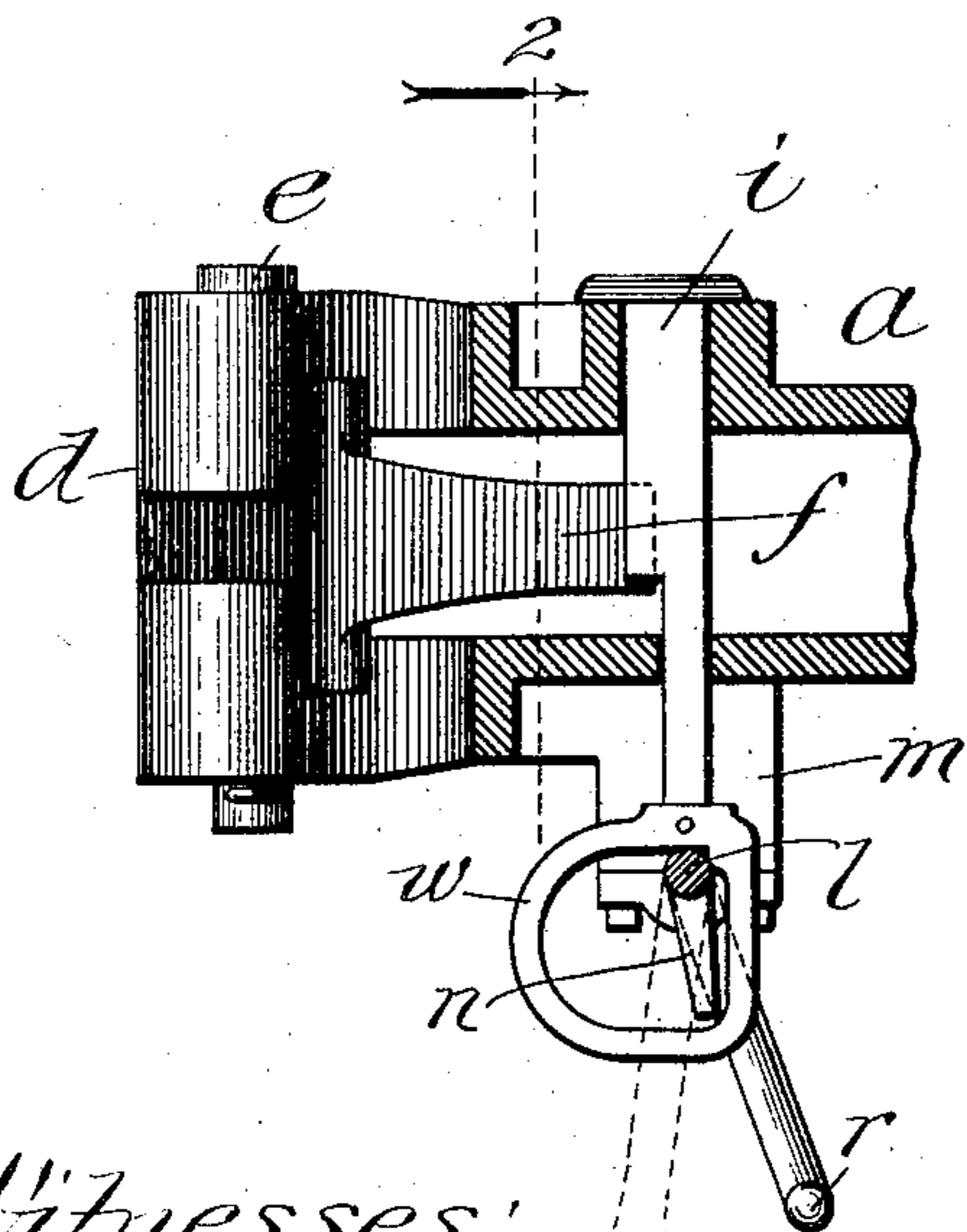
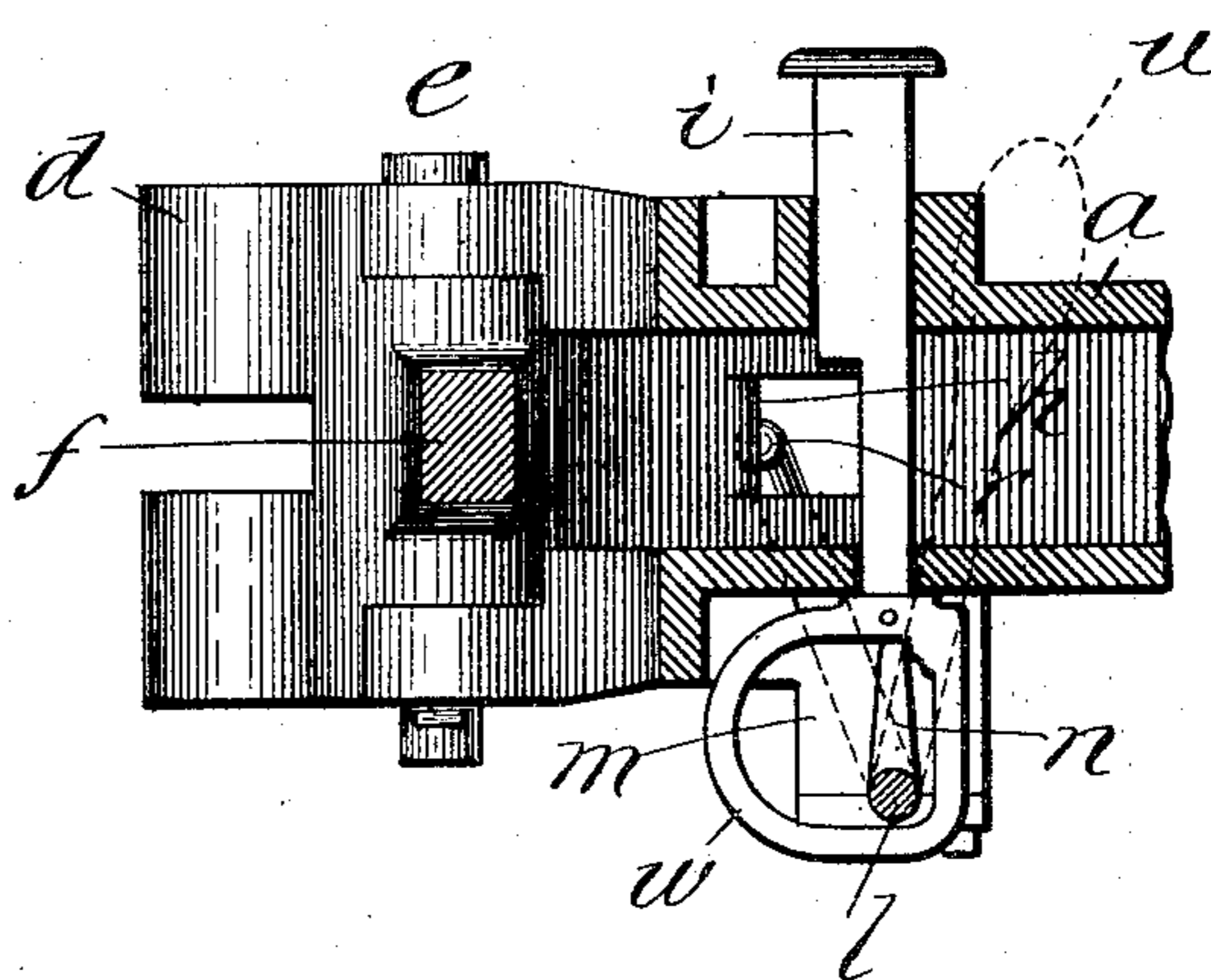


Fig. 6.



Fig².



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UNITED STATES PATENT OFFICE.

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CAR-COUPLING.

No. 821,789.

Specification of Letters Patent.

Patented May 29, 1906.

Application filed December 5, 1903. Serial No. 183,959.

To all whom it may concern:

Be it known that I, CHARLES DIETZ, 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, of which the following is a specification.

The invention relates to that class of car-couplers known as "twin-jaw" couplers of the Master Car-Builders' type, and particularly to the construction and arrangement by which the coupling parts are locked, released, and unlocked, all of which will more fully hereinafter appear.

The principal object of the invention is to provide a simple, economical, and efficient car-coupler of the twin-jaw type, with means for locking, unlocking, and swinging the coupling-knuckle to its open position.

Other and further objects of the invention will appear from an examination of the drawings and the following description and claims.

The invention consists principally in a car-coupler of the class referred to, in which there are combined a coupler-head, a coupling-knuckle pivotally mounted therein, means for locking the knuckle in coupling or closed position, and means for releasing and swinging the knuckle to open position.

The invention consists, further and finally, in the features, combinations, and details of construction hereinafter described and claimed.

In the accompanying drawings, Figure 1 is an end elevation of a portion of a car-frame and coupler as it appears when constructed in accordance with these improvements; Fig. 2, a vertical sectional elevation, taken on line 2 of Fig. 4, showing the parts in locked position; Fig. 3, a similar view showing the rock-shaft in its second position and as having moved the locking-pin to "release" position and the coupling-knuckle to open position; Fig. 4, a plan sectional view taken on line 4 of Fig. 2 looking in the direction of the arrow and showing the parts in locked position; Fig. 5, a similar view showing the parts in open position; Fig. 6, a longitudinal sectional elevation of the coupler-head and other parts, taken on line 6 of Fig. 4; and Fig. 7 a longitudinal sectional elevation taken on line 7 of Fig. 5.

In the art to which this invention relates it is well known that it is very desirable to provide some means of raising and holding a locking-pin of this type of car-coupler in re-

lease position and, further, that it is not only desirable but, indeed, necessary to provide some means for swinging the coupling-knuckle to open position which will not require the presence of a switchman or trainman between the cars. To accomplish these results, this invention is particularly designed.

In constructing a car-coupler in accordance with these improvements I provide a draw-bar *a* of any usual construction, which is mounted in position on the end of a freight-car *b* in any ordinary manner, as shown particularly in Fig. 1. This draw-bar is provided with the usual coupler-head *c* of what is known as the "twin-jaw" of Master Car-Builders' type, a type which is well known to those skilled in the art and has been adopted by the Master Car-Builders' association. The coupler-head is provided with a knuckle *d*, pivotally mounted in the space between the upper and lower walls thereof and on the usual pivot-pin *e*. The knuckle portion is provided with an L-shaped tail portion *f*, which is adapted when in closed position to extend out through a perforation *g* in the side wall of the coupler-head. The forward wall, which assists in forming this perforation, is L-shaped, as at *h*. In other words, it is thickened so as to project beyond the usual side wall of the head and is L-shaped on its inner surface to correspond with the tail of the knuckle, so that should the pivot-pin break the pulling strains would be transferred directly from such pin to the coupler-head until the train was stopped, thus averting disaster to the train and injury to the employees.

To provide means for holding and locking the knuckle in closed position, a locking-pin *i* is provided and movably mounted in perforations in the upper and lower walls of the coupler-head, so as to be capable of movement in a vertical plane. This locking-pin is further arranged to abut against a retaining wall or lug *j* on the interior of the head; so that as the tail of the coupling-knuckle contacts the body portion of the locking-pin it forces it against this lug or retaining-wall and transfers the strain directly, relatively speaking, to an immovable body capable of withstanding a large amount of stress and strains.

It is desirable to provide means for moving this coupling-pin to release position and swinging the coupling-knuckle to open position. To accomplish this, a two-part rock-

shaft is provided and pivotally secured together at *k*. One part, *l*, of this rock-shaft is rotatably mounted in bearings *m* on the under surface of the coupler-head and is provided with a cam or eccentric portion *n*, adapted to contact or engage with the lower part of the locking-pin, as shown particularly in Fig. 7, so that during the rotary movement of the rock-shaft it will be moved to release position, as shown in said figure. The second portion, *p*, of this two-part rock-shaft is rotatably mounted in a bracket or arm *q* on the end sill of the car-frame, so that the rock-shaft is partially mounted on the coupler-head and partially on the framework of the car. This rock-shaft, as seen in these figures, has a limited movement in a longitudinal direction—that is, in a direction parallel with its axis—and is provided with an L-shaped prong *r*, extending laterally therefrom and so arranged that as the rock-shaft is swung in one direction it raises the locking-pin to release position and its prong is brought into alinement with the exposed portion of the L-shaped tail of the coupler-knuckle. In this position the rock-shaft may be pushed inwardly (the knuckle now being unlocked) and swing the coupling-knuckle to open position, as shown in Figs. 3 and 5.

A helical coil-spring *t* is arranged between the cam portion of the rock-shaft and one of its bearings, so as to force and normally hold the rock-shaft at its outer limit of motion. This rock-shaft is further provided at its extreme outer end, which is at one side of the car, with an operating-handle *u*. This handle may be provided with a weight *v*, which assists in throwing the rock-shaft to and holding it at its lower limit of motion, as shown in Figs. 1 and 2.

To provide means that will hold the locking-pin in its locking position and against displacement—that is, against raising to release position—and that will also hold it in its release position until the necessary coupling action takes place—the locking-pin is provided with a lower perforated portion *w*, which I prefer to term a “yoke” portion, and through which the cam portion of the rock-shaft is passed. This yoke portion is pinned to the lower edge of the coupling-pin, so that it may be readily removed or replaced whenever desirable or necessary.

When the parts are in their locking position, as shown in Fig. 6, it will be seen that the cam portion *n* prevents the raising or unlocking movement of the pin, and as the weight of the parts tends to keep the cam portion in the position shown, it will be readily seen that no amount of shocks or jars will affect the locking-pin. It will also be seen that when the cam portion has raised the locking-pin to release position it is also in position to prevent the dropping of said locking-

pin until the coupling action takes place or until the operator throws the handle *u* to its down position.

The principal advantages incident to a car-coupler constructed in accordance with these improvements are, first, that the locking-pin may be operated and the coupling-knuckle released and swung to open position at any time without requiring the presence of a trainman between the cars; and, second, that the parts are so constructed and arranged that no unlocking of the locking-pin is likely to take place until the operator swings the rock-shaft lever to its upper position, all of which will be understood and appreciated by those skilled in the art.

I claim—

1. In a car-coupler of the class described, the combination of a coupler-head, a coupling-knuckle pivotally mounted therein, a vertically-arranged and movable locking-pin for holding and locking the coupling-knuckle in closed position, and a rock-shaft journaled in the coupling-head for moving the pin to release position and locking it in locked position, substantially as described.

2. In a car-coupler of the class described, the combination of a coupler-head, a coupling-knuckle pivotally mounted therein, a vertically-arranged and movable locking-pin for holding and locking the coupling-knuckle in closed position, a yoke portion on said coupling-pin, and a rock-shaft provided with a cam portion passed through said yoke portion for moving the pin to release position and locking it in locked position, substantially as described.

3. In a car-coupler of the class described, the combination of a coupler-head, a coupling-knuckle pivotally mounted therein, a locking-pin for holding and locking the coupling-knuckle in closed position, a yoke portion removably secured to the lower part of the coupling-pin, and a rock-shaft provided with a cam portion passed through the yoke portion and having a rotary and longitudinal movement for moving the locking-pin to release position, locking it in locked position and swinging the coupling-knuckle to open position, substantially as described.

4. In a car-coupler of the class described, the combination of a coupler-head, a coupling-knuckle pivotally mounted therein, a vertically-movable locking-pin, means comprising a single rock-shaft for moving the locking-pin to locking and releasing positions and for swinging the knuckle to open position, and means for locking the locking-pin in releasing and locking positions.

5. In a car-coupler of the class described, the combination of a coupler-head, a coupling-knuckle pivotally mounted therein, a vertically-arranged and movable locking-pin for holding and locking the coupling-knuckle in closed position, and a rock-shaft having a

rotary and longitudinal movement and adapted to operatively engage the coupling-knuckle for moving the pin to release position and swinging the coupling-knuckle to open position, substantially as described.

6. In a car-coupler of the class described, the combination of a coupler-head, a coupling-knuckle pivotally mounted therein, a vertically-movable locking-pin for holding and locking the coupling-knuckle in closed position, and a rock-shaft journaled in the coupling-head having a rotary and longitudinal movement engaging with the locking-pin at the lower portion thereof for raising the same to release position during its rotary movement and swinging the coupling-knuckle to open position during its longitudinal movement, substantially as described.

7. In a car-coupler of the class described, the combination of a coupler-head provided with an opening in its side wall, a coupling-knuckle pivotally mounted therein and provided with a tail portion extending back and adjacent to the perforation in the side wall of the coupler-head, a vertically arranged and movable locking-pin for locking and holding the coupling-knuckle in closed position, a rock-shaft journaled in the coupling-head having a rotary and longitudinal movement for moving the locking-pin to release position during its rotary motion and adapted to contact the tail of the coupler-knuckle through the perforation in the side wall of the coupler-head and swing it to open position during its longitudinal movement, substantially as described.

8. In a car-coupler of the class described, the combination of a coupler-head provided with an opening or perforation in its side wall and an L-shaped wall on such side portion forming one of the walls to said perforation or opening, a coupling-knuckle pivotally mounted in the coupler-head and provided with an L-shaped tail portion extending through the perforation of the side wall of the coupler-head and adapted to engage the L-shaped wall thereof, a vertically-arranged and movable locking-pin for holding the coupling-knuckle locked in closed position, a longitudinally-movable rock-shaft journaled in the coupling-head arranged to engage with the locking-pin and move the same to release position during its rotary movement, and to swing the coupler-knuckle to open position

during its longitudinal movement, substantially as described.

9. In a car-coupler of the class described, the combination of a coupler-head provided with an opening or perforation in its side wall and an L-shaped wall on such side portion forming one of the walls to said perforation or opening, a coupling-knuckle pivotally mounted in the coupler-head and provided with an L-shaped tail portion extending through the perforation of the side wall of the coupler-head and adapted to engage the L-shaped wall thereof, a vertically-arranged and movable locking-pin for holding the coupling-knuckle locked in closed position, a longitudinally-movable rock-shaft partially mounted on the coupler-head and partially in the car-frame extending out to the side portion of the car-frame and made in two parts pivotally secured together and adapted to move the locking-pin to release position during its rotary movement and swing the coupling-knuckle to open position during its longitudinal movement, substantially as described.

10. In a car-coupler of the class described, the combination of a coupler-head provided with an opening or perforation in its side wall and an L-shaped wall on such side portion forming one of the walls to said perforation or opening, a coupling-knuckle pivotally mounted in the coupling-head and provided with an L-shaped tail portion extending through the perforation of the side wall of the coupler-head and adapted to engage the L-shaped wall thereof, a locking-pin for holding the coupling-knuckle locked in closed position, a longitudinally-movable rock-shaft partially mounted in the coupler-head and on the car-frame and extending out to the side portion of the car-frame and made in two parts pivotally secured together to move the locking-pin to release position during its rotary movement and swing the coupling-knuckle to open position during its longitudinal movement, and spring mechanism for moving and normally holding the rock-shaft at its outer limit of longitudinal movement substantially as described.

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Witnesses:

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ANNIE C. COURTENAY.