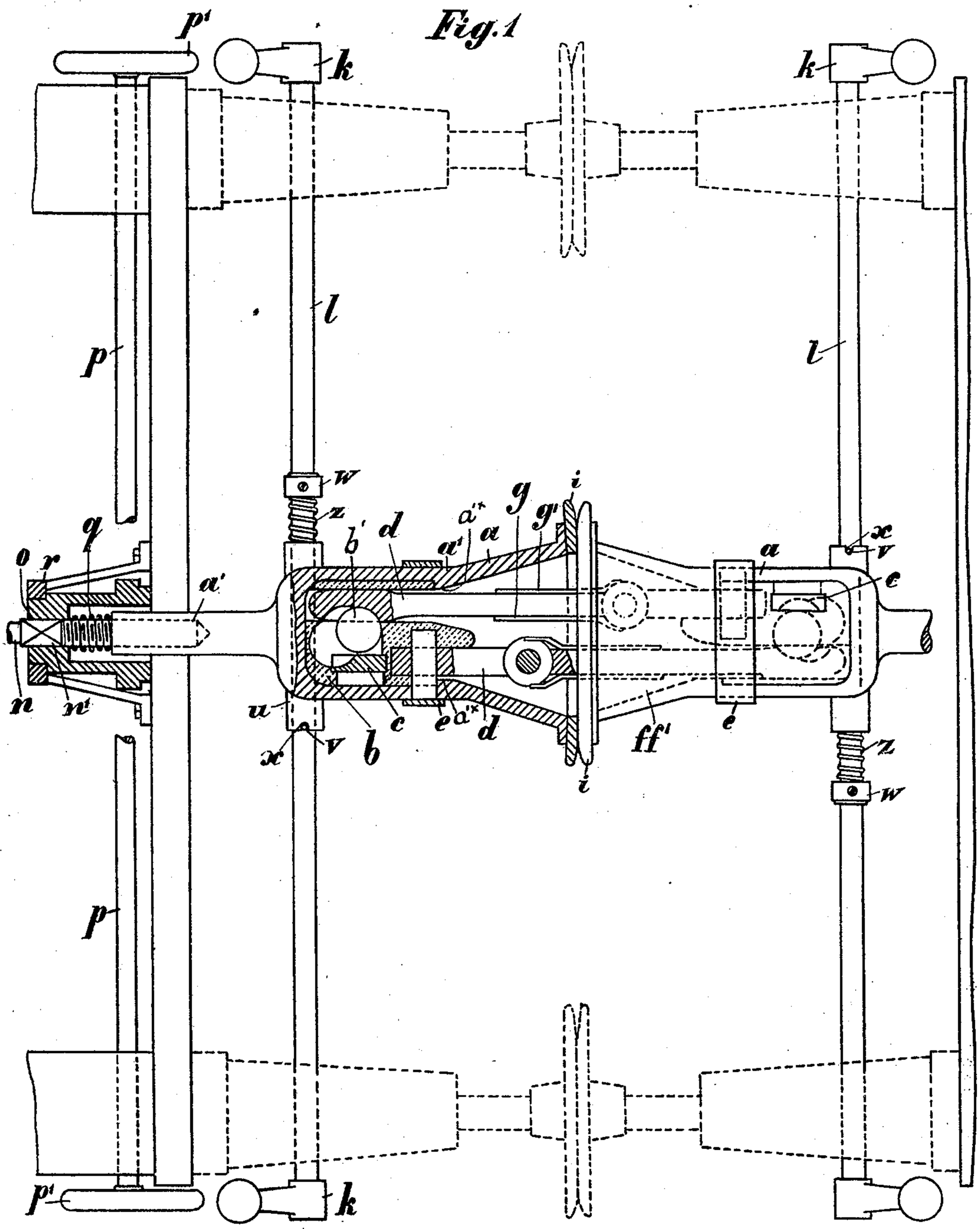
(No Model.) 2 Sheets—Sheet 1.

H. F. OBERLÄUTER.

AUTOMATIC BALL COUPLING FOR RAILWAY WAGONS.

No. 587,061. Patented July 27, 1897.

Fig. 1



Witnesses
Rudolph Fricke
Eduard Loeper

Inventor
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(No Model.) 2 Sheets—Sheet 2.

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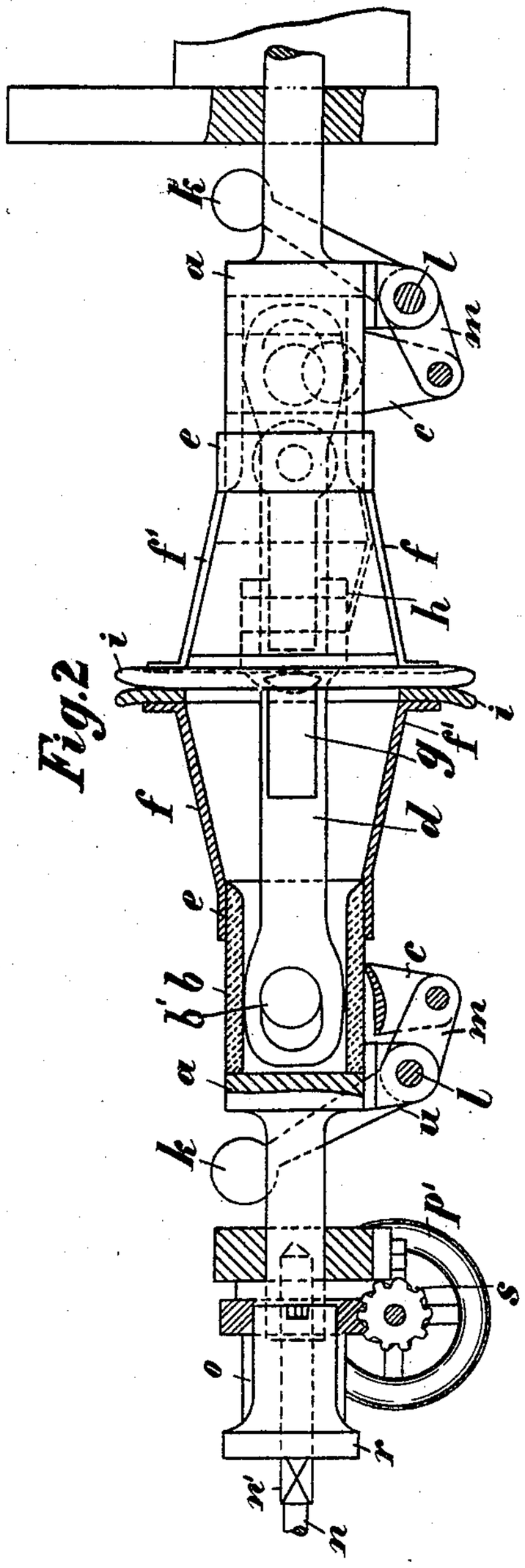
Fig. 2



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UNITED STATES PATENT OFFICE.

HUGO FELIX OBERLÄUTER, OF LEIPSIC, GERMANY.

AUTOMATIC BALL-COUPLING FOR RAILWAY-WAGONS.

SPECIFICATION forming part of Letters Patent No. 587,061, dated July 27, 1897.

Application filed July 11, 1896. Serial No. 598,851. (No model.)

To all whom it may concern:

Be it known that I, HUGO FELIX OBERLÄUTER, merchant, of 2 Schlossgasse, Leipsic, in the Kingdom of Saxony, Empire of Germany, have invented new and useful Improvements in Automatic Ball-Couplings for Railway-Wagons, of which the following is a specification.

This invention relates to an automatic ball-coupling for railway-carriages and the like which can be employed as a simple coupling or as a buffer and coupling combined.

In the accompanying sheet of drawings, Figure 1 is a sectional plan, and Fig. 2 a sectional elevation, of a coupling constructed in accordance with my invention.

The coupling consists of a fork *a*, which serves as a draw-bar or as a buffer-bar, which can be provided with draw and buffer springs in the usual well-known way. In the fork *a* is fixed a casting *b*, which serves as a path for a ball *b'*, as will be hereinafter described, as a guide for the coupling-releasing slide *c*, and partly as a holder for the tongue-piece *d*. The two projections or shoulders *a'** in the fork *a* prevent the casting *b* from being drawn out, and the said casting is secured against movement sidewise by means of a ring or band *e*, surrounding the fork *a*.

In order to guide the tongue-pieces *d* with certainty into the slots of the opposite coupling, two plates *f f'* are provided, which, together with the fork *a*, form a funnel with a large opening directed away from the carriage. The tongue-piece *d* is provided with a universal joint and is held sidewise by two springs *g g'* and horizontally by a spring *h*. (See Fig. 2.)

When the coupling is to serve also as a buffer, a buffer-plate *i* is fixed in front of the funnel formed by the fork *a* and the plates *f f'*. The casting *b* carries in a slot the ball *b'*, which serves as the coupling member and which projects about one-third of its diameter out of the slot when the coupling is connected and enters the corresponding groove or recess in the tongue-piece *d*. The slot itself is so formed that when the coupling of two carriages is being effected the ball *b'* is pushed backward by the tongue-piece *d* and gradually enters wholly into the casting *b*, so that the tongue-piece *d* can easily slide past the ball *b'*. In order to secure the immediate falling back of the ball directly the groove or recess in the tongue-piece *d* comes opposite the ball, the slot in the casting *b* is made oblique, as shown. Immediately the buffer-springs press the two carriages away from one another the ball enters to the extent of one-third of its diameter into the groove in the tongue-piece *d* and the two carriages are thereby securely coupled together.

The uncoupling is effected by means of a hand-lever *k*, the shaft *l*, and a crank *m*, by which the slide *c* can be raised in the casting *b* high enough to permit the ball *b'* to enter a recess in the said slide and thereby release the tongue-piece *d*. The slide *c* is easily moved and is guided in the casting *b*. It has turned out part of the size of the ball, and of a depth corresponding to the distance the ball enters the groove in the tongue-piece *d* when the coupling is connected. When the hand-lever *k* is actuated, the coupling is released and the carriages can be separated. The lever *k* is then turned back, so that the coupling of the carriages can be effected again automatically.

For securing the slide *c* in position so that uncoupling should not occur through shaking or jolting a stop mechanism is arranged on the shaft *l*, which consists of a collar *w*, fixed on the shaft *l*, a spring *z*, and a feather *v*, which latter takes into the notch *x* in the bearing *u* of the shaft *l*. By pushing or drawing the shaft longitudinally the feather *v* is removed from the notch *x*, and the shaft can then be turned to effect the uncoupling. When the shaft is turned back into its normal position, the spring *z* moves it back longitudinally until the feather *v* takes again into the notch *x* and prevents the shaft from turning until it is again moved longitudinally, so as to free the feather *v* from the notch *x*.

Another apparatus (shown in the drawings) serves for shortening or lengthening the coupling; but this is only necessary in cases where the ordinary arrangement of buffers is retained, and its object is to press the buffers in fast trains firmly together. Where the coupling itself is constructed to act as a buffer also, as hereinbefore described, the lengthening and shortening apparatus is superfluous.

This apparatus consists of a wheel p', mounted on a shaft p, on which is fixed the worm s, which gears with a worm-wheel formed on or secured to a spring-case o, through which a square part n' of the draw-bar n passes. By turning the wheel p' the draw-bar n is screwed farther into or out of the bar a', so as to shorten or lengthen, or tighten or slacken, the coupling. The fixed ring r, which is fixed to the buffer-bar, serves as a bearing for the spring-case o. The object of the spring q is to prevent displacement of the coupling.

It is obvious that this ball-coupling apparatus can also be employed for the coupling of ships, machinery-shafting, and other objects.

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

An automatic ball-coupling each half of which is provided with a fork a, a casting b slotted obliquely at its side and provided with a ball b', and a tongue-piece d jointed to the coupling by a universal joint and hollowed out at its front end to receive the coupling-ball b' combined and operated substantially as described.

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

HUGO FELIX OBERLÄUTER.

Witnesses:

RUDOLPH FRICKE,

EDUARD LOEPER.