

(No Model.)

G. W. SMILLIE.

CAR COUPLING.

No. 297,305.

Patented Apr. 22, 1884.

Fig. 1.

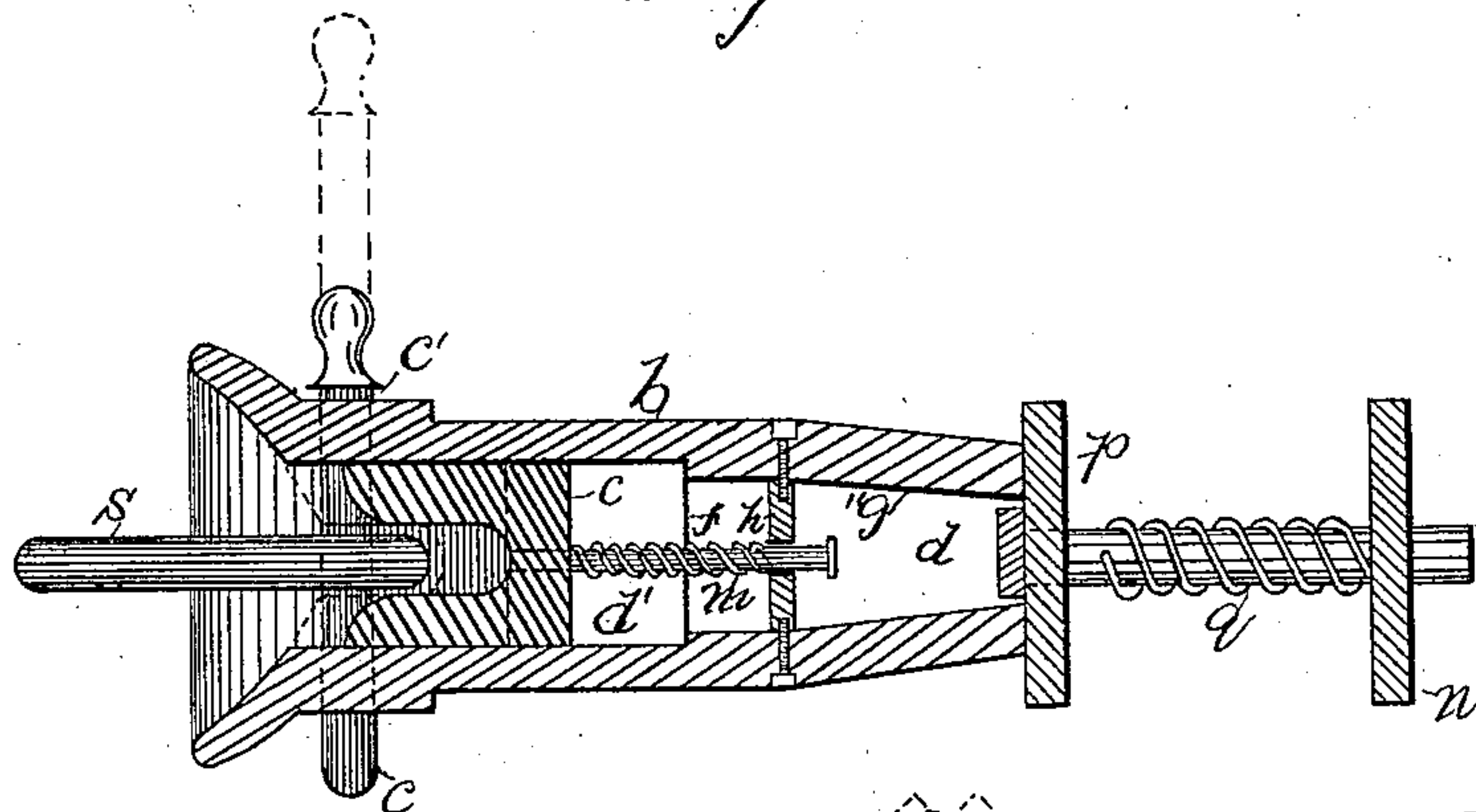


Fig. 2.

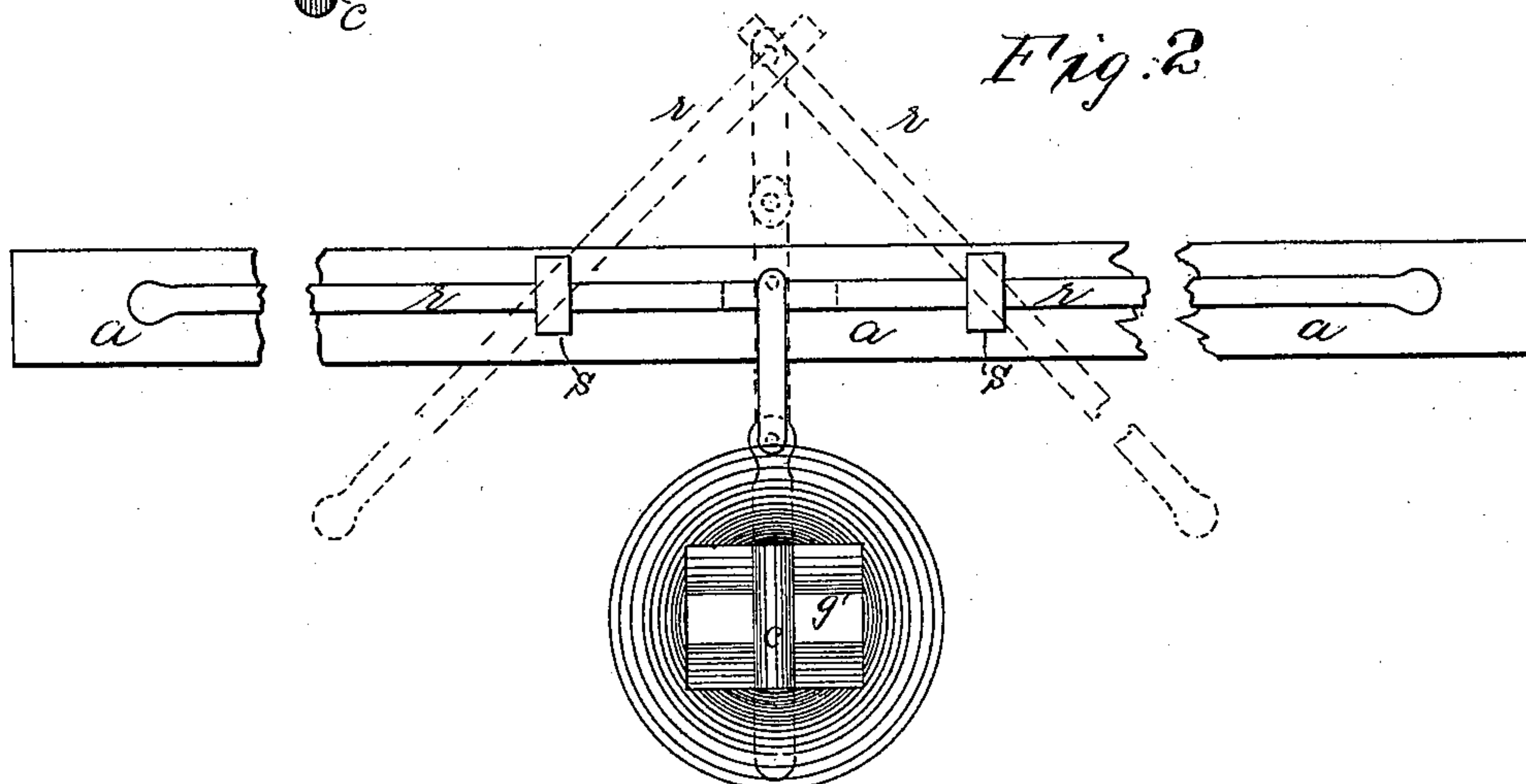
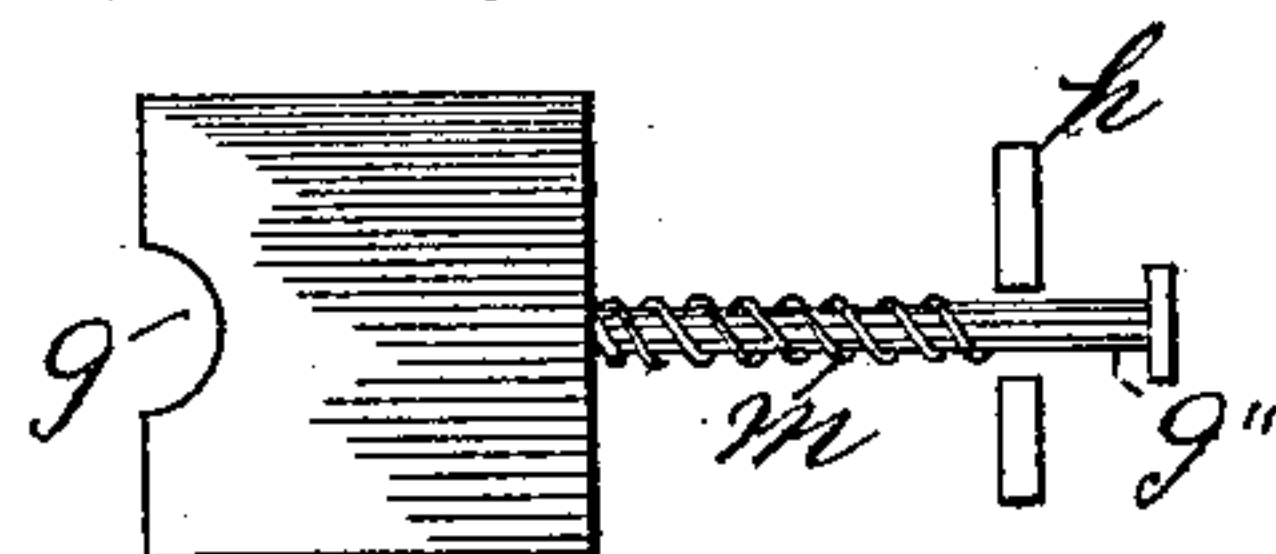


Fig. 3.



WITNESSES

Geo. H. Harvey
Edward E. Ellis

INVENTOR

George W. Smillie
per O. E. Duff
Attorney

UNITED STATES PATENT OFFICE.

GEORGE W. SMILLIE, OF NEWARK, NEW JERSEY.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 297,305, dated April 22, 1884.

Application filed September 17, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. SMILLIE, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Automatic 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to provide a more efficient coupling for railroad-cars; and it consists in the combination and arrangement of parts, substantially as will be hereinafter set forth, and finally embodied in the claims.

Referring to the accompanying drawings, in which similar letters of reference indicate like parts in each of the several figures, Figure 1 is a vertical longitudinal section of my device, Fig. 2 is a front elevation of the same, and Fig. 3 is a detailed plan of one portion thereof, all of which will be more fully described.

In carrying out the invention I construct, in connection with the platform, or the front and rear cross end joists, *a*, of the frame of a railway-car, a funnel-shaped bumper or buffer, *b*, adapted to cause the coupling-link secured to one car to pass, when it engages with the bumper, to the center of the same, as will be understood. Said bumper is vertically perforated to receive the coupling-pin *c*, which pin is adapted to lie across the apex of the funnel-shaped opening. Behind the funnel-shaped portion of the bumper the same is cylindrically shaped, or is provided with a longitudinal chamber, *d*, in which works a spring-actuated plunger, *e*, adapted to work backward and forward in said chamber, or the portion thereof lettered *d'*, the backward progression of said plunger being limited by the shoulder *f*. Said plunger is provided with a vertical pin-recess, *g*, (shown more clearly in Fig. 3,) adapted to engage with the pin, and a transverse link-recess, *g'*, adapted to receive the end of the link, and yet allow the plunger to bear against the coupling-link to hold the

same up steadily in position. Said plunger is provided with a rod, *g''*, which has a bearing in the stationary partition *h*. Said rod carries a spring, *m*, which bears against said plunger *e* and partition *h*, and has a normal tendency to throw the plunger outward or toward the funnel-shaped head.

The bumper *b* is secured on the car in an appropriate manner to have a sliding action, such as is now common to bumpers, and to this effect I provide a bolt, *o*, which has a stationary bearing in a fixture, *n*, of the car, which bolt passes through the rear wall, *p*, of the bumper and provides a bearing for the same.

Between the bumper and fixture *n* is arranged a spring, *q*, which takes from the said bumper the force of the concussion of the cars when the latter come together. The pins *c* are operated by the levers *r r*, which are fulcrumed in sliding blocks *s s*. These blocks or guides are adapted to work in a longitudinal slot in the face of the beam *a*, so that when the levers *r r* are raised or lowered the fulcrumed blocks slide in said slot, and with the levers are thus held in position, while all danger from coupling or uncoupling is avoided.

The operation of the device is substantially as follows: By raising the pin *c* by means of the lever the plunger is automatically thrown forward beneath the end of the pin-perforation *c'*, so that when the hand is removed from the lever the pin rests in said perforation upon the plunger. When the link *s*, attached to the next car in the train, strikes the bumper *b*, the funnel-shaped head guides the extremity thereof toward the center, when it strikes the plunger *e* and pushes it backward, thus uncovering the pin-perforation and allowing the said pin to fall. The link lying in the recess *g'* allows the pin to fall through the link, and thus automatically couples the cars together. While the above action is taking place, the engaging bump strikes the bumper *b*; but the force or jar of the engagement is to a great extent broken by the spring *q*. By this construction it will be seen that the presence of a person between the cars is altogether unnecessary.

Having thus described my invention, what I claim is—

1. The combination, with the funnel-shaped buffer *b*, having the chamber *d* therein and pin-perforation therethrough, of the spring-actuated plunger working in said chamber, adapted to automatically cover the said pin-perforation when the said pin is withdrawn, and with the beam having the longitudinal-slot-sliding blocks and levers, whereby the pins are withdrawn, substantially as herein set forth.

2. The repressible bumper *b*, having the funnel-shaped head, and having the chamber *d* and pin-perforation therein, and having the spring-actuated plunger *e*, provided with the link-opening and the pin *c*, and levers working in sliding fulcrum-blocks, all said parts being arranged and operating substantially as set forth.

3. A car-coupling of the character described, provided with the slotted beam *a*, the sliding fulcrumed blocks *s s*, and the levers

r r, arranged and operating in the manner substantially set forth.

4. The combination, in a car-coupling, of a spring-actuated plunger (having a concave outer end) adapted to hold the coupling-pin up when the cars are uncoupled, and a draw-head having a mouth flaring at all sides, and a central aperture adapted to allow the link, when the pin is inserted, the requisite lateral and vertical swing, and at the same time to hold it in a position to automatically engage and couple with an opposite draw-head when the cars are brought together, as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 6th day of September, 1883.

GEO. W. SMILLIE.

Witnesses:

CHARLES H. PELL,
OLIVER DRAKE.