

(No Model.)

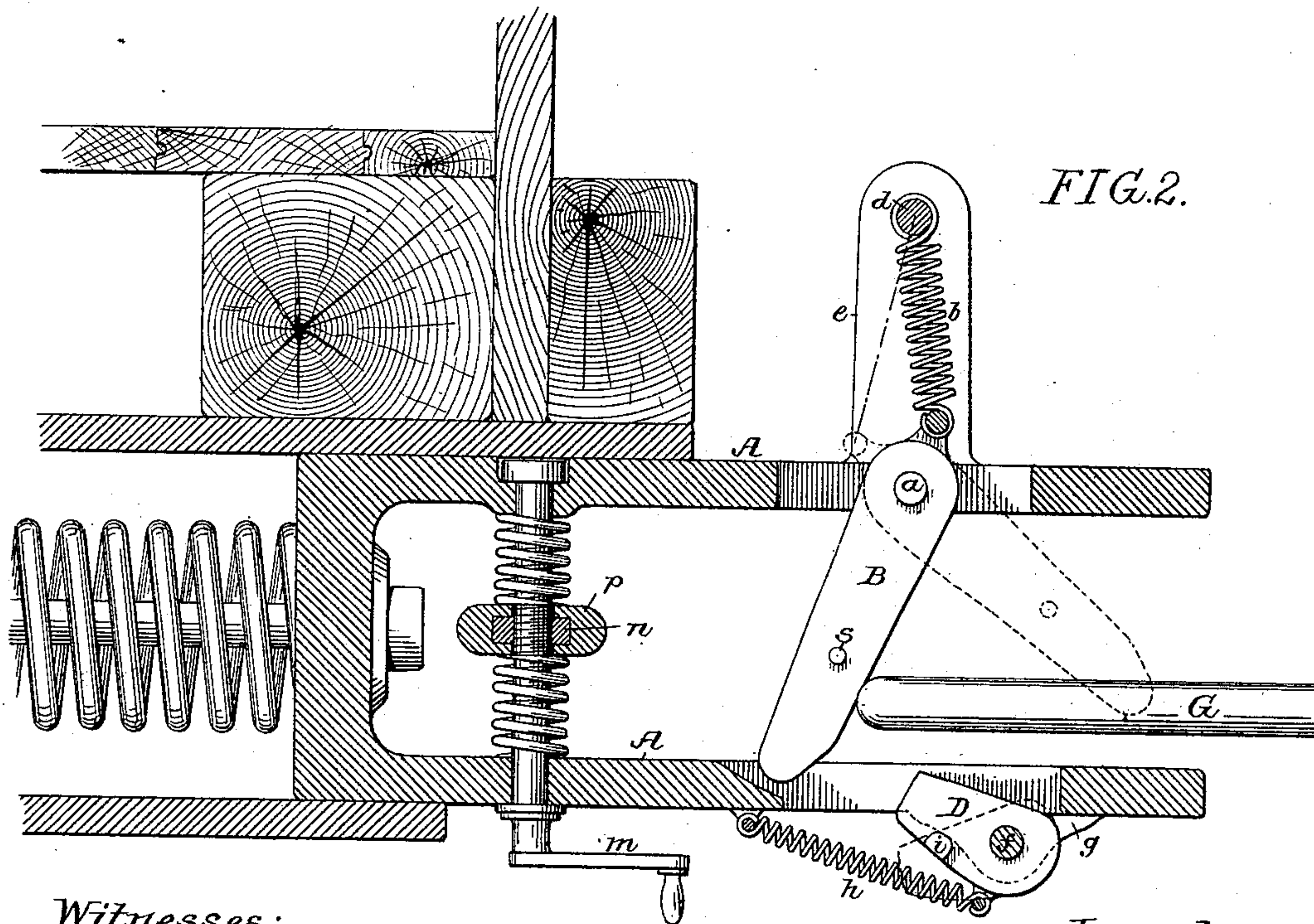
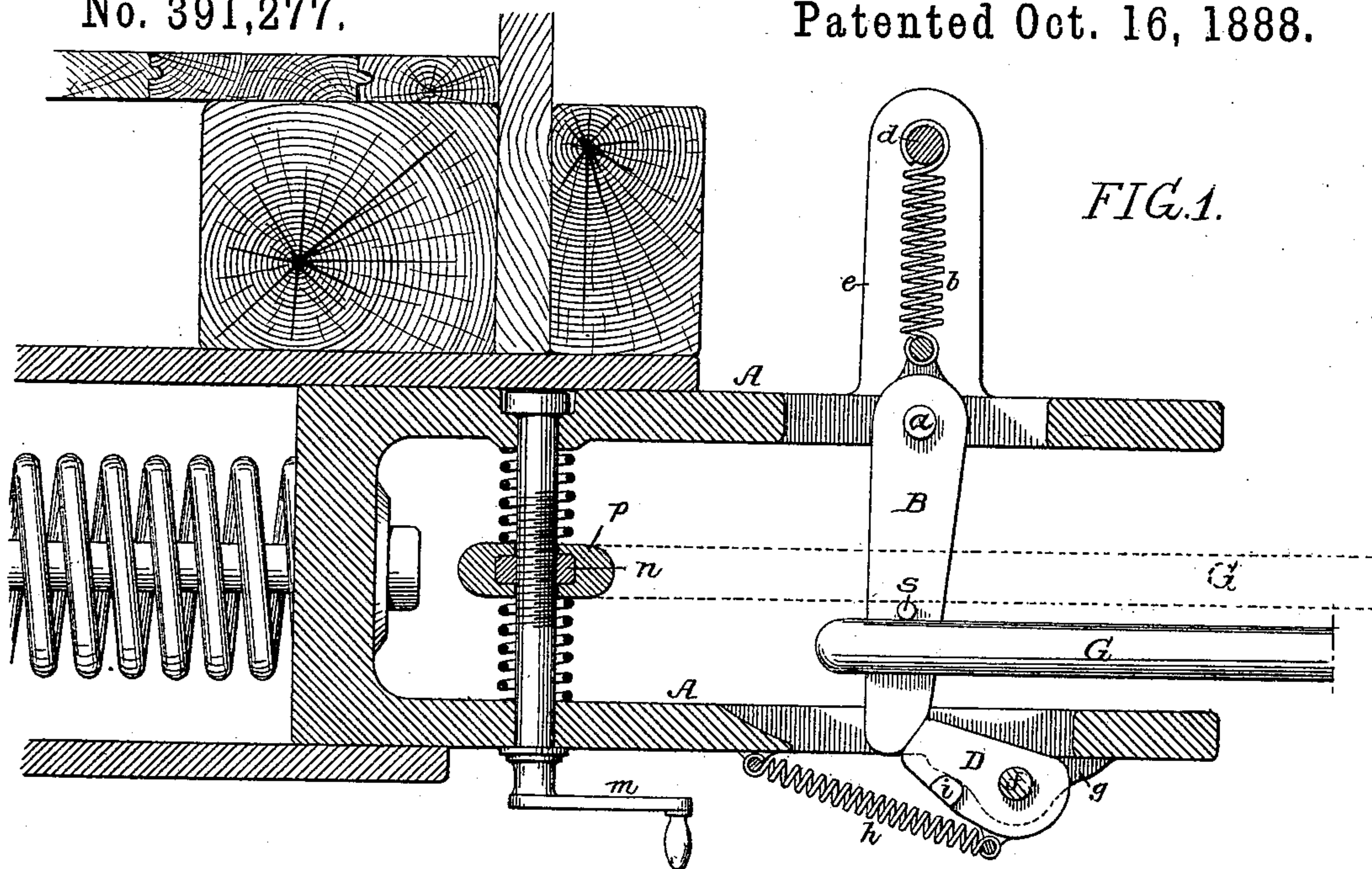
2 Sheets—Sheet 1.

D. SCHOFIELD.

CAR COUPLING.

No. 391,277.

Patented Oct. 16, 1888.



Witnesses:

John E. Parker  
David S. Williams

Inventor:

Daniel Schofield  
by his Attorneys  
Howson & Howson

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FIG. 3.

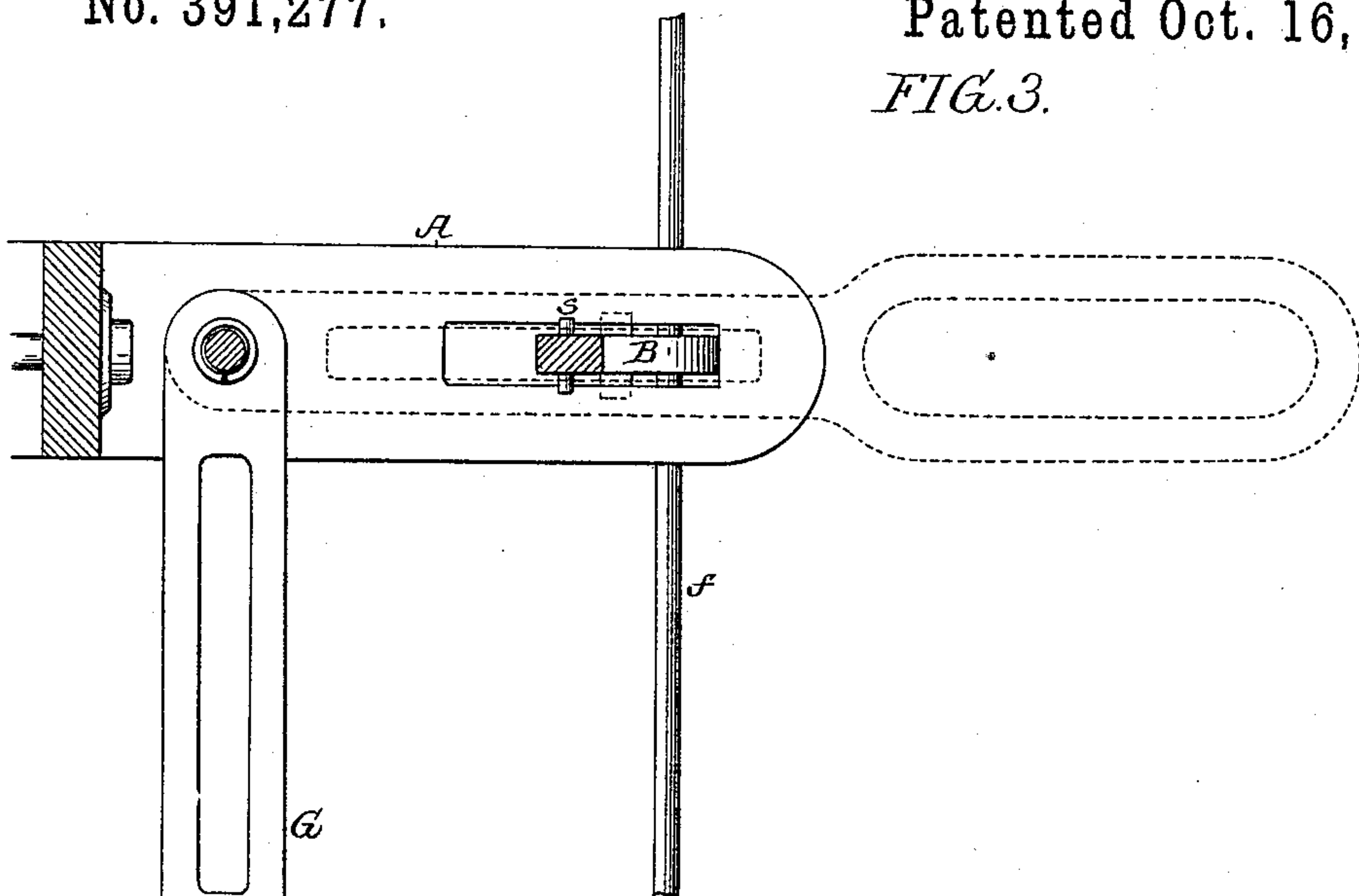
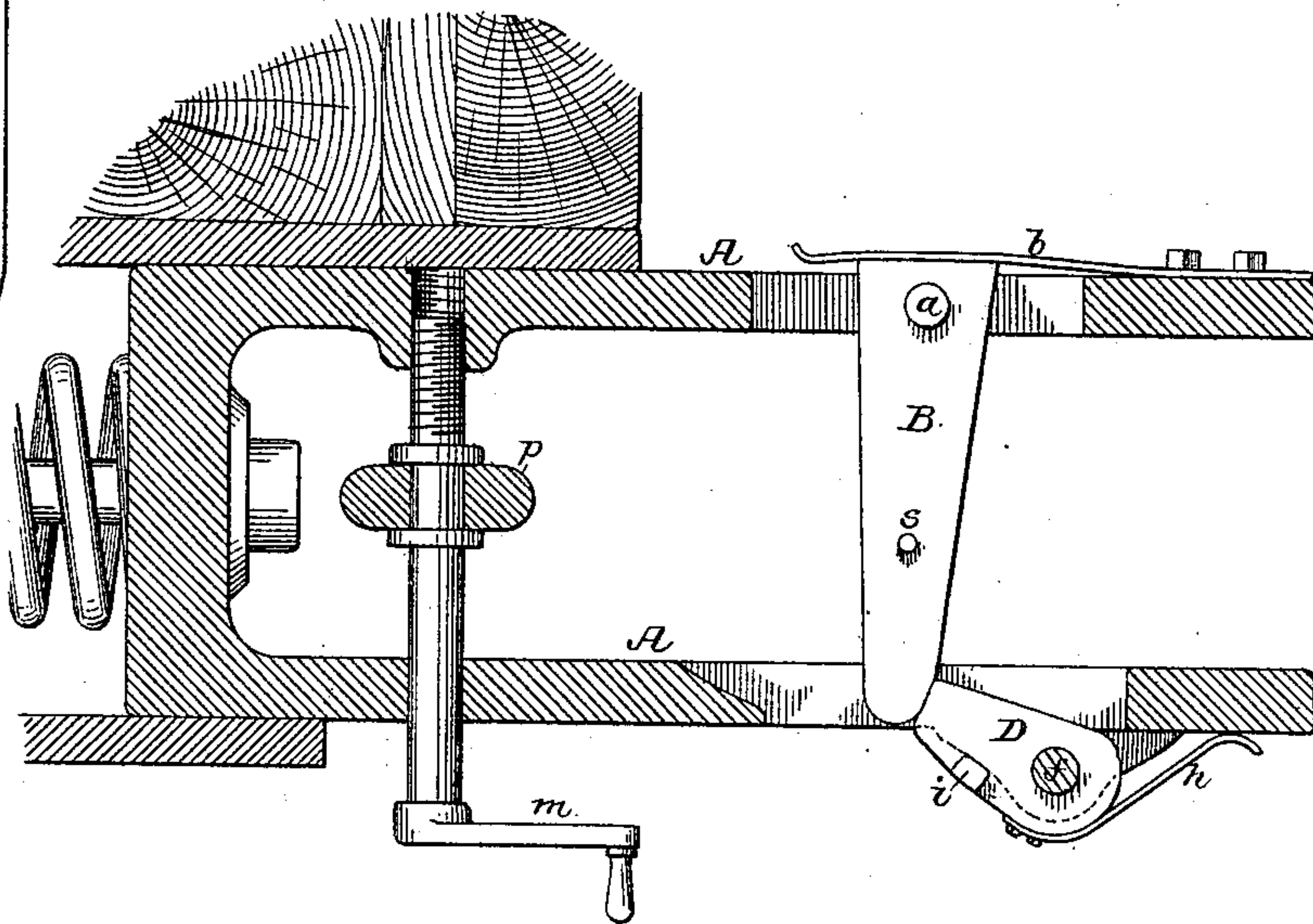


FIG. 4.



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# UNITED STATES PATENT OFFICE.

DANIEL SCHOFIELD, OF CAMDEN, NEW JERSEY.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 391,277, dated October 16, 1888.

Application filed July 2, 1888. Serial No. 278,823. (No model.)

*To all whom it may concern:*

Be it known that I, DANIEL SCHOFIELD, a citizen of the United States, and a resident of Camden, New Jersey, have invented certain  
5 Improvements in Car-Couplings, of which the following is a specification.

My invention relates to that class of car-couplings which are adapted to couple cars having draw-heads of different heights, and in  
10 which the coupling or uncoupling of the cars is effected without the necessity of the brakeman going between the cars, my invention consisting of certain details of construction, fully described and specifically claimed hereinafter.

15 In the accompanying drawings, Figure 1 is a sectional view of part of the frame of a railroad-car having a draw-head provided with coupling devices in accordance with my invention, said devices being shown as in engage-  
20 ment with the projecting link of the adjoining car. Fig. 2 is a similar section showing by full lines the position of the parts when the coupling is being effected, and by dotted lines the position when uncoupling. Fig. 3 is a sec-  
25 tional plan view of the coupling on a reduced scale, and Fig. 4 is a view illustrating a modified construction of some of the parts.

A represents the forked draw and bumper head of the car, to a pin, *a*, in the upper por-  
30 tion of which is hung a coupling-finger, B, which is acted upon by a spring, *b*, connected to a pin, *d*, carried by brackets *e* on the top of the draw-head, said spring serving to maintain the coupling-finger in a vertical position, as  
35 shown in Fig. 1. When in this position, the lower end of the finger engages with a toe, D, hung to a shaft, *f*, carried by brackets *g* on the under part of the draw-head, this toe being acted upon by a spring, *h*, which tends to lift  
40 the free end of the toe into position for engagement with the free end of the finger B, as shown in Fig. 1, movement of the toe in this direction being limited by contact of stop-lugs *i* with the brackets *g* on the under side of the draw-  
45 head.

To suitable bearings in the top and bottom bars of the draw-head, near the inner end of the latter, is adapted a screw-shaft, F, which is confined vertically to the draw-head, but is  
50 free to turn in its bearings, the lower end of the screw-shaft having a crank, *m*, or other equivalent means whereby it may be readily

turned. The screw-shaft F is adapted to a nut, *n*, embedded in the inner end of the shank  
*p* of a link, G, which may be turned around 55  
so as to be in line longitudinally with the draw-head, and so as to project therefrom for engagement with the swinging finger of an adjacent coupling, as shown by dotted lines in  
Figs. 1 and 3; or it may be swung around to 60  
one side, so as to be out of the way when its use as a coupling-link is not desired, as shown by full lines in Fig. 3, and by turning the screw-shaft F the link G may be raised or lowered to  
suit the height of the coupling-head with which 65  
it has to engage.

The coupling-link may be supported entirely by the screw-rod, if desired, although in most cases it is preferable to provide the coupling-finger B with opposite projecting lugs, *s*, 70  
which serve to aid in supporting the link and provide a fulcrum on which the link is free to swing, so that the throw of its outer end may be considerably more than the movement imparted to the inner end by the screw-shaft F. 75

When two cars provided with my improved coupling are to be coupled together, the link of one car is thrown to one side, and that of the other permitted to project longitudinally beyond the draw-head, so that as the 80  
two cars approach each other this link will strike the coupling-finger B of the other head and force the same rearward, as shown by full lines in Fig. 2, the movement continuing until the end of the link clears the pin, whereupon 85  
the latter will, by reason of the spring *b*, be restored to the vertical position, its free end coming in contact with the toe D, so as to prevent withdrawal of the link.

In order to uncouple the cars, it is simply 90  
necessary to depress the toe D until it is free from engagement with the end of the pin B, whereupon the latter can swing outward as soon as any attempt is made to withdraw the link. (See dotted lines, Fig. 2.) The shaft *f*, 95  
carrying the toe D, is extended laterally to any desired length, so that it is not necessary for the brakeman to go between the cars in order to operate said toe; and it will be understood that any manipulation of the screw-shaft 100  
F necessary to effect the raising or lowering of the outer projecting end of the link is effected before the cars approach each other.

In Fig. 4 I have shown a modification of my



invention, in which plate-springs are employed in place of coiled springs, for the purpose of restoring the coupling-finger and its retaining-toe to their normal positions after they have been removed therefrom, and in which the screw-shaft is adapted to threaded openings in the draw-head, the link being vertically confined to said shaft.

It will be evident that the link of my improved coupling may be connected by a pin to the draw-head of any ordinary link-and-pin coupler, and that an ordinary link may be coupled to my improved draw-head by engagement with the finger B of the same.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. The combination of the coupling-head, with its pivoted finger adapted to enter a link, and the pivoted toe engaging with and locking said finger, and springs acting on said coupling finger and toe and serving to restore them to their normal positions after they have been moved therefrom, all substantially as specified.

2. The combination of the coupling-head with the link having a shank pivoted to the head near its inner end, and free to swing so

as to project longitudinally from the head for coupling, or laterally from the head when not in use, all substantially as specified.

3. The combination of the coupling-link and the screw-shaft with the link controlled by said screw-shaft and raised and lowered by the turning of the same, all substantially as specified.

4. The combination of the coupling-head and the screw-shaft adapted to bearings therein with the link having a nut adapted to said screw-shaft, all substantially as specified.

5. The combination of the coupling-head, the coupling-finger having projecting lugs, the screw-shaft at the rear of the coupling-head, and the coupling-link having a bearing upon the projecting lugs of the coupling-finger and controlled as to its vertical position by said screw-shaft, all substantially as specified.

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

DANIEL SCHOFIELD.

Witnesses:

EDWARD M. RILEY,  
HARRY SMITH.