

(No Model.)

W. G. SMITH.  
CAR COUPLING.

No. 566,876.

Patented Sept. 1, 1896.

FIG. 1.

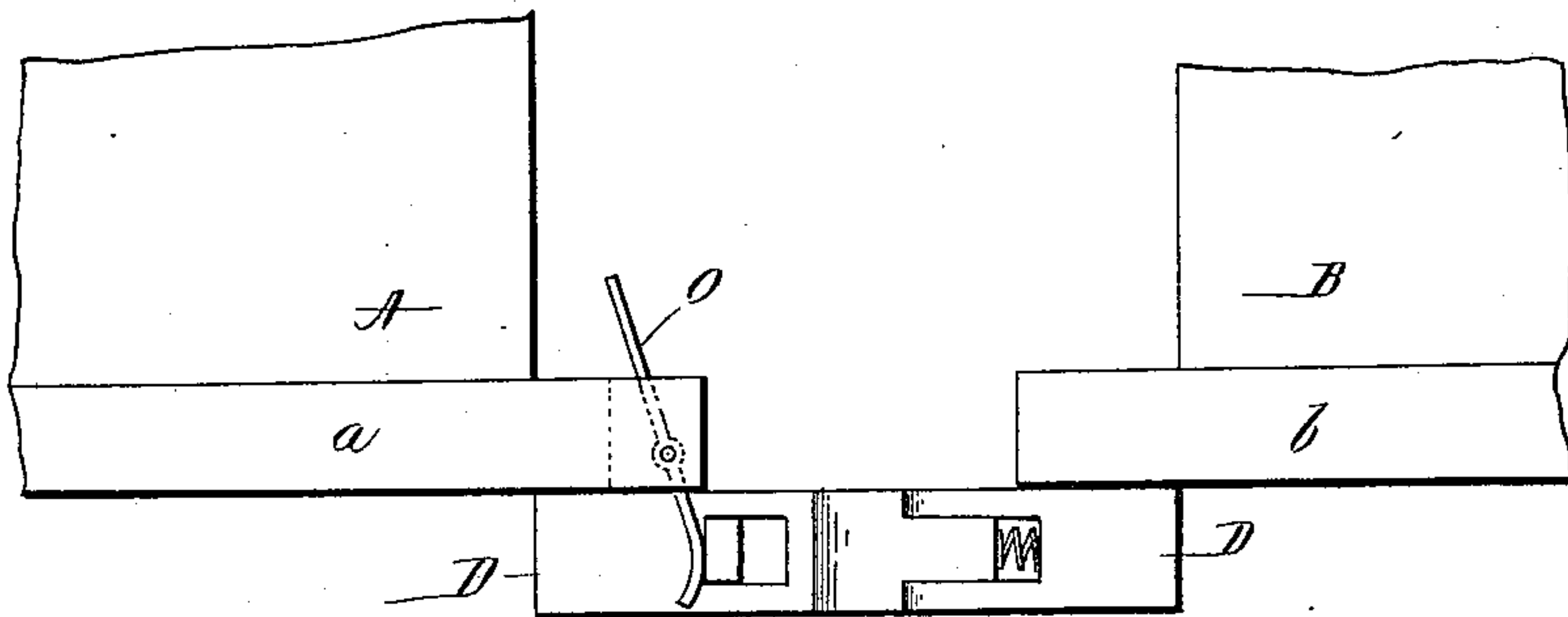


FIG. 2.

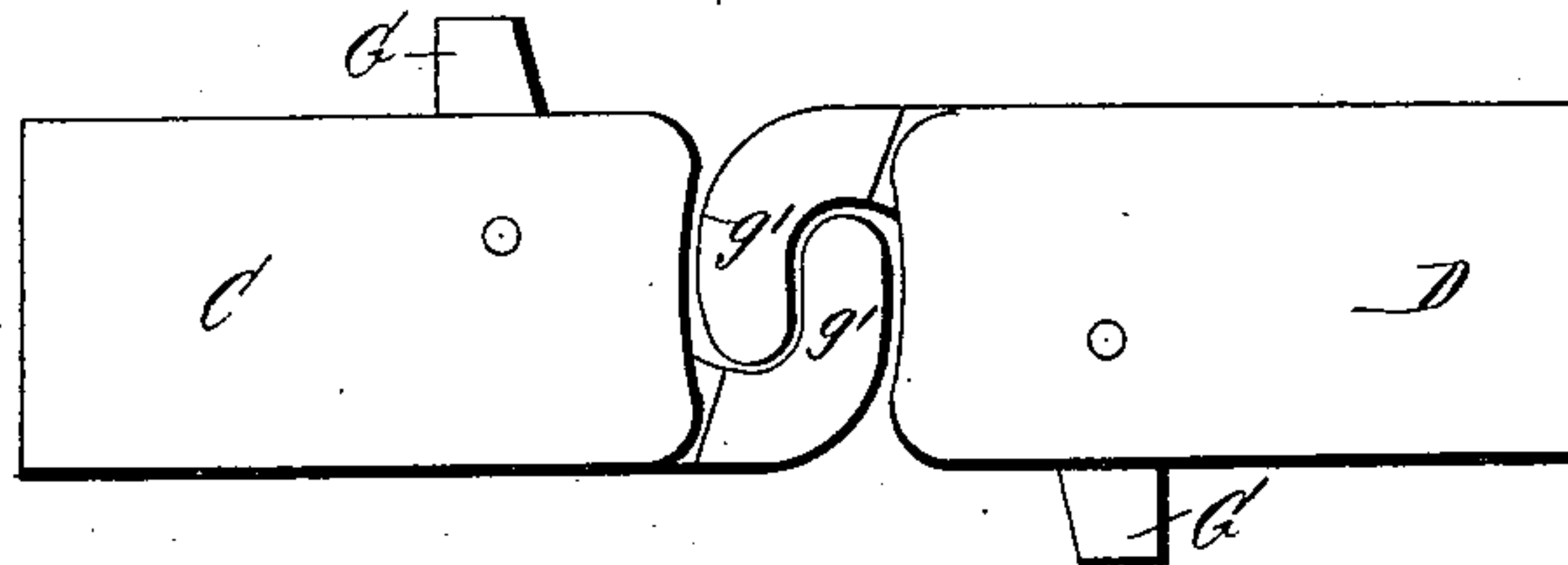


FIG. 3.

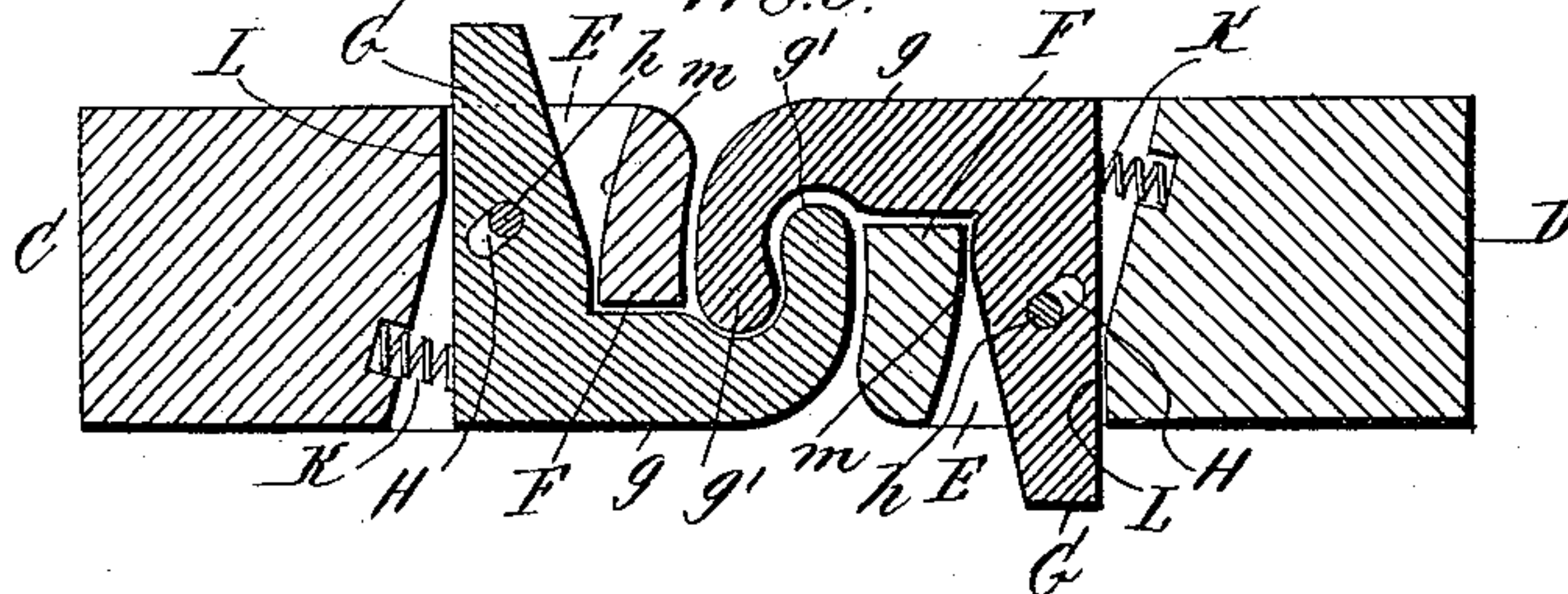
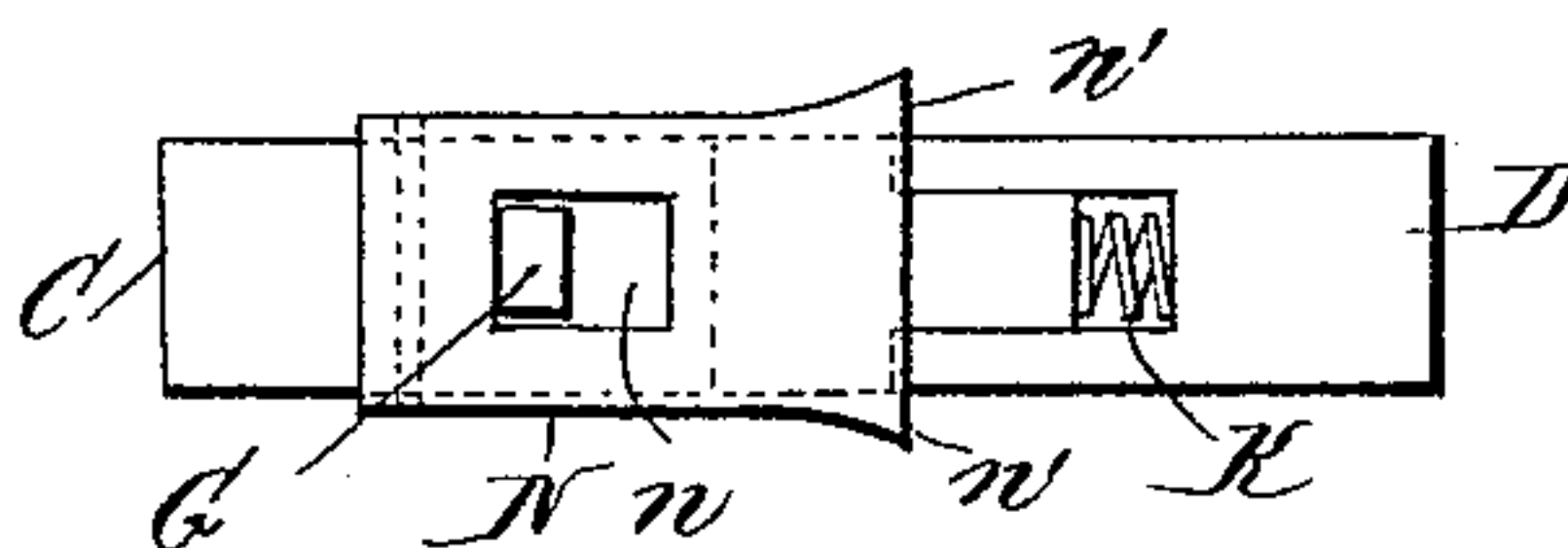


FIG. 4.



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# UNITED STATES PATENT OFFICE.

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## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 566,876, dated September 1, 1896.

Application filed September 13, 1895. Serial No. 562,467. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM GEORGE SMITH, a citizen of the United States, and a resident of New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Car-Couplers, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar letters of reference indicate corresponding parts.

This invention relates to car-couplers, and the object thereof is to produce an effective car-coupler which is simple in construction and automatic in operation; and with this and other objects in view the invention consists in the construction, combination, and arrangement of parts hereinafter described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 is a side elevation of the adjacent platforms of two cars provided with my improved coupling; Fig. 2, a plan view of the coupling; Fig. 3, a longitudinal section, and Fig. 4 a side view of a modification.

In the accompanying drawings, A represents a portion of one car, and B a portion of an adjacent car, and *a* and *b* the platforms thereof, with which the coupling or the separate parts thereof are connected.

In the practice of my invention I employ two similar coupler-heads C and D, one of which is rigidly secured to the bottom of the platform of each of the cars. Each of the coupler-heads D is provided with a transverse opening or passage E, which extends there-through from one side to the other, and on one side of said heads the material thereof is cut away, forming a longitudinal groove or passage F, which communicates with the transverse passage or opening E, the longitudinal groove or passage on the head C being formed on the side opposite to that on the head D. Pivoted in each of the transverse openings E is a lever G, having an arm *g*, provided at its outer end with an inwardly-curved hook or shoulder *g'*, the main part of the lever resting in the opening E and the end thereof extending outwardly a short distance from the head, while the arm *g* of the

lever rests in the longitudinal groove or slot F in such manner that the curved shoulder or hook *g'* projects between the heads, so that when the cars are brought together the curved shoulders or hooks *g'* will interlock, as shown in Fig. 2. The levers G are each pivotally connected with the heads C and D by means of inclined slots H, formed therein, and pivotal pins or bolts *h*, by means of which the levers have a slight sliding motion or movement, and arranged at the back portion of each lever is a spring K, one end of which bears upon the lever and the other end of which has a bearing in the head with which the lever is connected.

On examination of Fig. 3 it will be seen that the inner sides of the transverse openings E are straight, as shown at L, and from which point they incline inwardly, and the inner sides of said openings are outwardly curved, as shown at *m*, while the outer sides of the levers, or that portion which rests within the transverse openings E, are each inwardly inclined, and by means of this arrangement the levers are free to move on their pivotal connections, and are also given a slight longitudinal or sliding motion, whereby, when the cars are brought together, the shoulders or hooks *g'* will be thrown outward and afterward interlocked, as shown in Fig. 3.

In Fig. 4 I have shown an attachment which is designed to be connected with the coupler shown in Figs. 2 and 3, said attachment consisting of a casing N, which is open on one side and provided in its closed side with a slot *n*, adapted to receive the projecting end of one of the levers G. This device is designed especially for use in connection with street-railways, and when it is employed it is only necessary to also employ a lever O, which is adapted to be operated in connection with the projecting end of one of the levers G, so as to throw out the shoulder or hook *g'* of said lever and permit of the operation of the device. The attachment comprising the casing N is open, as hereinbefore stated, on one side, whereby it may be easily slid into position and secured therein by means of screws or bolts, and at the outer end thereof the top and bottom and sides are flared or enlarged, as shown at *n'*, so as to



admit of the free movement of the opposite shoulder or hook  $g'$ .

My invention is not limited to the exact form, construction, and arrangement of parts shown, and I therefore reserve the right to make all such changes therein and modifications thereof as fairly come within the scope of the invention.

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

1. In a car-coupler, the combination with a head or support, having a transverse groove as E, formed therein, and a side groove or passage as F, of a lever as G, pivoted in said transverse opening, and provided with an arm as  $g$ , which rests in said longitudinal side, groove or slot, said arm being also provided with a hook or shoulder  $g'$ , and a detachable casing as N, adapted to slide into position and be secured therein and connected with one side of said head or support, and through which the end of the lever projects, said lever being adapted to be operated by an arm or lever as O, substantially as shown and described.

2. A car-coupler consisting of coupler-heads C and D, one of which is secured to the bottom of the platform of each car, which is provided with a transverse grooved passage E therein, which extends therethrough, one side of said head being cut away to form a longitudinal groove or passage F, which communicates with said transverse passage, the longitudinal passage or groove of the head C being formed on the side opposite to that on the head D, and pivoted in each of said transverse openings is a lever G having an arm  $g$  on which is secured an inwardly-curved hook  $g'$ , the main part of said lever resting in the

opening E while the arm  $g$  rests in the longitudinal groove F, so that the curved shoulder  $g'$  projects between the heads and when the cars are brought together, the shoulders  $g'$  are interlocked, substantially as described.

3. A car-coupler consisting of coupler-heads C and D, one of which is secured to the bottom of the platform of each car, which is provided with a transverse groove passage therein, which extends therethrough, one side of said head being cut away to form a longitudinal groove or passage F which communicates with the transverse opening, the longitudinal groove or passage on the head C being formed on the side opposite to that on the head D, and pivoted in each of said transverse openings is a lever G having an arm  $g$ , on which is secured an inwardly-curved hook  $g'$ , the main part of said lever resting in the opening E, while the arm  $g$  rests on the longitudinal groove F so that the curved shoulder  $g'$  projects between the heads, and when the cars are brought together, the curved shoulders are interlocked, said lever G being pivotally connected with the head by means of inclined slots H formed therein, and pivotal pins  $h$ , to afford said levers slight sliding motion, and arranged at the back of said lever is a spring K, one end bearing upon the lever and one upon the head with which the lever is connected, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 4th day of September, 1895.

WILLIAM GEORGE SMITH.

Witnesses:

CHARLES H. HAYDEN,  
JOHN E. KOHRER.