No. 618,794. Patented Jan. 31, 1899.

H. HYDE.

SPRING HINGE.

(Application filed Aug. 31, 1897.)

(No Model.)

Fig. 2.

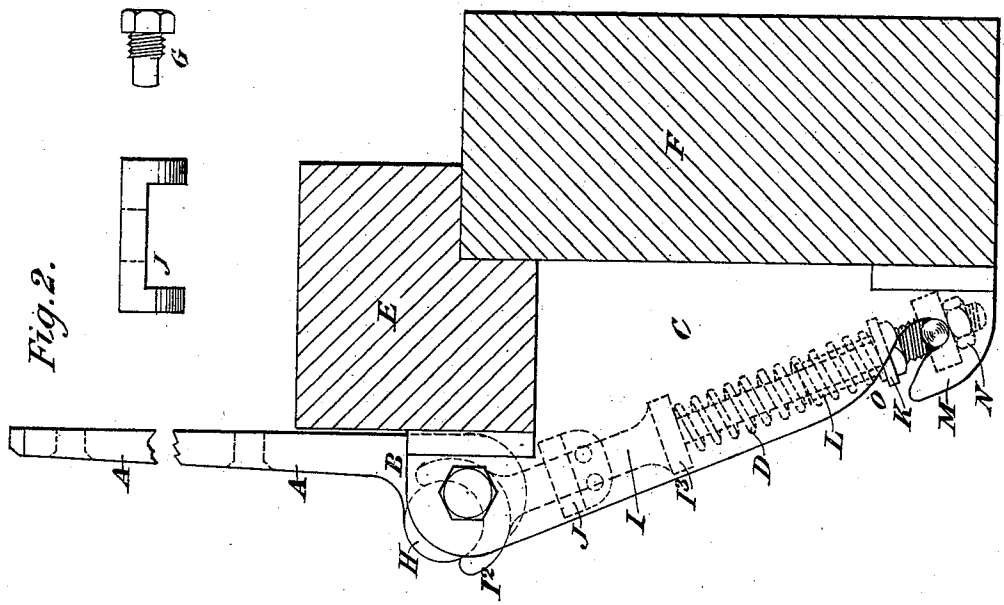
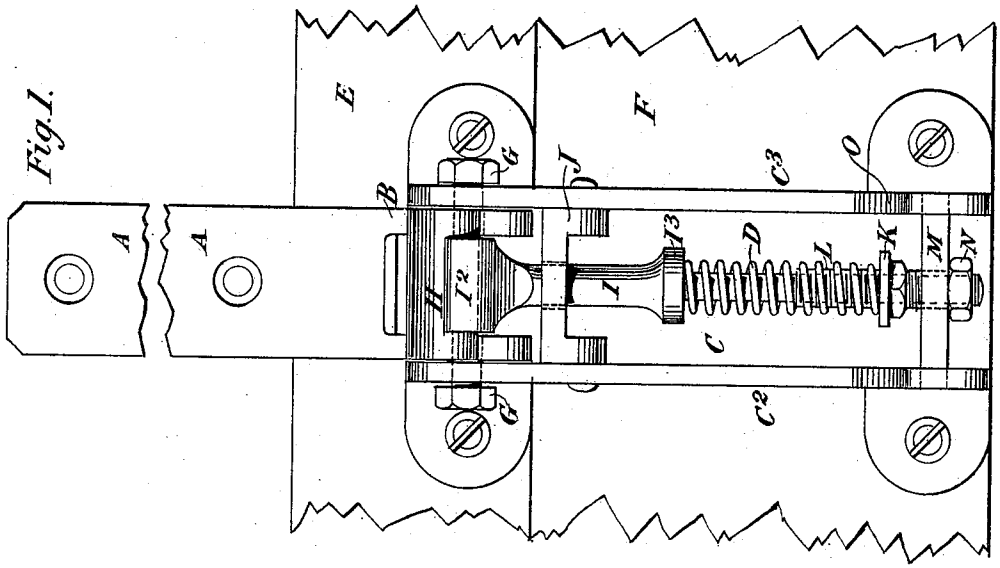


Fig. 1.



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UNITED STATES PATENT OFFICE.

HAROLD HYDE, OF ASHTON-UNDER-LYNE, ENGLAND, ASSIGNOR TO JOHN PETTIGREW, OF LONDON, ENGLAND.

SPRING-HINGE.

SPECIFICATION forming part of Letters Patent No. 618,794, dated January 31, 1899.

Application filed August 31, 1897. Serial No. 650,157. (No model.)

To all whom it may concern:

Be it known that I, HAROLD HYDE, a subject of the Queen of Great Britain, and a resident of Ashton-under-Lyne, county of Lancaster, England, have invented certain new and useful Improvements in Hinges for Controlling and Aiding the Action of Swing-Doors; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

My invention, for which Letters Patent have been granted to me in Great Britain, No. 10,940, dated May 21, 1897, refers more particularly to the fall-down doors of railway-wagons; but it may be applied to other doors, if desired.

The object is to counteract the effect of gravitation when opening and lowering such doors and to assist when the door is being raised. This is attained by the use of controlling-hinges, which may constitute the principal hinges for supporting the door, or they may be auxiliary hinges, which do not in themselves support the door.

I have illustrated a method of carrying out my invention; but it will be apparent that the details of construction may be varied without departing from the principle.

Figure 1 is a front elevation of a hinge according to my invention. Fig. 2 is a side elevation of same.

A is the strap of the hinge.

B is the butt.

C is a bracket carrying the parts A and B and the controlling-spring D. It is preferably secured to both the crib-rail E and the sole F.

The butt B is made to fit between the two sides of the bracket, (marked C^2 and C^3,) and it may be made solid, with the joint-pin passing through it, or it may be divided, as shown, into two members and be supported and carried upon two joint-pins G, passed through the sides of the bracket.

Upon the butt B, I form or affix a cam or eccentric surface or pin, the one shown as an example (marked H) being solid with and connecting the two sides of B. The cam H is so placed that it will accomplish the work it has to perform at the proper time. Thus for a fall-down door of a wagon I locate the cam so that it will cause the spring to exert its greatest controlling power when the door is half open and in a horizontal position.

I represents a rocking pitman provided at one end with a yoke I^2, which engages the cam H, and at the other end with a cross-bar M, the ends of which have a rocking engagement with open slots O in the plates C^2 C^3 of the bracket C. In this instance I provide the end of the pitman I opposite the yoke I^2 with a sleeve L, loosely engaging the pitman, said sleeve being threaded on its exterior, screwed into the cross-bar M, and firmly held by a jam-nut N. Upon the sleeve L is a nut K, and a spring D encircles the pitman and sleeve and extends from the nut K to a shoulder I^3, formed on the pitman. The tension of the spring D can be adjusted by means of the nut K.

J represents a guide-plate secured to the plates C^2 C^3 of the bracket and provided with a slot for the passage of the rocking pitman, said slot being of greater width than the pitman (see Fig. 2) to allow for the lateral movement of the same. It will thus be seen that when the door, which is secured to straps A of the hinges, is opened the cam H, being eccentric to the pins G, will descend and cause the pitman to rock, (the cross-bar M turning in the slots O,) and will also move the pitman longitudinally to compress the spring D. The resistance of the spring will increase as the door is opened farther and will reach its maximum when the door is in a horizontal position and affected by gravity to its greatest extent.

Although I have shown and described the spring D as being used under compression, it will be understood that this action may be reversed and the spring be expanded when in action.

Having thus described my invention and the manner in which I prefer to carry out the same, I declare that what I desire to claim and secure by Letters Patent is—

1. In a hinge the combination with the bracket, of the strap pivotally connected thereto and provided with an eccentric bearing portion, a rocking pitman engaging said eccentric bearing portion at one end, and having its other end pivotally connected to