

No. 709,193.

Patented Sept. 16, 1902.

F. BARSON.
DOOR FOR RAILWAY WAGONS OR THE LIKE.

(Application filed Dec. 13, 1901.)

(No Model.)

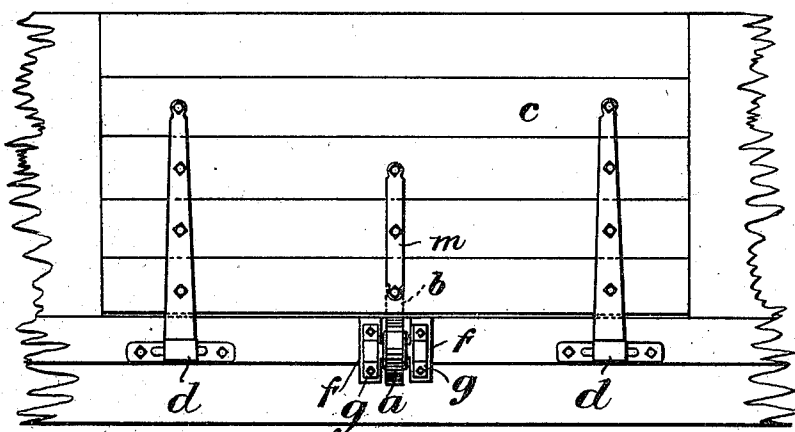


Fig. 1.

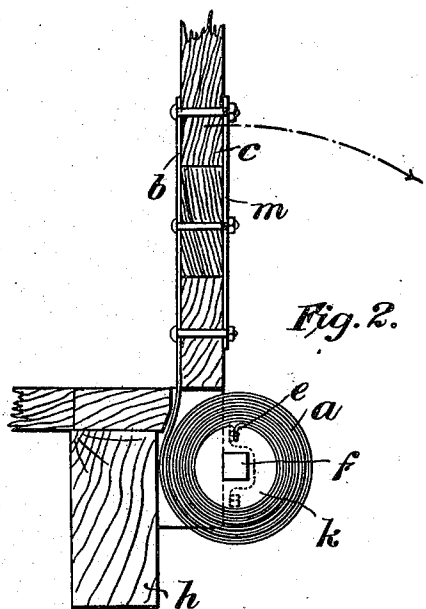


Fig. 2.

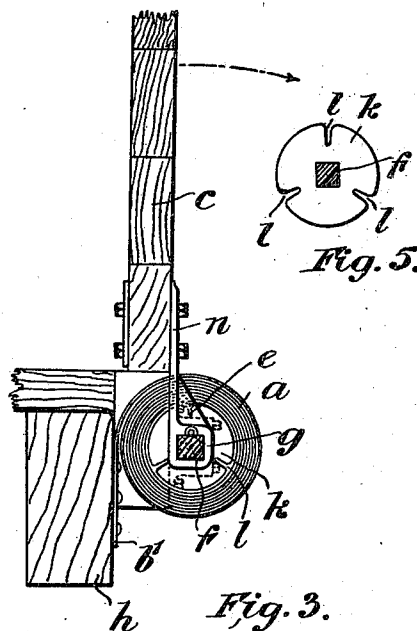


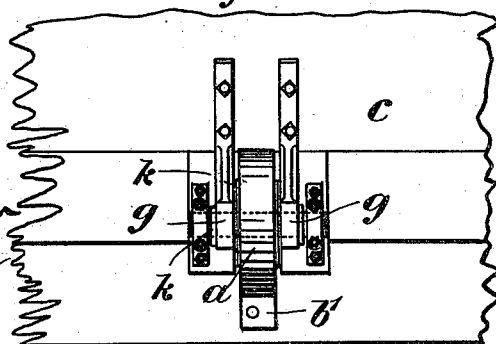
Fig. 5.

Fig. 4.

Fig. 3.

Witnesses:

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Inventor:

Fred Barson
By his attorney
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UNITED STATES PATENT OFFICE.

FRED BARSON, OF SHEFFIELD, ENGLAND.

DOOR FOR RAILWAY-WAGONS OR THE LIKE.

SPECIFICATION forming part of Letters Patent No. 709,193, dated September 16, 1902.

Application filed December 13, 1901. Serial No. 85,746. (No model.)

To all whom it may concern:

Be it known that I, FRED BARSON, engineer, a subject of the King of Great Britain and Ireland, residing at 17 Selby road, Pitsmoor, Sheffield, in the county of York, England, have invented certain new and useful Improvements in Doors for Railway-Wagons or the Like, (for which I have made application for Letters Patent in Great Britain, No. 14,999, bearing date July 23, 1901,) of which the following is a specification.

This invention relates to improvements in connection with springs and fittings for the same for attachment to the doors or underframes of railway-wagons and the like, the object being to provide an apparatus which shall prevent the door from swinging into a position where it would be likely to be injured when it is unfastened and also for providing a means for in part balancing the weight of the door, so as to enable assistance to be given when the door is being raised for fastening it in its normal closed position upon the truck or wagon.

In the accompanying sheet of explanatory drawings, Figure 1 is a front elevation of a wagon-door with my improvements applied thereto. Fig. 2 is a side elevation, to an enlarged scale, of one form of my improved spring. Fig. 3 is a side elevation, and Fig. 4 a front elevation, of an alternative form of construction and arrangement I sometimes employ. Fig. 5 is an end elevation of my adjustable central disk or carrier.

In carrying my invention into effect in one convenient manner I form a spring *a* from a steel bar or plate of any suitable section, one end *b* of which I attach to the inside or outside of the door *c*, while the other end *e* of the coiled portion I secure about a central pin or axis *f*, which pin or central stud I carry in bearings or brackets *g*, secured to the sole-bar *h* or other convenient portion of the underframe of the wagon. I prefer to make my spring as a flat coil-spring, the inner end *e* of which I secure, preferably, to a disk *k* or center, which fits upon the bar *f*, forming the axis of the spring, so that as the free or outer end *b* of the spring, which is formed as a vertical plate or straight member, is moved the coil-spring *a* is made to lock upon itself, the inner end *e* being held fast upon the center.

In order to enable the spring to be adjusted in its tension, I form a number of openings or grooves *l* in the central plate or plug *k*, into which the inner end of the spring can be made to engage, and for the same reason I prefer to make the pin fitting the central block square in section, so that the plate can be readily turned for tightening by shifting the position of the pin in the bearings, which are also made with square holes for receiving the outer ends of the pin. I secure the free or straight end *b* of the spring either to the inside or outside of the door by means of bolts, studs, or other ordinary fastenings, and when securing the plate to the inside of the door I prefer to attach a corresponding washer-plate *m* or bar to the front of the door. By this arrangement of spring attachment when the door is released from its closed position and is allowed to fall the spring is coiled upon its center and the momentum or energy thus taken up by the spring prevents the swinging of the door to a position where it would be likely to come in contact with any portion of the wagon or frame such as would cause it injury. The action of raising the door to its vertical position allows the uncoiling of the spring upon its center to assist the upward movement and take a portion of the weight from the hands of the operator who is closing the door.

Instead of arranging my spring so that the outer or free end is made to coil the spring about its center I sometimes cause the center to be moved to coil the spring upon itself by securing the outer portion *b'*, as in Figs. 3 and 4, to the sole-bar or to the casing or bearing which carries the same, employing in this connection hinge or the like plates *n*, which I connect to the center pin *g* or disk upon which the inner portion of the spring is secured.

I provide a casing cap or covering for my spring when so desired, and I make the section of the steel from which the spring is formed of any suitable shape, varying also the form and shape of the central pin and its bearings and the method of attaching the end of the spring to suit the size and weight of wagon-door and the form of the underframe of the wagon to which it is to be applied. I sometimes employ two or more such

springs for each door, or I may arrange one strong spring in the central position between the ordinary hinges *d* of the doors, as shown in Fig. 1. When making my central disk and pin in a compact form, I sometimes make the disk with the pins or projections in one piece therewith, and I vary the method of securing the end of the spring to the disk to suit any particular requirement, employing any ordinary fastening device for this purpose.

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

1. The combination of a door for railway-wagons and the like, mounted vertically on a horizontal pivot and adapted to open downward to a horizontal position, with means for balancing the weight of the door when opened downward and limiting its downward motion.

2. The combination of a door for railway-wagons and the like, mounted vertically on a horizontal pivot and adapted to open downward into a horizontal position, with means

capable of adjustment for balancing the weight of the door when opened downward and limiting its downward motion.

3. The combination of a door for railway-wagons and the like, mounted vertically on a horizontal pivot and adapted to open downward into a horizontal position, with a spring for balancing the weight of the door when opened downward and limiting its downward motion.

4. The combination of a door for railway-wagons and the like, mounted vertically on a horizontal pivot and adapted to open downward into a horizontal position, with a spring for balancing the weight of the door when opened downward and limiting its downward motion, and means for adjusting the tension of the spring, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

FRED BARSON.

Witnesses:

GEORGE BARSON,
JOHN DYSON.