(No Model.)

C. SCRIVEN.

DOOR CLOSING DEVICE.

No. 490,990. Patented Jan. 31, 1893.

FIG. 1.

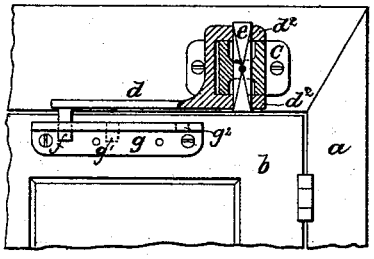


FIG. 2.

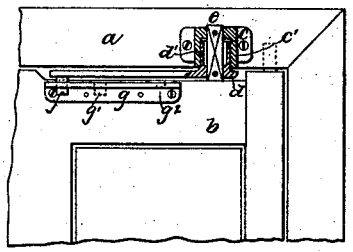


FIG. 3.

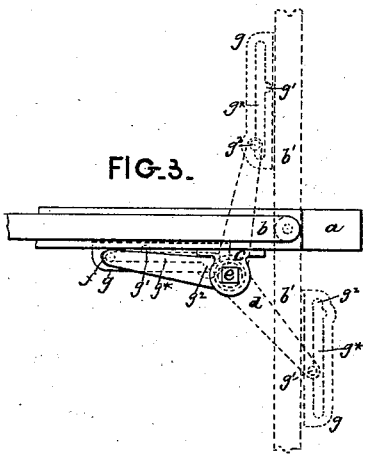


FIG. 4.

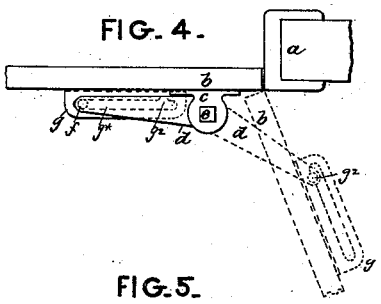


FIG. 5.

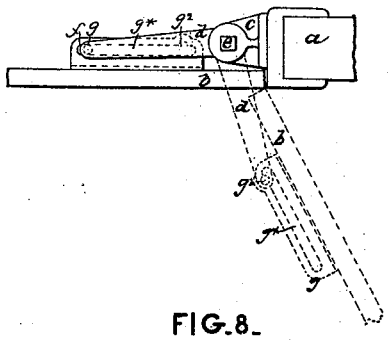


FIG. 6.

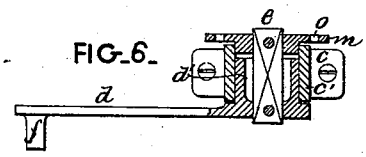


FIG. 7.

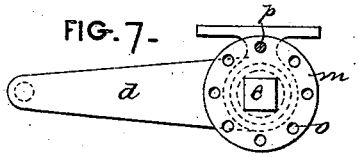


FIG. 8.

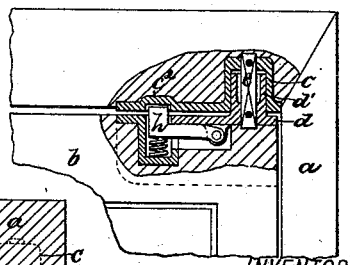


FIG. 10.

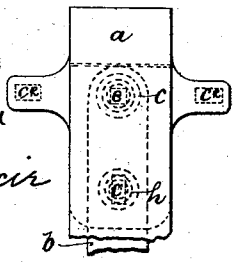
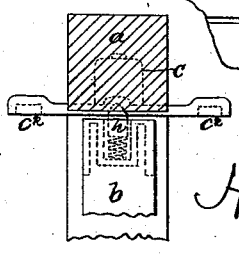


FIG. 9.



WITNESSES:

George Baumann

James Gracie

INVENTOR

Charles Scriven

BY

Howson and Howson

his ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHARLES SCRIVEN, OF LEEDS, ENGLAND.

DOOR-CLOSING DEVICE.

SPECIFICATION forming part of Letters Patent No. 490,990, dated January 31, 1893.

Application filed August 18, 1892. Serial No. 443,386. (No model.) Patented in England August 21, 1891, No. 14,157.

To all whom it may concern:

Be it known that I, CHARLES SCRIVEN, a subject of the Queen of Great Britain and Ireland, and a resident of Leeds, county of York, England, have invented certain Improvements in Door-Closing Devices, (which were patented in Great Britain August 21, 1891, No. 14,157,) of which the following is a specification.

My invention consists in certain improvements in the construction of devices for closing doors and for holding them open in predetermined positions, and in carrying out my invention I employ elastic material such as india rubber, caoutchouc &c., (hereinafter referred to by the more general term india rubber) as the spring, which is arranged as an axial connection between two parts turning one upon the other and acts by torsion.

In the accompanying drawings, Figure 1 is an elevation partly in section of part of a door frame or casing and door provided with one form of my improvement; Fig. 2 is a corresponding view of a modification; Fig. 3 is a plan view of the construction shown in Fig. 2; Figs. 4 and 5 are plan views of other modifications; Figs. 6 and 7 are views of another construction of my invention, and Figs. 8, 9 and 10 are views of still another modification.

Referring to the construction illustrated in Fig. 1, *a* is the door frame or casing, *b* the door, *c* a bracket or part attached to the casing *a*; *d* an arm or lever pivoted to the bracket. It is provided with a double or forked end d^2 for taking upon or spanning the bracket *c*, and turning thereon by the movement of the door. Both the bracket *c*, and the arm *d*, are perforated axially, (by preference with rectangular openings) to receive a piece of india rubber *e*, which at its center is fixed in the said bracket *c*, and engages with the ends d^2 d^2, the arrangement being such as to allow of two twists, viz.:—one at each end of the central fixed part of the india-rubber, thus accumulating sufficient energy for closing a somewhat heavy door. Each side of the bracket *c*, is enlarged or recessed in its interior to give room for the enlargement of the india-rubber during twisting, as the door to which it is attached is opened. A stud *f*, which is fixed to the other end of the arm or lever *d*, takes into a slot formed in a plate or bracket *g*, attached to the top of the door.

g' and g^2 are notches for the stud *f*, to take into and automatically hold the door in a wide open position or it may be in any other position according to the location of such notch or notches, the latter being of such a character as to allow the door to be readily closed again by pulling or pushing the door.

In the construction shown in Fig. 2 the india rubber is arranged to have but one twist given to it, and the door can be held open in predetermined positions.

As shown in the plan view Fig. 3, the door is arranged to open both ways. As in the construction already described, there is a bracket *c* attached to the door frame or casing. This bracket is provided with a bearing c' in which is fitted to turn freely a tubular boss d' on the arm or lever *d*. This boss and the bracket are provided with corresponding axial perforations for receiving the india rubber torsion spring *e* to the opposite ends of which these parts are connected. A stud *f* on the lever *d* is adapted to work in a slot g^* in a plate *g* which is provided with notches g' and g^2 for the reception of the stud *f* to hold the door in the wide open position either way, as indicated by dotted lines in Fig. 3.

In the construction shown in Figs. 4 and 5, the door is arranged to open in one direction only, the closing device being shown in one case as adapted for use on one side of the door and in the other case for use on the other side of the door, as will be readily understood. As shown in Figs. 4 and 5, these constructions require each only one notch g^2 in the slotted plate *g* to provide for holding the door in the full open position, as indicated by dotted lines.

The construction illustrated in Figs. 6 and 7, has been devised in order that it may be applied to a door hung either on the right or left hand, and also to provide for giving additional twist to the rubber torsion spring if required. There is as before, a bracket *c* to be attached to the door frame or casing and this is provided with a cylindrical bearing c' through it. Into one end of this bearing there is fitted to turn freely the tubular boss d' of the arm or lever *d*. At the other end of the bearing c' there is fitted a cap *m* provided with a

series of holes *o* and capable of being turned in the bracket for adjustment. The india rubber torsion spring *e* is fixed at one end to the lever *d* and at the other end to the cap *m*. When the lever *d* is brought into the required position with the stud *f* taking into the slot of the plate *g*, a pin *p* (Fig. 7) is put through one of the small holes *o* and into a corresponding hole in the bracket *c*, to prevent the cap *m* from turning on its axis. By this means it will readily be seen that this device can be applied either to a right or left hand door and any desired tension given to the spring, by adjusting the cap *m*.

In the construction illustrated in Figs. 8, 9 and 10, I have shown my invention as applied to a swing door, that is, one which opens in both directions. The bracket *c* in this case is recessed into the head of the door frame and is provided with projecting branches having notches or recesses c^2, three in the present instance. The lever or arm *d* in this case is secured to the top edge of the door and its boss *d'* is fitted to turn in the bracket or bearing *c* so that these two together form the upper axis or pivot upon which the door turns. The bracket or part *c* and the arm or lever *d* are provided with corresponding openings for the reception and securing of the opposite ends of the rubber torsion spring *e*, as in the construction shown in Fig. 2. The boss *d'* is, as before, recessed or enlarged interiorly to allow room for the twist of the rubber when the door is swung in either direction. The arm *d* is provided with a spring latch *h* to take into any one of the recesses c^2, c^2, c^2 for holding the door when it is either in the closed position or open in either direction.

I claim as my invention:

1. The herein described device for closing doors, comprising a bracket and a lever pivoted thereto, one of these parts being adapted to be connected to the door and the other to the door frame, with a torsion spring of rubber or similar elastic material forming an axial connection between the lever and bracket, substantially as described.

2. The herein described device for closing doors, comprising a bracket and a lever pivoted to the bracket, one of these parts being adapted to be connected with the door and the other to the door frame, in combination with a torsion spring of rubber or similar elastic material connecting the lever and bracket and devices substantially as described for automatically holding the door in the position to which it may be moved.

3. The herein described devices for closing doors comprising a bracket adapted to be secured to the door frame, a lever pivoted to the bracket, a torsion spring of rubber or similar elastic material connecting these two parts, with a slotted and notched plate adapted to be secured to the door and to engage with the said lever.

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

CHARLES SCRIVEN.

Witnesses:
ALL JOUING, Sr.,
CHAS. GILLIARD.