(No Model.)

N. M. STEBBINS.

DOOR CLOSING DEVICE.

No. 306,970. Patented Oct. 21, 1884.

Fig. 1

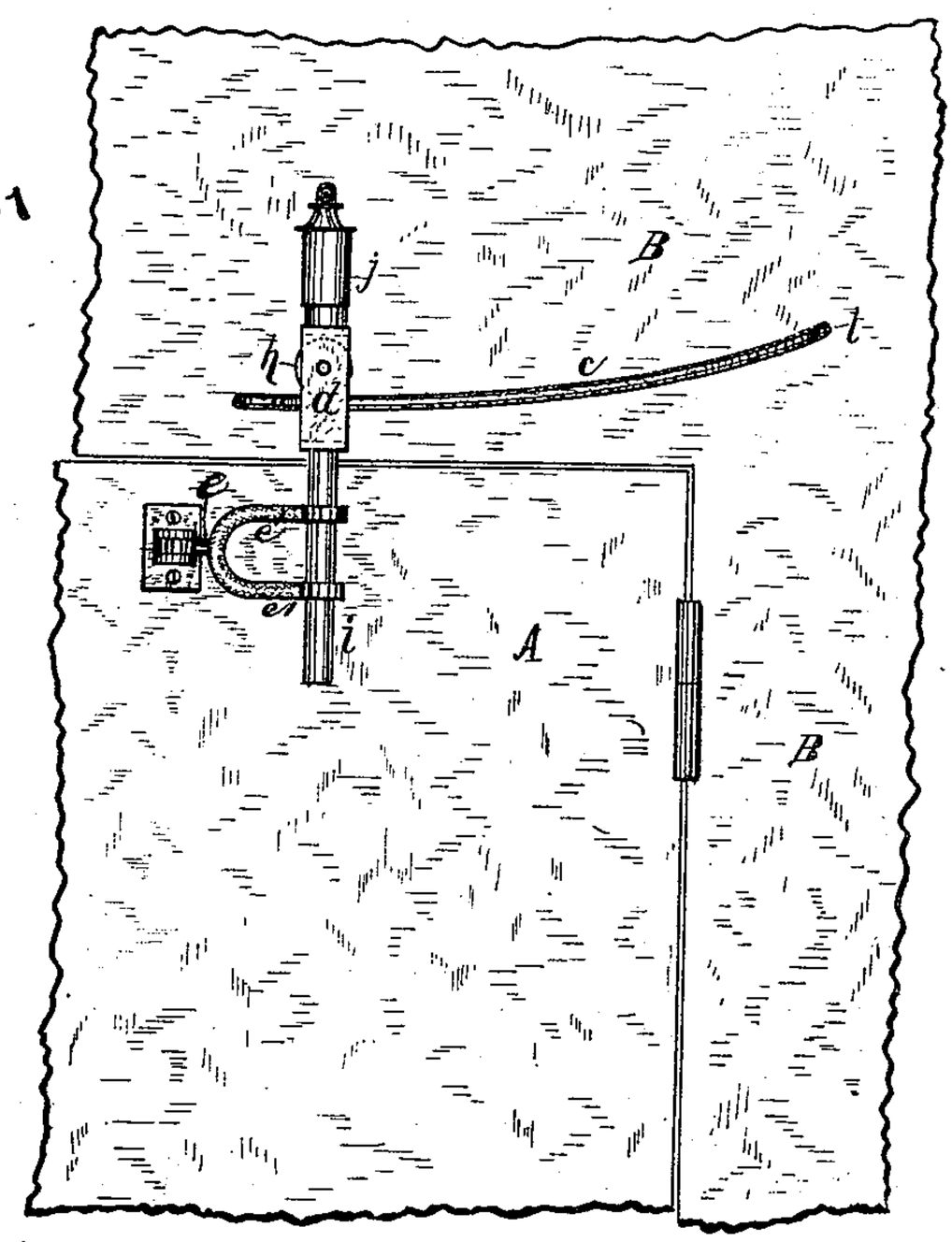


Fig. 3

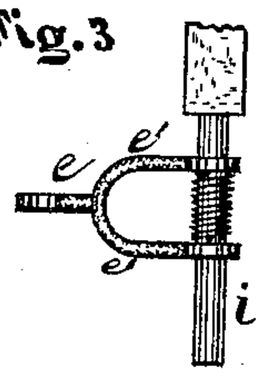
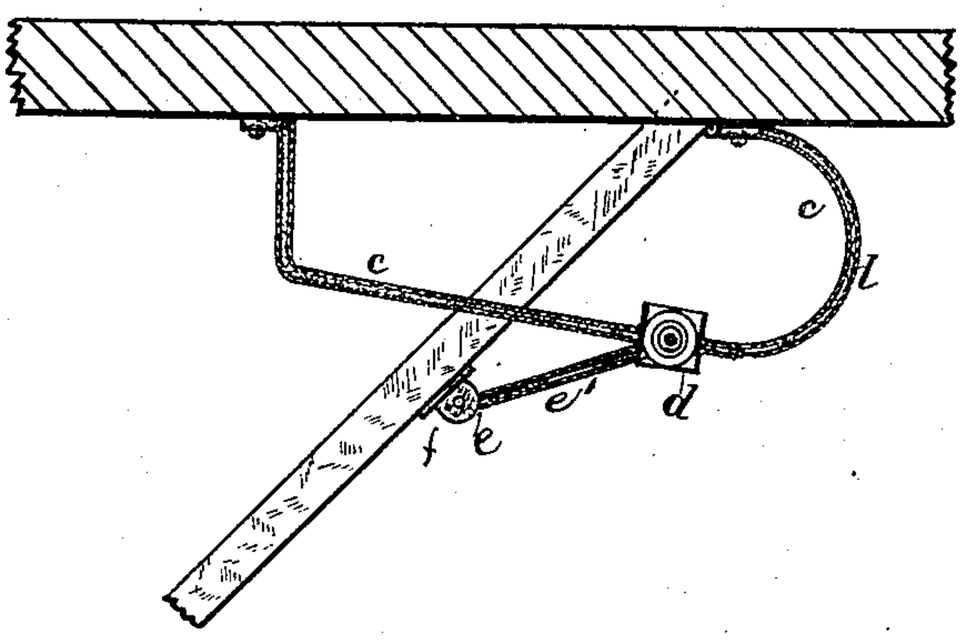


Fig. 2



WITNESSES

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NATHAN M. STEBBINS, OF WALES, MASSACHUSETTS.

DOOR-CLOSING DEVICE.

SPECIFICATION forming part of Letters Patent No. 306,970, dated October 21, 1884.

Application filed January 28, 1884. (No model.)

To all whom it may concern:

Be it known that I, NATHAN M. STEBBINS, of Wales, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Door-Closing Devices, of which the following is a specification, reference being had to the accompanying drawings, in which—like letters of reference indicating like parts—

Figure 1 is a front view of a portion of a door and casing with my device attached. Fig. 2 is a view as seen from above, the door being partially opened; and Fig. 3 represents a modification.

The construction and operation will be readily understood on reference to the drawings.

A represents the door; B, a portion of the casing.

c represents an inclined track, preferably made of wire bent as shown; *d*, an upright part having a pulley, *h*, and a stem, *i*, the part *e* a hinged connection between the door and stem.

The track *c* is secured to the door casing or frame, above the door, and arranged, substantially as shown in Fig. 1, with the rear point of attachment higher than the forward end, and the track is preferably formed with a straight section, and from thence struck at an angle slightly obtuse, and terminating in a curved portion, substantially as seen in Fig. 2 of the drawings.

The part or arm *e* has one end pivotally fastened to the door, and is formed with an arm or arms, *e' e'*, having perforated ends through which the stem *i* is passed. This stem *i* is loosely disposed in the perforations of the part *e*, in order that in its movements it will adjust itself to the different positions on the track and retain the pulley in contact with the track. The stem *i* is formed or provided with the part or casing *d*, having the pulley *h* journaled therein, and arranged above the casing is a weight, *j*. It is evident that the weight may be suspended from the lower end of the stem *i*, and the result be the same and attained with equal certainty. The track-rod is passed through the slot in the pulley-casing and below the pulley, so that the under face of the pulley shall rest on the rod.

If the door turns easily upon its hinges, the weight of the part *d* and parts attached will be sufficient to cause the pulley to move down the incline, and thus force the door to a closed position. If, however, the door does not close easily, then weight may be applied to the part *d*, which will operate with added force to close the door. I prefer to apply this weight at the top at *j*, as shown in Fig. 1.

Instead of having the weight set on or suspended from the stem *i*, the object may be accomplished by a spring applied substantially as shown, for instance, in Fig. 3, operating to draw the stem and part *d* downward. The rapidity of the movement of the door may be most easily controlled by the incline of the track, as the door, it will be seen, will move most rapidly during the time the pulley is traveling over the steeper portion of the track.

The track may be so shaped as to hold the door at rest at any desired point. For general use I prefer to have the track rise to the point *l*, this being the point reached by the pulley when the door is at right angles to the wall. After passing this point the tendency will be to force the door open. This, it will be seen, may be greatly varied and the motion of the door easily controlled. The motion of the door can also be varied without varying the incline of the track by varying the weight applied to the part *d*, or by varying the tension of the spring.

I am aware that a door-closing device has heretofore been made wherein a pulley moves over an inclined track, as shown in United States Letters Patent No. 5,579. In this the weight of the door is relied upon to give the desired motion, and the door is raised from its hinges, which is objectionable.

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

1. The inclined track secured to the casing or frame of the door, the vertical stem provided with a pulley in its upper portion, and the arm pivotally secured to the door, and having perforations in its free end to receive and retain the vertical stem, all combined substantially as and for the purpose set forth.

2. An inclined track fastened to the casing or frame of the door, a weighted casing or pulley-block formed with a vertical depending

stem, and provided with a pulley to travel on the track, and an arm pivotally secured to the door, and its outer end adapted to loosely embrace the depending stem, all combined substantially as described, and for the purpose set forth.

3. The combination of track *c*, part *d*, pulley *h*, stem *i*, part *e*, and door, all constructed and operating substantially as shown.

4. The inclined track secured to the casing or frame of the door, the casing or pulley-block with the pulley fitted to travel on the track, the said casing or pulley-block being formed with an inflexible stem, and connected to the door so that the stem and casing shall be held in vertical position while traversing the track, substantially as shown and described.

NATHAN M. STEBBINS.

Witnesses:
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