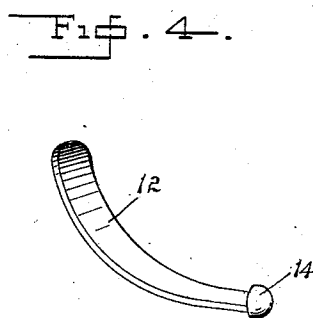
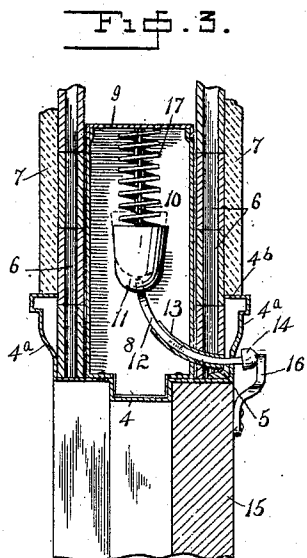
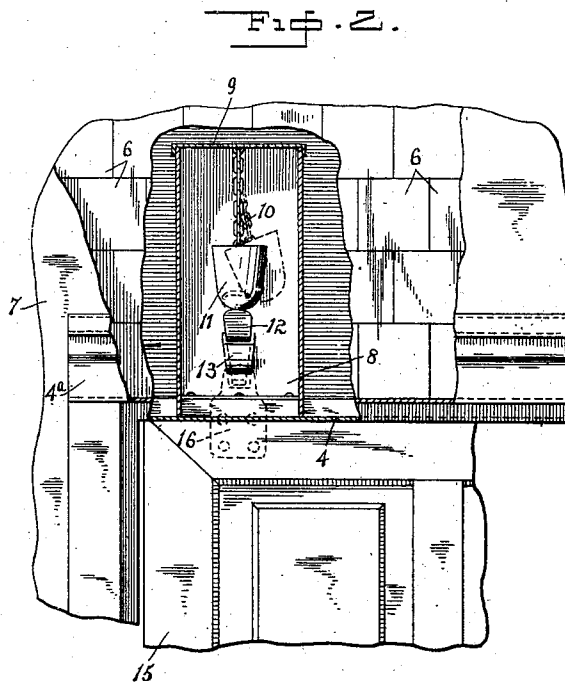
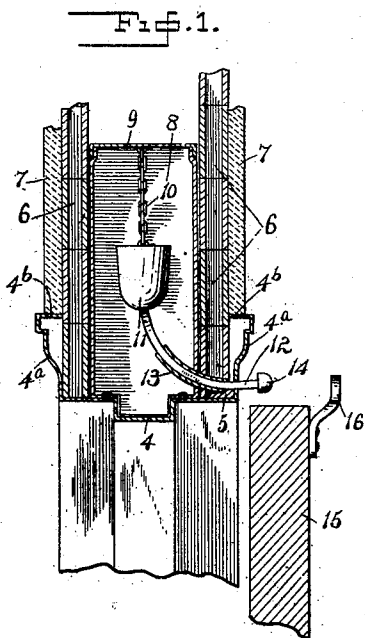


T. P. SHEAN.
SHOCK ABSORBER FOR DOORS.
APPLICATION FILED MAR. 7, 1910.

978,949.

Patented Dec. 20, 1910.



WITNESSES:

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THOMAS P. SHEAN, OF CHICAGO, ILLINOIS.

SHOCK-ABSORBER FOR DOORS.

978,949.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, THOMAS P. SHEAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Shock-Absorbers for Doors, of which the following is a specification.

My invention relates to attachments for doors and other closures of a similar nature, and has particular reference to devices employed for checking the movement of the door while being closed.

The device hereinafter described is particularly applicable for use in fireproof construction having tile walls and hollow steel casings, such structures being especially liable to injury from the slamming of the comparatively heavy doors with which they are supplied, the continued jarring after a time causing the tiling and plaster to crack and break, thus forming openings through which the flames may pass from one compartment to another in case of fire.

The chief objects of the improvements which constitute the subject matter of this application for patent are:—to provide a simple, efficient and durable mechanism whereby the shock caused by the closure of the door to which it is applied will be substantially absorbed before reaching the wall structure thus avoiding injury to the casing and wall to which they are liable when the door is suddenly closed with considerable impact against the door jamb.

I accomplish the desired results by means of the device illustrated in the accompanying drawing, which forms a part of this application, the details of construction being disclosed in the following views:—

Figure 1 is a vertical section of a portion of a hollow partition wall of tile construction, including the upper part of a door opening and the door corresponding thereto, equipped with my improved shock absorbing device; Fig. 2 is a side elevation of a similar portion of wall, a part of the wall being broken away to disclose that portion of the shock absorbing device which is arranged within said wall; Fig. 3 is a view similar to Fig. 1 with the door in closed position, and Fig. 4 is a perspective view of the lift bar.

Referring to the details of the drawing, the numeral 6 indicates the tiling entering into the wall construction, 7 the plaster or

other finish forming the wall faces, and 4 the lintel of the doorway, composed in this case of sheet metal, the margins being continued upon the wall faces to form a molding, as indicated at 4^a, and the upper edge 4^b turned inwardly to meet the tiling. An angle-bar 5 secured at the inner angle of the molding and frame serves to stiffen the structure. In the space between the opposing tile walls, above the lintel 4, and adjacent to the lock edge of the doorway, is arranged a rectangular sheet metal casing 8, having a cover 9 and in said casing is a weight 11 suspended by means of a chain 10 from the center of the cover.

Extending through a suitable opening in the casing, the molding and the tiling just above the doorway, is a flat curved lifting bar which is slidably mounted in a curved sleeve or sheath 13 firmly secured in the casing wall, and having its inner end projecting within the chamber 8. The bar 12 is curved longitudinally and has its lateral margins inclined or tapering so that the bar is wedge shaped in cross-section as shown in Fig. 4. The sleeve 13 is narrowed laterally toward the outer end to conform to the contour of the bar 12 so that the tapering edges of the latter will frictionally engage the sides of the sleeve when said bar is at its lowest point and thus limit its outward movement. The lifting bar is so arranged that when it is in its extended or outward position its inner end will be directly beneath the center of the weight 11, as shown in Fig. 1. The lower projecting end of said bar 12 is provided with a buffer formed by a rubber tip 14 secured thereto. The top rail of the door 15 is furnished at the upper end with a rigid outwardly projecting arm 16, so arranged that it will strike the projecting buffer 14 of the bar 12, when the door is being closed and before the actual contact between door and jamb.

In Fig. 3 is shown a coiled spring 17, surrounding the chain 10, and having its upper and lower ends abutting against the under side of the casing cover and the weight 11, respectively. The purpose of this spring is to increase the action of the weight, and the result of this combination of weight and spring will be to present a more gradual and a greater resistance to the impact of the door than when a weight alone is employed permitting the use of a lighter weight and relieving the door in a measure from the

shock which would result from a direct blow upon a comparatively heavy weight.

The operation of the device will be readily understood from inspection of the drawings together with the foregoing description. When the door is ajar, as shown in Fig. 1, the lifting bar 12 will slide by gravity to its lowest position, and the weight 11 will swing to a position directly above the broad inner end of the said bar, where it will rest until the door is closed. During the closing of the door the arm 16 will strike the buffer end 14 of the bar 12 and thrust the latter inward and upward in the direction of its curvature, carrying the weight 11 to the position shown in dotted outlines in Fig. 3. The said bar will remain in this retracted position so long as the door remains closed, and as the weight is, flexibly suspended it will swing laterally from its vertical position and lodge against the side of the engaging end of the bar taking some position such as that shown in dotted outlines in Fig. 2.

Having thus described my invention what I claim, is:—

1. In a shock absorber, the combination with a door, of a weight flexibly mounted adjacent said door, a bar projecting into the path of the door, and adapted to engage and lift said weight when the door is being closed, and means on the door for engaging said bar.

2. In a shock absorber, the combination with a door, of a movable bar, a weight suspended in the path of said bar, and an abut-

ment on said door adapted to push the bar against the weight by the closing of the door.

3. In a shock absorber, the combination with a door, of a weight suspended adjacent the door, a spring urging the weight downward, and means for lifting the weight against gravity and the action of the spring, said means operated by the closing of said door.

4. In a shock absorber, the combination with a door, a casing, a weight, a chain freely supporting said weight in said casing, a curved bar slidably mounted in said casing and adapted to lift said weight, and means on said door for operating said bar by the movement of the door.

5. The combination with a door and door-frame, of a bar slidably mounted in the door-frame, a weight flexibly suspended in the path of said bar, an abutment on said door adapted to engage the bar, and a buffer attached to said bar.

6. The combination with a door, of a bar slidably mounted, a buffer on said bar, a weight flexibly suspended in the path of said bar, a spring urging the weight downward, and an abutment on said door adapted to engage the bar.

In testimony whereof I affix my signature in the presence of two witnesses.

THOMAS P. SHEAN.

Witnesses:

C. F. BASSETT,
M. A. MILORD.