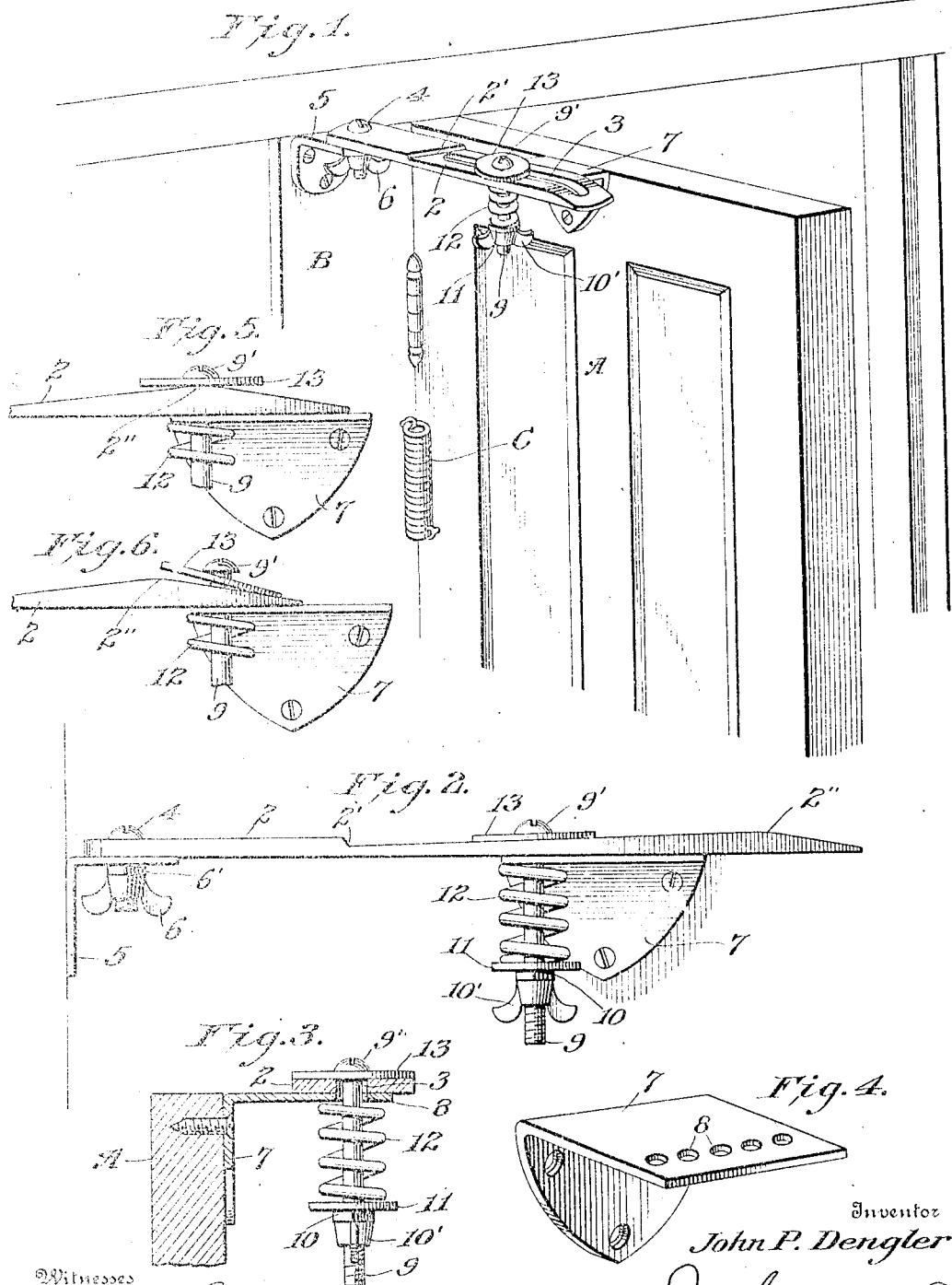


J. P. DENGLE.
DOOR CHECK.
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DOOR-CHECK.

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To all whom it may concern:

Be it known that I, JOHN P. DENGLER, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Door-Checks, of which the following is a specification.

My invention relates to door checks, and particularly to frictional checks, the object of the invention being to provide a check which shall permit a spring-actuated door in closing to move easily over the first part of its path, to be gradually checked as it nears the door jamb, and finally to be practically freed from frictional engagement to permit the full action of the door spring when the door is within a few inches of the casing.

To these ends my invention consists in a frictional door check arm having a gradually increasing thickness from its rear to a point near to its free or forward end and then a rapidly decreasing thickness to this end, in combination with a device attached to the door frictionally engaging said arm.

I have shown one embodiment of my invention in the accompanying drawings wherein,

Figure 1 is a perspective view of the upper part of a door with my device attached. Fig. 2, is a side elevation of the check. Fig. 3, is a transverse section across the door bracket and the arm. Fig. 4, is a perspective of the door bracket detached. Fig. 5, is a fragmentary side elevation of the forward end of the arm, the friction disk being at the checking point, and Fig. 6, is the same as Fig. 5, the friction disk however being beyond the checking point.

Like reference characters throughout the several views designate like parts.

My check is intended to be applied to a door, gate or other hinged closure of like character, and though I have shown it as applied to a door A, I do not wish to be limited thereto. The check consists broadly of an arm 2 of any cross sectional form pivotally connected at its rear end to a gate post or as shown in the drawings, to the door jamb B. This arm acts in conjunction with a spring pressed friction slide carried on the door, the slide moving along the arm as the door is opened or closed. The face of the arm which contacts with the slide is so made that it will gradually increase the frictional contact be-

tween the slide and arm as the door closes, under the impulsion of the spring C.

In detail my preferred construction comprises a flat arm 2 slotted as at 3 from the front end to a point adjacent to the rear end. The rear end of the arm is pivoted by a pin-bolt 4 to a bracket 5 for horizontal movement, the bolt being provided with a wing nut 6 and an ordinary nut 6' whereby the arm may be adjusted to a looser or tighter engagement with the bracket 5.

One face of the arm, preferably the under face is flat for sliding contact with the upper face of an angular bracket 7 attached by screws to the face of the door at its upper margin. The other face of the arm is cut away beyond the rear end of the slot 3 as at 2', and from this point inclines upwardly (that is the plate gradually thickens) to the point 2'' which is located short of the termination of the slot 3. From this point 2'' the upper face of the arm inclines downward to the end thereof, that is the arm lessens in thickness.

Passing loosely through the slot 3 and in one of the perforations 8 in the bracket 7 is a bolt 9, the upper end of which is provided with a notched head 9', and the lower end with screw threads, a plain nut 10 and a wing nut 10'. Resting on nut 10 is a washer 11. Between the washer 11 and the under side of the bracket 7 is a spring 12. By turning the nuts 10, 10' the spring may be compressed to a greater or less degree between the washer and the bracket, and hence will draw downward with more or less strength upon the bolt 9. Between the head 9' of the bolt and the upper face of the arm 2 is a contact piece or friction plate 13 of disk form which contacts with the upper face of the arm. It will be plain that by screwing the nuts 10, 10' upward on the bolt the friction disk will be drawn down against the upper face of the arm, thus increasing the frictional contact of the disk with the arm. It will be plain also that by loosening the said nuts the friction between the arm and disk may be reduced to any degree desired.

In service the nuts 10, 10' are so adjusted that the disk 13 bears but lightly against the arm when the disk is in its rearmost position. As the door closes however the bolt 9 and the disk 13 are carried along the arm. The gradual thickening of the arm wedges outward on the disk 13 compressing the spring

and thus gradually increasing the frictional contact between the disk and the arm until the disk reaches point 2" where the maximum frictional resistance occurs. At this point the door is some inches from being completely closed, the number of these inches being a matter of adjustment as will be later described. As the friction disk passes the point 2" however, as shown in Fig. 6, the tension of the spring is relaxed, there is less frictional contact and the door spring C is free to act to close the door in the usual manner.

I have shown the bracket 7 with a plurality of holes 8. This permits the point at which the door will be freely acted upon by its spring to be adjusted, as the further along the bracket is set, the less distance the door will move in closing before it reaches and passes the point 2", and is free to move under the impulsion of the spring C. Of course the bracket 7 might be set upon the door at any desired place and this same result be accomplished, but the plurality of perforations 8 permits this point of rapid closing to be adjustable without the necessity of shifting the bracket itself. It will be obvious also that by tightening the nuts 10, 10' up on the bolt 9 the door may be held at any desired position, and also that it may be so tightened that the door would not under ordinary circumstances fully close, but would be held somewhat open by the disk reaching the point 2", at which point the spring 12 would be so compressed as to hold the door from closing. It will also be seen that the door may be easily closed or opened by hand in the usual manner and that the device is capable of preventing the slamming of doors whether the door is acted upon by a door spring or by a person passing therethrough.

While I have shown what I believe is the preferred construction of my door check, I do not wish to be limited thereto, as the principle thereof could be embodied in many forms.

My device is simple, easily applied, and may be quickly disassembled when desired or entirely detached. I have shown the check as applied to the upper end of a door and door jamb and to a case where the face of the door jamb is parallel with the face of the door when closed. It is obvious however, that as the bracket 5 is pivotally connected to the shank of the arm 2, the bracket may be as easily applied to a jamb which projects out at a right angle to the face of the door. The check may be applied either to the upper end of the door as shown or to the middle portion thereof.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. A frictional door check having an arm adapted to be pivoted at one end to a door

jamb and a frictional contact piece, means for supporting said contact piece upon a door a spring for forcing said contact piece against the face of said arm and in frictional contact therewith, and means whereby the tension of said spring may be increased or decreased, said arm being relatively thin at its rear end, then gradually thickened towards its forward end and then decreased in thickness to its extremity.

2. A frictional door check having a bracket adapted to be supported on a door, a frictional contact piece mounted in said bracket adjacent to one face thereof, an arm adapted to be pivoted at one end to a door jamb, said arm passing between the door bracket and the contact piece in frictional contact therewith and movable there across, and a spring for forcing the contact piece against the bracket, said arm being relatively thin at its rear end, then gradually thickening to its forward end, and then decreased in thickness to its extremity.

3. In a door check, a bracket adapted to be attached to a door, a bracket adapted to be attached to a door jamb, an arm pivoted at its rear end to the door jamb bracket, a bolt passing through the door bracket, a frictional contact plate on the upper end of the bolt contacting with said arm, a spring mounted on said bolt retracting the same, and means connected therewith for regulating the tension of said spring, said arm being relatively thin at its rear end, then gradually thickening towards its forward end and then decreasing in thickness to its extremity.

4. In a door check, a bracket adapted to be attached to a door, a bracket adapted to be attached to a door jamb, an arm pivoted at its rear end to the door jamb bracket and having a slot longitudinally therethrough, a bolt passing through the door bracket and through said slotted arm, a frictional contact plate on the upper end of said bolt contacting with the upper end of said arm, and a spring mounted thereon for retracting the same, said arm being relatively thin at its rear end at the beginning of said slot, then thickening towards its forward end and then decreasing in thickness to its extremity.

5. In a door check, a bracket adapted to be attached to a door jamb a bracket adapted to be attached to a door and provided with a series of perforations in line with each other, a slotted arm pivoted at its rear end to the door jamb bracket, a bolt passing through one of the perforations of the door bracket and through the said slot in the arm, a frictional contact plate on the upper end of the bolt contacting with said arm, and a spring mounted on said bolt for retracting the same, said arm being relatively thin at its rear end, then gradually growing thicker towards its forward end, the maximum of said thickness occurring short of the end of

the slot in the arm, and then decreasing in thickness to its extremity.

6. In a door check, a bracket adapted to be attached to a door frame, a longitudinally slotted arm pivoted at one end to said bracket for movement in a horizontal plane, a pintle for pivoting said arm to the bracket provided with a nut, a bracket adapted to be attached to a door having a flat upper face upon which the arm rests, said face having a series of perforations, a bolt passing through one of the perforations of the door bracket and through the slot of the arm, a frictional contact plate on the upper end of the bolt contacting with the upper face of said arm, a coiled spring surrounding said bolt below said bracket, and a nut on said bolt for compressing the said spring, said arm being relatively thin at its rear end, then gradually thickening towards its forward end reaching its maximum thickness at a point just short of the end of said slot, and then decreasing in thickness to its extremity.

7. In a door check, an angular bracket adapted to be attached to a door frame, a bracket adapted to be attached to a door

and having an outwardly projecting portion with a flat upper face, said portion being perforated, a slotted arm pivoted at one end to the door jamb bracket, a pintle bolt for pivoting said arm, a bolt passing through the door bracket and through said slotted arm, a contact disk loosely surrounding the upper end of said bolt and contacting with the upper face of said arm, a nut on the lower end of said bolt, a washer supported by the nut, and a coiled spring mounted on said bolt and held between said washer and the under face of said door bracket, said arm being relatively thin at its rear end beginning at a point rearward of the said slot and then gradually growing thicker at its forward end reaching its maximum thickness at a point rearward of the forward end of the slot, and then decreasing in thickness to its extremity.

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

JOHN P. DENGLER.

Witnesses:

J. A. L. MULHALL,
CHAS. E. POTTS.