

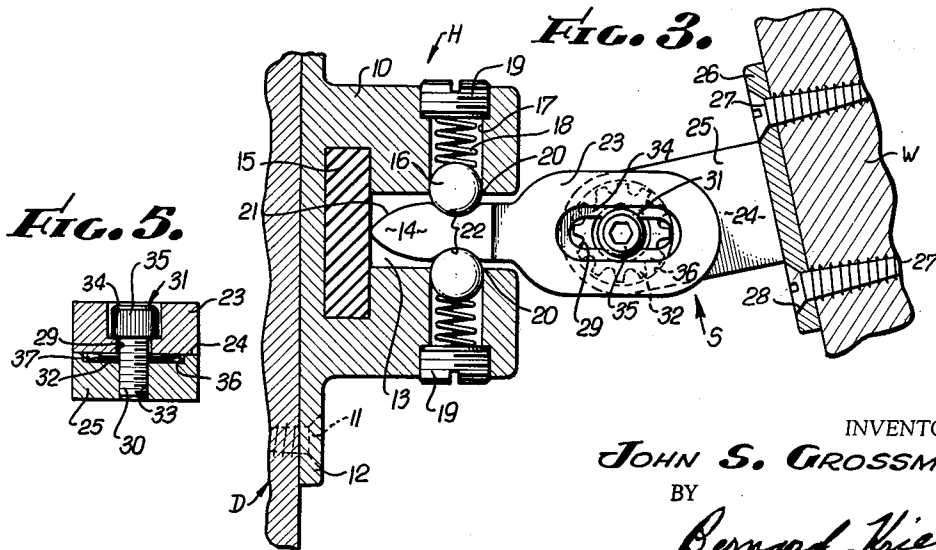
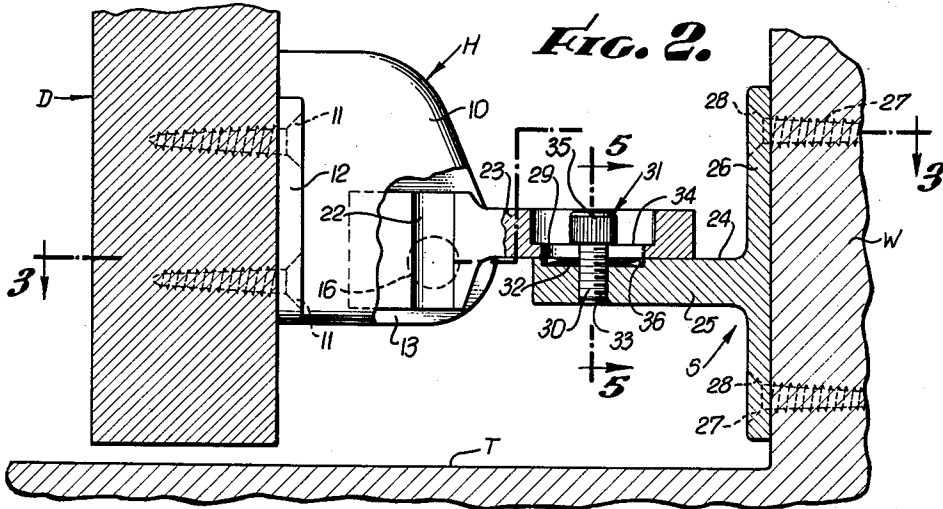
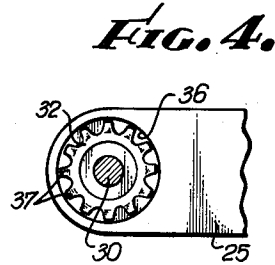
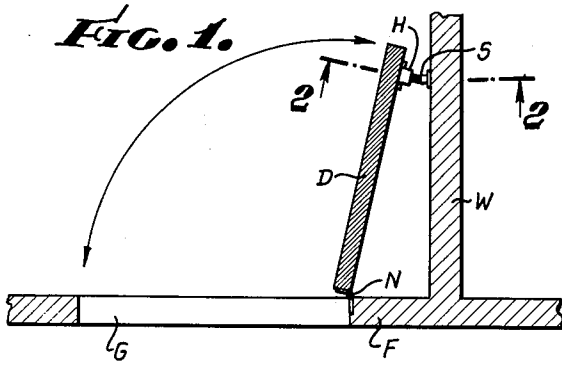
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ADJUSTABLE DOOR STRIKE

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ADJUSTABLE DOOR STRIKE

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The present invention relates to door strikes, and more particularly to strikes for holding doors in open position.

Heretofore, door strikes have been provided for holding doors in open position. A strike might be fastened to a wall and a companion holder to the door, the holder embodying detents for releasable attachment or coupling to the strike. Proper coaction between the holder and strike is only obtainable when the coupling portion of the strike enters the holder at a proper angular relationship, as, for example, when the strike enters the holder and is then normal to the door. The normal or perpendicular relationship between the strike and door cannot always be obtained readily, making it relatively difficult to mount the strike and holder in appropriate position with respect to one another, with assurance that the parts will coact properly.

Accordingly, it is an object of the present invention to provide an improved door strike for coaction with a companion holder, which can be easily adjusted to insure its proper relationship with the holder.

Another object of the invention is to provide a door strike capable of infinite angular adjustment between limits to assure its proper entry into and release from a companion holder.

A further object of the invention is to provide a door strike capable of infinite lengthwise adjustment between limits to assure its proper coupling relation to a companion holder.

An additional object of the invention is to provide a door strike adapted for infinite adjustment between limits both angularly and longitudinally and of being locked or retained in various positions of angular and longitudinal adjustment.

Yet, another object of the invention is to provide an angularly and longitudinally adjustable door strike that is economical to manufacture, and of strong and sturdy construction.

This invention possesses many other advantages, and has other objects which may be made more clearly apparent from a consideration of a form in which it may be embodied. This form is shown in the drawings accompanying and forming part of the present specification. It will now be described in detail, for the purpose of illustrating the general principles of the invention; but it is to be understood that such detailed description is not to be taken in a limiting sense, since the scope of the invention is best defined by the appended claims.

Referring to the drawings:

FIGURE 1 is a horizontal, diagrammatic section through a portion of an enclosure with a hinged door thereon and a companion door strike and holder;

FIG. 2 is an enlarged vertical section taken along the line 2-2 on FIG. 1;

FIG. 3 is a section taken along the line 3-3 on FIG. 2;

FIG. 4 is a top plan view of the fixed arm portion of the door strike with a lock washer in place;

FIG. 5 is a cross-section taken along the line 5-5 on FIG. 2.

As disclosed in FIG. 1, a door D is suitably pivotally mounted, as by means of hinges N, to a door frame F, and is adapted to be swung between a close position across the door opening G and a fully open position, such as disclosed in FIG. 1. The door D can be releasably retained in the open position, as by a proper coaction be-

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tween a holder H and a companion strike S. As shown, the holder may be mounted on the free end of the door D near its lower portion, and the strike S may be mounted at the lower portion of a vertical wall W. For that matter, the strike can, if desired, be mounted on the door and the holder on the wall, such relationship merely representing an interchange in the positions of the parts.

The holder H specifically illustrated includes a body portion 10 fastened to the door, as by means of screws 11 passing through a body flange 12. The body has a vertical central slot 13 therein into which the latch dog or coupling member 14 of the strike device S can enter, the extent of entry being limited by engagement of the forward end or nose of the dog with a rubber or rubber-like bumper 15 suitably mounted in the holder body. The holder has releasable detents mounted therein, which can assume any desired form. As shown, a ball detent 16 is disposed on each side of the slot 13, being slidable in a horizontal bore 17 in the body member, and urged toward the slot by a helical compression spring 18 bearing thereagainst, the outer end of the spring bearing against a spring seat or plug 19 threaded into the body 10 and enclosing the outer end of the bore. The extent of movement of each ball detent element inwardly of the slot 13 is limited by a body shoulder 20 adjacent to its slot engaging the ball, the internal diameter of the shoulder being less than the diameter of the ball 16.

The strike device S is both longitudinally and angularly adjustable so as to be appropriately related to the holder H regardless of the angular position that the door D and holder might occupy with respect to the strike. An appropriate relationship will be provided when the latch dog or coupling member 14 of the strike can be disposed within the body slot 13 substantially centrally thereof, the longitudinal axis of the latch dog lying in the central vertical plane of the slot. The latch dog 14 has a tapered nose portion 21 adapted to engage the ball members 16 and shift them outwardly of the slot 13 against the force of the compression springs 18. After the nose 21 rides past the balls, the latter can move inwardly into concave vertical recesses or grooves 22 on opposite sides of the dog adjacent to its tapered nose, serving to releasably couple or latch the dog 14 to the ball detent elements 16 and to the holder body 10. The latch dog 14 is integral with an adjustable arm portion 23 of the strike, this arm portion resting upon the upper surface 24 of a fixed horizontally extending arm 25 integral with the base 26 of the strike, which may be suitably attached to the wall W of the enclosure or room adjacent to its floor T in any suitable manner, as by means of screws 27 passing through countersunk holes 28 in the base 26.

The adjustable arm 23 has a longitudinal slot 29 therein which is slightly wider than the diameter of the shank portion 30 of a vertical lock screw 31 adapted to pass through the slot, through an underlying lock washer 32 and into a vertical threaded bore 33 in the outer portion of the fixed arm 25. The adjustable arm 23 has horizontal shoulders 34 on opposite sides of its slot 29, and below the upper surface of the arm 23, against which the head 35 of the lock screw 31 can bear when the shank 30 is tightened in the threaded bore 33 in the fixed arm, to press the underside of the adjustable arm 23 against the lock washer 32, which is received within a counterbore 36 in the upper portion of the fixed arm 25 surrounding the threaded bore or hole 33. The lock washer 32 has circumferentially spaced twisted lock teeth 37 thereon which will dig into the base of the fixed arm counterbore 36 and also into the underside of the adjustable arm 23 for the purpose of locking the adjustable arm to the fixed arm upon tightening of the cap screw 31 with its head 35 bearing against the shoulders 34 and disposed substantially below the upper surface of the arm 23.

By loosening the screw 31, the movable arm 23 can be adjusted lengthwise to an infinite degree, within the limits of the length of the slot 29, with respect to the fixed arm 25, and it can also be turned angularly by infinitely small increments with respect to the fixed arm so as to variously position the outer latch dog portion 14 of the adjustable arm and assure its proper reception within the holder slot 13 when the door D is swung to an open position. The fixed portion 25, 26 of the strike S is fastened to the wall W of the room, or other portion of the building, and the holder H is secured to the door. When the door is swung to the fully open position, the screw 31 can be loosened and the movable arm 23 adjusted to insure proper entry of its latch dog 14 within the slot 13, so that the tapered nose 21 can shift the ball detent elements 16 in a direction outwardly of the slot 13 until the nose rides past the balls, whereupon they will be shifted back by the springs 18 into the locking recesses or grooves 22. When the appropriate spacing between the base 26 of the strike and the detent holding position of the balls 16 in the companion grooves 22 has been determined, and when the movable arm 23 has either been placed in a position of alignment with the fixed arm 25 or appropriately angled with respect thereto, the lock screw 31 is tightened, causing the lock washer 32 to embed itself in both the base of the fixed arm counterbore 36 and the underside of the adjustable arm 23, thereby fixedly attaching the movable arm to the fixed arm and retaining it in such position. When the door D is to be released from the strike, the exertion of suitable door closing effort on it will cause the curved walls of the recesses 22 to cam the balls 16 outwardly to a released position from the latch dog 14, whereupon the door can be swung to its closed position.

By virtue of the arrangement disclosed, assurance is had that the adjustable arm 23 of the strike S and its coupling dog or member 14 will appropriately enter the slot 13 of the holder H and be releasably coupled or latched to the holder body 10 through the intermediary of the ball detents 16. Assurance is also had that appropriate release will occur when the door is to be swung to its closed position. The adjustable strike device S is strong and sturdy in construction, and will remain in its position of adjustment until a change in adjustment is desired, which is effected simply by loosening the cap screw 31 and then either longitudinally shifting the movable arm 23 relative to the fixed arm 25, or angularly shifting it with respect thereto, or both longitudinally and angularly shifting the movable arm with respect to the fixed arm, whereupon the screw 31 is retightened to again hold the movable arm in its position of adjustment with respect to the fixed arm. The mechanism is economical to manufacture, possessing a long useful life.

I claim:

1. In a door strike adapted to be coupled to a companion holder: a fixed member adapted to be attached to a wall, or the like; a movable member having a dog portion adapted to be coupled to the holder; one of said members having an elongate slot; a lock washer between said members; and fastening means extending through said slot and washer and threaded to said other of said members to locate said movable member on said fixed member for angular and longitudinal adjustment relative thereto, said fastening means engaging said one member when tightened to clamp said members together in various relative angular and longitudinal positions with said members in locked engagement with said washer.

2. In a door strike adapted to be coupled to a companion holder: a fixed member adapted to be attached to a wall, or the like; a movable member having a dog portion adapted to be coupled to the holder; said movable member having an elongate slot; a lock washer between said members; and fastening means extending through

said slot and washer and threaded to said fixed member to locate said movable member on said fixed member for angular and longitudinal adjustment relative thereto, said fastening means engaging said movable member when tightened to clamp said members together in various relative angular and longitudinal positions with said members in locked engagement with said washer.

3. In a door strike adapted to be coupled to a companion holder: a fixed member adapted to be attached to a wall, or the like; a movable member having a dog portion adapted to be coupled to the holder; one of said members having an elongate slot; the other of said members having a threaded bore surrounded by a counterbore; a lock washer in said counterbore between said members; and threaded fastening means extending through said slot and washer and threaded in said bore to locate said movable member on said fixed member for angular and longitudinal adjustment relative thereto, said fastening means engaging said one member when tightened to clamp said members together in various relative angular and longitudinal positions with the base of said counterbore and said one member in locked engagement with said washer.

4. In a door strike adapted to be coupled to a companion holder: a fixed member adapted to be attached to a wall, or the like; a movable member having a dog portion adapted to be coupled to the holder; said movable member having an elongate slot; said fixed member having a threaded bore surrounded by a counterbore; a lock washer in said counterbore between said members; and threaded fastening means extending through said slot and washer and threaded in said bore to locate said movable member on said fixed member for angular and longitudinal adjustment relative thereto, said fastening means engaging said movable member when tightened to clamp said members together in various relative angular and longitudinal positions with the base of said counterbore and said fixed member in locked engagement with said washer.

5. In a door strike adapted to be coupled to a companion: a fixed member adapted to be attached to a wall, or the like; a movable member having a dog portion adapted to be coupled to the holder; one of said members having an elongate slot and shoulders on opposite sides of said slot and washer; a lock washer between said members; and a screw extending through said slot and threaded to said other of said members to locate said movable member on said fixed member for angular and longitudinal adjustment relative thereto, said screw having a head engaging said shoulders when tightened to clamp said members together in various relative angular and longitudinal positions with said members in locked engagement with said washer.

6. In a door strike adapted to be coupled to a companion holder: a fixed member adapted to be attached to a wall, or the like; a movable member having a dog portion adapted to be coupled to the holder; one of said members having an elongate slot and shoulders on opposite sides of said slot; the other of said members having a threaded bore surrounded by a counterbore; a lock washer in said counterbore between said members; and a screw extending through said slot and washer and threaded in said bore to locate said movable member on said fixed member for angular and longitudinal adjustment relative thereto, said screw having a head engaging said shoulders when said screw is tightened to clamp said members together in various relative angular and longitudinal positions with the base of said counterbore and said one member in locked engagement with said washer.

7. In a door strike adapted to be coupled to a companion holder: a fixed member adapted to be attached to a wall, or the like; a movable member having a dog portion adapted to be coupled to the holder; said movable member having an elongate slot and shoulders on opposite sides of said slot; said fixed member having a threaded bore

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surrounded by a counterbore; a lock washer in said counterbore between said members; and a screw extending through said slot and washer and threaded in said bore to locate said movable member on said fixed member for angular and longitudinal adjustment relative thereto, said screw having a head engaging said shoulders when tightened to clamp said members together in various relative angular and longitudinal positions with the base of said counterbore and said movable member in locked engagement with said washer.

8. In a door strike adapted to be coupled to a companion holder: a fixed member adapted to be attached to a wall, or the like; a movable member having a dog portion adapted to be coupled to the holder; one of said members having an elongate slot and shoulders on opposite sides of said slot disposed inwardly of an outer surface of said one of said members; a lock washer between said members; and a screw extending through said slot and washer and threaded to said other of said members to locate said movable member on said fixed member for angular and longitudinal adjustment relative thereto, said screw having a head engaging said shoulders when tightened to clamp said members together in various relative angular and longitudinal positions with said members in locked engagement with said washer and with said head disposed substantially inwardly of said outer surface of said one of said members.

9. In a door strike adapted to be coupled to a com-

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panion holder: a fixed member adapted to be attached to a wall, or the like; a movable member having a dog portion adapted to be coupled to the holder; said movable member having an elongate slot and shoulders on opposite sides of said slot disposed inwardly of an outer surface of said movable member; said fixed member having a threaded bore surrounded by a counterbore; a lock washer in said counterbore between said members; and a screw extending through said slot and washer and threaded in said bore to locate said movable member on said fixed member for angular and longitudinal adjustment relative thereto, said screw having a head engaging said shoulders when tightened to clamp said members together in various relative angular and longitudinal positions with the base of said counterbore and said movable member in locked engagement with said washer and with said head substantially inwardly of said outer surface of said movable member.

References Cited in the file of this patent

UNITED STATES PATENTS

389,605	Shaw et al. -----	Sept. 18, 1888
769,770	Phelps -----	Sept. 13, 1904
1,022,222	Augenbaum -----	Apr. 2, 1912
1,626,810	Gingras et al. -----	May 3, 1927
2,604,343	Fredholm -----	July 22, 1952
2,642,244	Beach -----	June 16, 1953
2,673,059	Lustig -----	Mar. 23, 1954