Nov. 22, 1955 W. M. DONNELLY 2,724,609

DOOR POSITION CONTROL DEVICE

Filed Dec. 24, 1952

Fig. 1

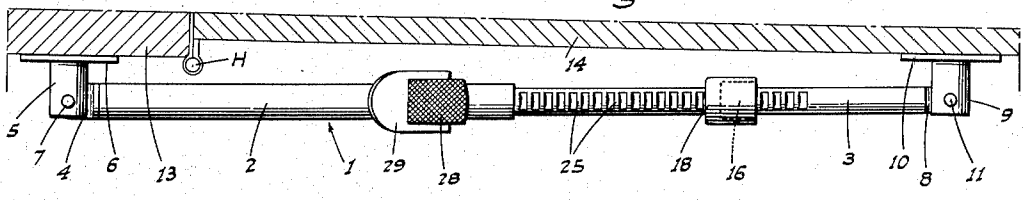


Fig. 2

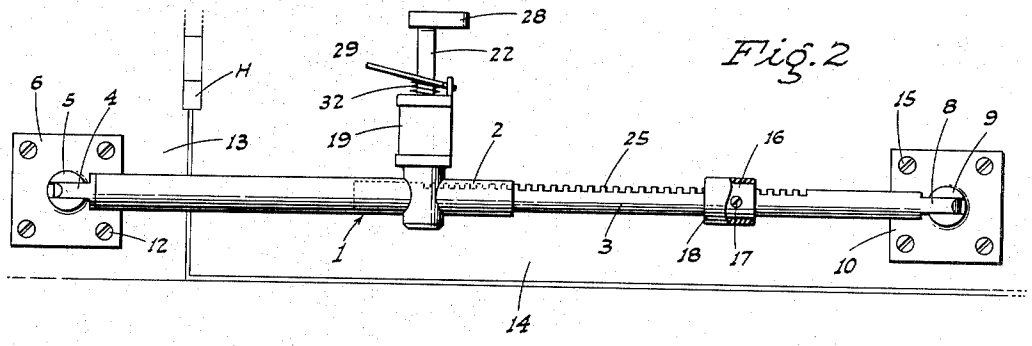


Fig. 3

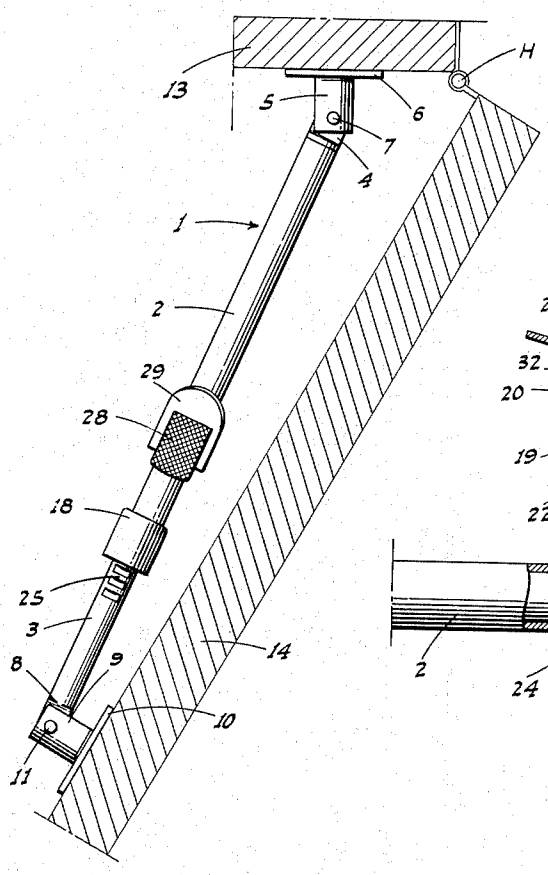
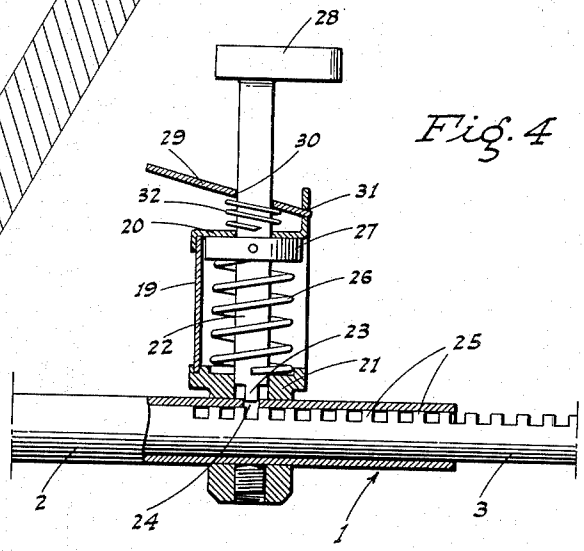


Fig. 4



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DOOR POSITION CONTROL DEVICE

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3 Claims. (Cl. 292—266)

This invention relates to attachments for hinge-mounted doors; the major object being to provide a device, attachable to a door at any point in its height, and having means which will allow the door to be selectively and releasably held against being further opened or closed from any selected open position, without interfering with normal or unrestrained opening and closing of the door when it is not desired to hold the same in any set open position.

Another object is to provide an adjustable stop arranged to limit the extent to which the door may be opened without having to rely on the operation of the selectively actuated holding means, but which does not prevent operation thereof to hold the door at any point between said open limit and the fully closed position of the door.

A further object is to provide an attachment which may be mounted on the door near the bottom or near the top thereof, as may be most convenient and depending on the type of passage or opening to which the door is related.

It is also an object of the invention to provide a device for the purpose which may, without change in its construction, be mounted with its control unit either in an upwardly or downwardly facing position, as may be desired in any particular installation.

It is also an object of the invention to provide a door-position control device which is designed for ease and economy of manufacture.

Still another object of the invention is to provide a practical and reliable door-position control device, and one which will be exceedingly effective for the purpose for which it is designed.

These objects are accomplished by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings:

Fig. 1 is a top plan view of the attachment as mounted on a door and its frame, with the door in a closed position.

Fig. 2 is a side elevation of the attachment as mounted and in the position of Fig. 1.

Fig. 3 is a top plan view of the attachment as in Fig. 1, but with the door opened to a predetermined limit.

Fig. 4 is an enlarged, fragmentary sectional elevation of the device showing particularly the selectively operable holding means.

Referring now more particularly to the characters of reference on the drawings, the device comprises a telescopic unit indicated generally at **1** and which includes a tube **2** and a rod **3** slidably telescoping therein. The tube at its outer end is provided with a horizontal extension ear **4** which engages a boss **5** projecting outwardly from an enlarged bracket plate **6** and to which boss the ear is vertically pivoted as at **7**.

The rod at its outer end is also formed with an ear **8** (the same size as ear **4**) engaging a boss **9** projecting from a bracket plate **10**, and to which boss ear **8** is vertically

pivoted as at **11**. The bracket and boss units are identical, so as to be interchangeable.

Plate **6** is adapted to be secured by screws **12** to the door casing or wall **13** on the opening side of the door **14** near the hinged edge thereof, while the plate **10** is adapted to be secured by screws **15** to the door itself at a point in the width thereof, such that when the door is closed, the unit **1** is fully extended while still retaining the tube **2** and rod **3** partly telescoped with each other so that they remain in alinement and so that they may still be locked together in the manner hereinafter seen. Since the plate **8** is secured on the wall or casing beyond the door hinge H, opening of the door gradually decreases the distance between the bracket pivots **7** and **11**, causing a contracting telescoping of unit **1**, as will be obvious.

To limit such telescoping movement and thus control the extent to which the door may be opened, a collar **16** is slidably mounted on the rod, with a set screw **17** to adjustably secure said collar to the rod. A cushion washer or pad **18** of rubber or leather, is mounted on the collar at one end thereof in facing relation to the adjacent end of tube **2**, so as to engage the same upon a predetermined opening movement of the door (and an accompanying contracting telescoping of unit **1**) having been attained.

In order to hold the unit **1** in any desired predetermined position, either open or closed, a substatnially cylindrical hollow housing **19**, having spaced top and bottom plates **20** and **21** respectively, is secured on and upstands from the tube **2** adjacent its open end. Projecting through and upwardly from the housing and non-turnably slidable through plates **20** and **21** is a plunger **22** having a transverse tooth **23** on its lower end adapted to project through an opening **24** in tube **2** and engage in the notches between adjacent rack teeth **25** cut along the upper face of rod **3**. Tooth **23** is normally held clear of the rack teeth by a compression spring **26** about the plunger within the housing **19**, and bearing between plate **21** and a head **27** fixed on the plunger and which normally bears against plate **20**. The upper end of the plunger is provided with an enlarged head, or pad **28**, by which the plunger may be depressed by foot, or otherwise, without the operator having to bend over.

To releasably hold the plunger depressed, a holding plate **29** has a relatively snug hole **30** through which the plunger projects above the housing. This plate is swingably mounted at one end in connection with the top plate **20** of housing **19**, as at **31**, and is normally held in an upwardly sloping position, so that the back wall of hole **30** binds against the plunger and prevents upward movement thereof, by a compression spring **32** disposed above the plunger and bearing against and between plates **20** and **29**. When the plunger is depressed therefore, and the pressure is released, the plate **29** will automatically hold the plunger against upward movement, and the tooth **23** will be held in engagement with the rack. If the plate **29** is pressed down against the resistance of spring **32**, the grip of said plate against the plunger will be released, allowing spring **26** to immediately lift the plunger and disengage tooth **23** from the rack, thus restoring the telescopic unit **1** to its free-sliding condition.

As shown, the attachment is mounted adjacent the bottom of the door, and the plunger is depressed or pushed downwardly to hold rod **3**. If the device is mounted adjacent the top of the door, the plunger is inverted and is pushed up by hand to a holding position.

The attachment is of general use for doors which must be frequently opened but whose extent of opening should be limited for one reason or another. It is of particular value, however, in connection with doors provided with spring closing checks, but which doors must be held open for various periods to allow of the passage of people or goods therethrough without restriction, and without the

door having to be held open by a temporary stop or other means.

It will thus be seen from the above description that I have produced a device for the purpose which has few moving parts, which will last indefinitely, which will be inconspicuous, which will be silent with normal door operation, and which, if locked when the door is closed, will add to the security afforded by the ordinary lock with which the door may be equipped.

From the foregoing description it will be readily seen that there has been produced such a device as will substantially fulfill the objects of the invention, as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such details may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described my invention, the following is claimed as new and useful and upon which Letters Patent are desired:

1. A door-position control device for a hinge-mounted door comprising a pair of horizontally spaced brackets adapted to be secured to a door on the opening side thereof and to the door casing beyond the hinged edge of the door, a telescopic unit pivotally connected to and extending horizontally between the brackets and extended when the door is closed; said unit including a tubular member projecting from one bracket and a rod projecting from the other bracket and slidable in the tubular member, a row of rack teeth on the rod, a plunger having a rack engaging element on its inner end, a housing fixed on the tubular member in which the plunger is slidably mounted for movement radially of the rod so that the element may engage and disengage the rack at any selected point, a spring mounted in the housing and acting on the plunger to withdraw the element from the rack, an enlarged head on the outer end of the plunger to facilitate manual depression of the same to a rack engaging position, and means mounted on the housing and releasably holding the plunger when depressed in a rack engaging position against the resistance of the spring.

2. A device as in claim 1, in which said means comprises a manually depressible holding plate outwardly of the housing and having an opening through which the plunger projects with a close sliding fit when the plate is disposed at right angles to the plunger, means swivelly mounting the plate at one end on the housing, and a compression spring extending between the top of the housing and the underside of the plate normally maintaining the plate at an angle to the plunger so that the latter will then bind in the plate opening.

3. A door-position device control device for a hinge-mounted door comprising a pair of horizontally spaced brackets adapted to be secured to a door on the opening side thereof and to the door casing beyond the hinged edge of the door, a telescopic unit pivotally connected to and extending horizontally between the brackets and extended when the door is closed; said unit including a tubular member projecting from one bracket and a rod projecting from the other bracket and slidable in the tubular member, a row of rack teeth on the rod, a plunger having a rack engaging element on its inner end, means mounting the plunger on the tubular member for movement radially of the rod so that the element may engage and disengage the rack at any selected point, a spring acting on the plunger normally holding the same clear of the rack, and manually releasable means acting on the plunger to hold the same against disengagement from the rack upon manual depression of the plunger to a rack engaging position.

References Cited in the file of this patent

UNITED STATES PATENTS

991,241	Rae	May 2, 1911
1,325,417	Simpson et al.	Dec. 16, 1919
1,763,238	Hubbs et al.	June 10, 1930
1,927,264	Hoffman	Sept. 19, 1933
2,064,405	Benatar	Dec. 15, 1936

FOREIGN PATENTS

17,224	Switzerland	Dec. 28, 1898
115,422	Australia	June 24, 1942