

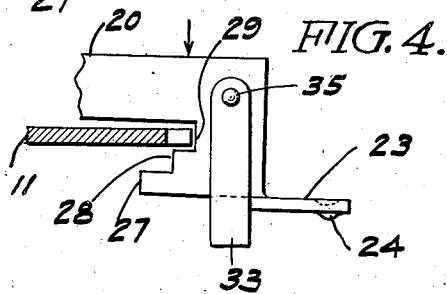
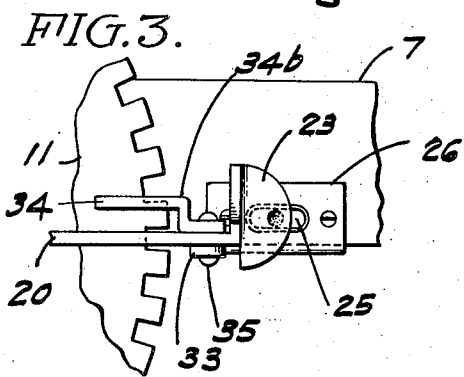
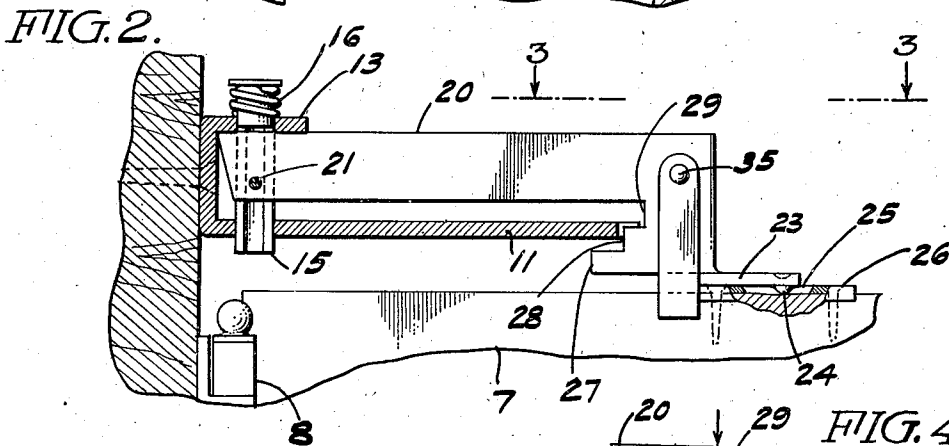
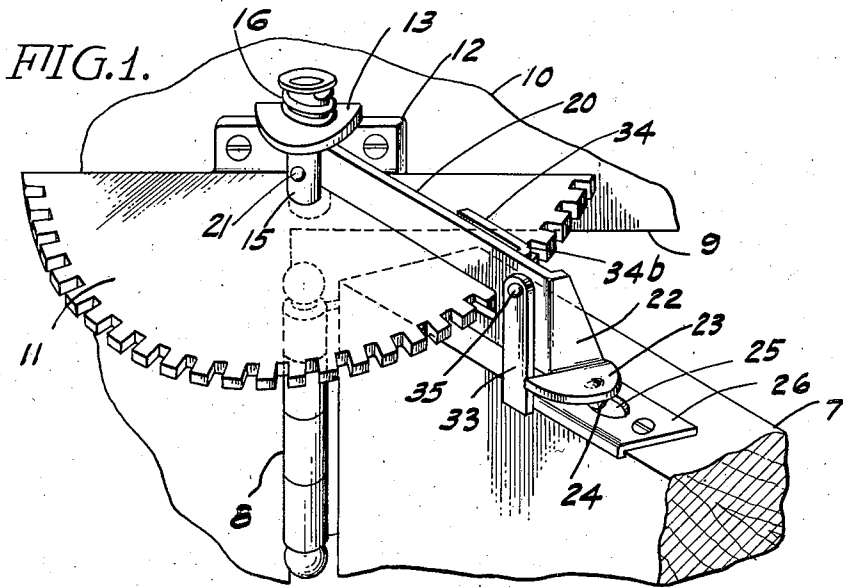
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ADJUSTABLE DOOR HOLDER AND DOORSTOP

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## ADJUSTABLE DOOR HOLDER AND DOORSTOP

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9 Claims. (Cl. 292-341)

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This invention relates to an adjustable door holder and door stop.

An object of the invention is to provide improved means for mechanically holding a door of the swingable type open to any desired extent to improve the ventilation of a room having a door opening with which the door cooperates.

A more specific object is to provide an improved arrangement means incorporated in a single device whereby the door may be mechanically held open to any desired extent, in combination with stop means forming a part of the same device whereby the door may be prevented from further opening when once selectively positioned.

The invention also marks an advance in the crowded art to which it pertains, in that it provides an improved means for setting a door in a more or less open position at a multiplicity of positions, in which the door is held either permanently or temporarily in the adjusted position, at the option of the operator.

Still another and more specific object is to provide an improved combination of a toothed segment, securable in a horizontal position superjacent to a corner portion of a door opening, in combination with manually adjustable means connected both to the door and said segment in a simplified more conveniently operable manner, so as to carry into effect the above stated advantages and features of invention.

Other objects, advantages and features of invention will hereinafter appear.

Referring to the accompanying drawing, which illustrates a preferred embodiment of the invention,

Fig. 1 is a perspective view completely illustrating the device in its operative relation to a swingable door, a fragment of the door and of the wall adjacent to the door opening being included in the view.

Fig. 2 is a vertical section taken through the device as positioned in Fig. 1, the plane of section being alongside the door.

Fig. 3 is a fragmental plan showing a portion of the device on an enlarged scale, the view point for this figure being indicated by line 3-3 on Fig. 2.

Fig. 4 is a reproduction of a right hand portion of Fig. 2, the swingable arm being shown in Fig. 2 in an operative relation to the toothed segment, and being shown in Fig. 4 in an inoperative relation to said segment.

Referring in detail to the drawing, the device is shown in an operative relation to a door 7 supported by hinges 8 one of which is shown in Fig.

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1, to swing to and from a closed relation to a door opening 9 formed in a building wall 10. An approximately semicircular, toothed, horizontal segment 11 is shown fastened to the wall 10 superjacent to an upper corner of the door opening 9. Said toothed segment is provided at the midlength of its straight side with an upstanding mounting flange 12, said flange having an apertured lip 13 extending laterally from it in an overhanging upwardly spaced relation to the segment, there being also an aperture through the segment in vertical alinement with the aperture of said lip. Through these alined apertures extend a headed pin 15, a spiral compression spring 16, being coiled around said pin between the under side of its head and the upper face of said lip.

A swingable door holding arm 20 is, anchored at one end to said pin 15, said arm being shown of the strap metal type and the pin 15 being diametrically slotted from its lower end to a point adjacent to its upper end so as to have inserted into the slot thus provided the inner end portion of said arm 20, there being a pivot pin 21 extending through the pin athwart its slot to secure the arm in the slot as shown. By the arrangement just described, the arm 20 is at times held by the spring 16 in its upper, locking position in relation to the segment 11, as shown in Fig. 2.

The outer end portion of the swingable strap iron arm 20 is shown provided with a beveled, downwardly widening, laterally directed flange 22, said flange having a foot portion 23, which is directed horizontally outward in relation to the arm 20. The said foot portion of the flange carries at its underside a convex projection 24 which at times is in a holding relation to the locking opening 25 in a plate 26 which is fastened in a flatwise manner to the upper surface of the door 7. When the holding arm 20 is in the locked relation to the segment 11 as shown in Fig. 2 the projection 24, owing to the fact that it is in effect beveled at all sides, cooperates with the apertured plate 26, yieldingly to hold the door 7 in the more or less widely opened position to which set by the operator.

In addition to its end flange 22, the locking arm 20 has a vertical, internally projecting, stepped flange 27 which affords a locking shoulder 28 and above said locking shoulder a recess 29. Said locking shoulder 28 is shown positioned to, at times, interengage with the selected adjacent teeth of the segment 11 in order to hold the door open to the desired extent.

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In addition to the already described parts the locking arm 20 has pivoted to it pendant stop fingers 33 and 34. The stop finger 33 is pivoted at 35 to the upper part of the outer end portion of the arm at the side thereof opposite to the arm's flange 22, said finger when in a vertically pendant position contacting the inner side of the foot portion 23 of the arm 20, said foot portion being slightly extended laterally to be engaged by said finger 33. Said finger, in its pendant position, extends down below the upper edge of the door at all times to perform a stop function. The aforesaid finger 34 is of the angular character shown in Fig. 3, and is shown secured swingably to that side of arm 20 which is opposite to finger 33, the pivot pin 35 being common to both of these fingers.

Because of the manner in which the segmental plate 11 is centrally attached to the wall by means of its flange 12, each end portion of the straight side of said plate is spaced away from the wall the thickness of said flange. Room is thus provided at one side of the plate for the aforesaid finger 33 to be swung backwardly behind the plate, thus locking the swingable arm 20 (at this time disengaged from the door) in an inoperative position. In the case of doors hinged at the opposite side of the door opening the angular finger 34 is similarly used to lock said arm 20 at the opposite limit of its swing. The fingers 33 and 34 will necessarily be mounted under a sufficient pressure frictionally to maintain them in their upswung positions behind the segment 11 when said fingers are so adjusted.

Owing to the fact that the flange 22 of the door holding structure at the free end of the swingable arm 20 is laterally directed, the finger 34 is made with a bend 34b thus offsetting its free end portion in such a manner as to compensate for the out-spacing of this finger from the wall when the segment is attached to the wall in the relation to the door opening shown in Fig. 1.

I claim:

1. An adjustable door holder comprising a toothed, approximately semicircular segment mounted superadjacent to an upper corner of a door opening in a horizontally extending position, an upstanding mounting flange carried by the midlength portion of the straight side of said segment, said flange having an apertured lip extending laterally from it in an overhanging upwardly spaced relation to the segment, there being also an aperture through the segment in vertical alinement with the aperture of said lip, vertically movable means having a working fit in the apertures of said lip and segment, a swingable arm having an anchored end secured to said vertically movable means, the free end portion of said arm having a downward extension provided with a notch at times positioned to clear the teeth of the segment and a locking tooth subjacent to said notch at times positioned between adjacent teeth of said segment, and a spring normally holding said swingable arm up sufficiently to bring its locking tooth between adjacent teeth of said segment, said locking arm being manually depressible against the opposition of said spring thus to clear its tooth from the toothed portion of said segment preparatory to swinging the locking arm to a position for engaging its locking tooth with another part of the segment.

2. An adjustable door holder comprising a toothed, approximately semicircular segment

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mounted superadjacent to an upper corner of a door opening in a horizontally extending position, an upstanding mounting flange carried by the midlength portion of the straight side of said segment, said flange having an apertured lip extending laterally from it in an overhanging upwardly spaced relation to the segment, there being also an aperture through the segment in vertical alinement with the aperture of said lip, a headed pin having a rotational and vertical working fit in the apertures of said lip and segment, a swingable arm having an anchored end secured to said pin between said lip and the segment, the free end portion of said arm having a downward extension provided with a notch at times positioned to clear the teeth of the segment and a locking tooth subjacent to said notch at times positioned between adjacent teeth of said segment, and a spring acting between the upper surface of said lip and the head of said pin and normally holding said swingable arm up sufficiently to bring its locking tooth between adjacent teeth of said segment, said locking arm being manually depressible against the opposition of said spring thus to clear its tooth from the toothed portion of said segment preparatory to swinging the locking arm to a position for engaging its locking tooth with another part of the segment.

3. The combination, with a toothed segment mounted superadjacent to a corner portion of a hinged horizontally swingable door, said segment having its teeth extending along an arc struck from the upwardly produced axis of the hinges of the door, mounting means for said segment including an apertured lip projecting laterally over the segment in a vertically spaced relation thereto, a vertical pin turnably and slidably supported by said lip and segment, the upper end of said pin having a head and at all times projecting above said lip, a spring between said head and lip tending to raise said pin, said pin having a slotted portion, a strap iron door holding arm having an anchored end portion fitted into said slot and pivoted to the pin to swing vertically as well as to swing horizontally when the pin turns, said lip having a substantially flat under face against which said spring tends to press the inner end portion of said door holding arm thereby holding said arm substantially horizontal, door holding means carried by the free end portion of said arm and engageable with the door when said arm is horizontal, said arm being manually upswingable against the opposition of said spring to disengage its door holding means from the door, and a tooth carried by the free end portion of said arm and cooperating with the toothed part of said segment to hold the door in the desired position.

4. The subject matter of claim 3, and said door holding means which is carried by the arm comprising a part which engages the top surface of the door and yieldingly prevents its inswing, and a part manually adjustable from a disengaged to an engaging relation to the outer side of the door at times positively to prevent its outswing.

5. An adjustable door holder comprising a toothed, approximately semicircular segment mounted superadjacent to an upper corner of a door opening in a horizontally extending position, a vertically movable arm connected at one end with said segment so as to swing horizontally about the point of intersection of the radii of the toothed portion of the segment, a tooth carried by the free end portion of said arm, a spring posi-

tioned to hold the free end portion of said arm up in an elevated position wherein said tooth interlocks with the toothed portion of the segment, means carried by the free end portion of said arm in engagement with the top surface of the door and yieldingly preventing the inswing of the door when engaged with the door while the arm is in its aforesaid locked relation to the segment, the outer end portion of said arm being manually depressible after the door has been forcibly swung inwardly freeing it from the aforesaid means in engagement with its top surface, thus rendering the outer end of the arm manually depressible to clear its aforesaid tooth from the segment preparatory to re-engaging said tooth with another part of the segment.

6. The subject matter of claim 5, and a part carried by the free end portion of said arm and manually adjustable from a disengaged to an engaging relation to the outer side of the door positively to prevent its outswing beyond a set position of the door.

7. An adjustable door holder comprising a toothed, approximately semicircular segment mounted superadjacent to an upper corner of a door opening in a horizontally extending position, an arm connected at one of its ends to said segment so as to be swingable about the point of intersection of the radii of the toothed portion of the segment, means carried by the free end of said arm in engagement with the top surface of the door and at times yieldingly preventing the in-swing of the door beyond a set position, the door being inswingable at such times by manually applicable force overcoming said yieldable means, a tooth carried by said arm and at times interlockable with the teeth of said segment to hold the door in the desired position, and a locking finger carried by the free end portion of said arm, said finger being swingably adjustable from a pendant position wherein it locks the door against being opened beyond a set position to another position wherein said finger is positioned between the wall and an edge portion of the segment thus holding said arm in an inoperative relation to said door.

8. An adjustable door holder comprising a toothed, approximately semicircular segment mounted superadjacent to an upper corner of a door opening in a horizontally extending position, an upstanding mounting flange carried by the midlength portion of the straight side of said segment, fastening means whereby said flange is secured to the wall thus supporting said segment with the end portions of its straight side slightly spaced from the wall, an arm connected at one of its ends to said segment so as to be swingable

about the point of intersection of the radii of the toothed portion of the segment, means carried by the free end of said arm to lock the arm positively in relation to the toothed portion of the segment and at the same time yieldingly to lock the door in one of a plurality of partially opened positions, and a finger frictionally pivoted to said arm to maintain itself in the adjusted swung position, said finger when adjusted in one position engaging the side of the door to prevent it from opening beyond a set position, and when said door is adjusted to the limit of its swing away from the door opening, said finger being at such a time adjustable to a position between the side of the toothed portion of the segment and the wall to lock the arm against movement.

9. An adjustable door holder comprising a toothed, approximately semicircular segment mounted superadjacent to an upper corner of a door opening in a horizontally extending position, an upstanding mounting flange carried by the midlength portion of the straight side of said segment, whereby said flange is secured to the wall thus supporting said segment with the end portions of its straight side slightly spaced from the wall, an arm connected at one of its ends to said segment so as to be swingable about the point of intersection of the radii of the toothed portion of the segment, means carried by the free end of said arm to lock the arm positively in relation to the toothed portion of the segment and at the same time yieldingly to lock the door in one of a plurality of partially opened positions, said means to yieldingly lock the door being carried by a laterally directed flange formed upon the free end of said swingable arm, and a finger frictionally pivoted to the free end portion of said arm inward of said laterally directed flange, said finger maintaining itself in the adjusted swung position, said finger being usable to lock the arm in a fixed unset position when said segment is mounted at the opposite side of the door opening, said finger having in it a bend thus offsetting its free end portion so as to compensate for the out-spacing of the finger from the wall due to the presence of the aforesaid laterally directed flange of the swingable arm.

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