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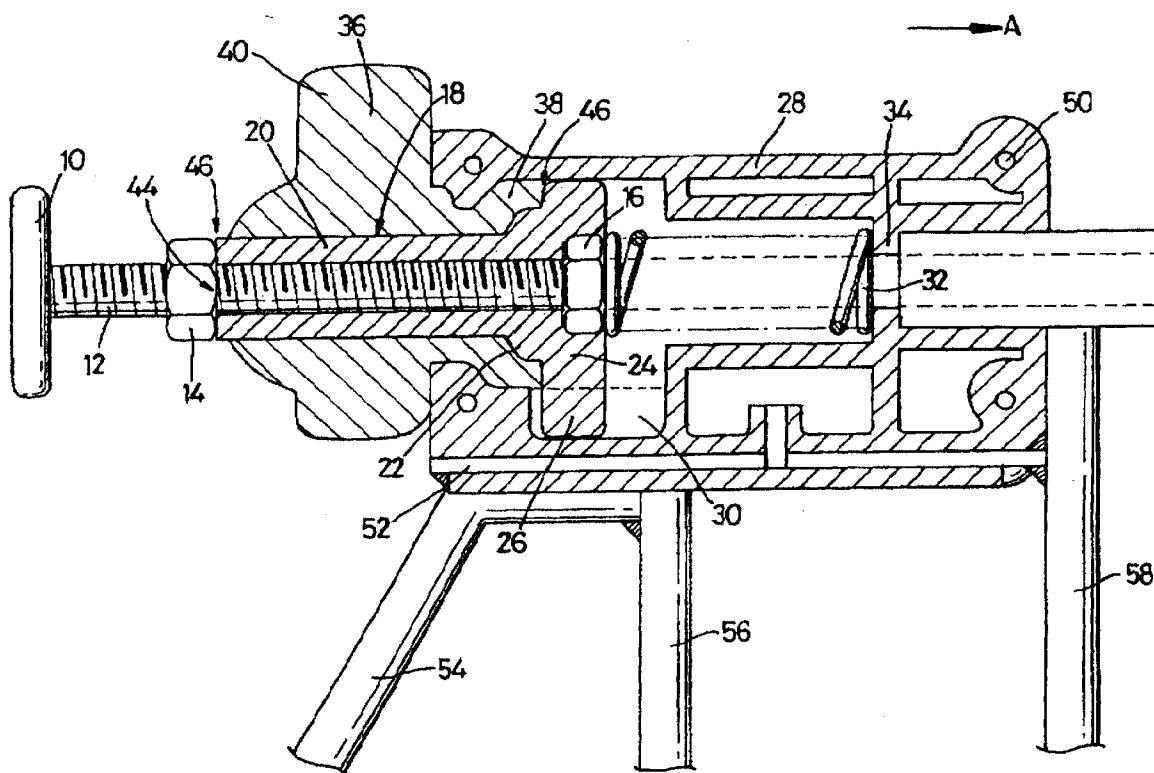
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(54) **Nursery gates**

(57) A gate includes a pressure pad 10 carrying a spindle 12 which is displaceable relative to the gate and

a spring 32 for urging the spindle 12 outwards to engage a wall.



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Description

This invention relates to nursery gates and barriers of a well known kind comprising a threshold strip to extend across a passageway, for example a doorway, or between Newel posts at the top or bottom of a flight of stairs, together with at least a gate-post extending upwardly from the threshold strip, and a gate which may be hinged to the post. The gate may engage with the wall or like at the free-edge opposite to its hinged edge, or there may be a second post extending upwardly from the threshold strip. The complete assembly of threshold strip, post or posts and gate is herein called "gate".

These gates are designed to limit the travel of small children, for example confine them to a single room, or keep them out of a room such as a kitchen, and they are intended to be easily installed and removed by an adult, so that they need only be in place at the times when the children are present.

A common expedient is to provide each of the corners with the gate with horizontal spindles terminating in heads, the spindles being screw-threadedly engaged in nuts in the ends of the threshold strip and at similar positions at the top of the gate. Means are provided to facilitate tool-less manual rotation of the spindles so as to screw them out to cause the heads to engage the walls. Alternatively the spindles carry wing nuts to act as lock nuts, and are located in unthreaded bores in the gate. Either way, the heads are brought into abutment with the opposite walls.

Shallow cups are screwed to the walls in the place(s) where the gate is to be used, to receive the heads and provide location. This means that the spindles merely have to be extended sufficiently to locate the heads within the cups, and that will be enough to retain the gate in position.

The object of the invention is to provide an improved arrangement primarily but not exclusively for cup-less mounting.

According to the invention a gate is provided with a pressure pad carrying a spindle which is displaceable relative to the gate and spring means for urging the spindle in the wall engaging direction.

The invention is based on the idea of determining a desirable loading pressure to be applied to the pressure pad for safe installation of the gate and then providing this pressure by a spring.

The spring is or may be confined in a housing, and almost essentially a degree of adjustment of spindle length is provided to accommodate passageways of different widths. Preferably an indicator is provided to show that the spring is working and that the inventive feature is being employed.

According to a feature of the invention a quick action coupling is incorporated which allows the pressure pad to be manually retracted from the operational position for release of the gate. Preferably an actuator is provided for this purpose arranged to be rotationally free and

axially captive, and adapted so that displacement of the actuator typically in either direction through an angle of upto one quarter of a revolution or perhaps in one direction for half a revolution is sufficient to retract the spindle a substantial distance which means a distance equal to several revolutions of the screw thread which is provided for passage width variation.

It will be appreciated by those skilled in the art that the invention may be needed at only one corner of the gate, and this will normally be at the top rather than the threshold. The corner may be one corner of a U-shaped frame in which the gate per se is mounted, or it may be the top free corner of the gate per se.) The reason for use at one corner which is at the top is because there is greater load applied for example by children pushing the gate at their head height, at the top of the gate rather than the bottom, and moreover pressure pads or the equivalents at the bottom of the gate are likely to be operating against skirting boards which are relatively rigid as compared to the soft plaster which may be encountered by fixings at the top of the gate.

Further features of the invention will be apparent from the following description with reference to the accompanying drawing wherein the sole view is a sectional elevation of the corner of the gate provided with the invention.

In the drawing, the pressure pad 10 may be a rubber moulding around a core which is a disc for example rivetted to the end of spindle 12. The spindle is screw threadedly engaged with a pair of lock nuts 14, 16 located at opposite ends of indicator 18. The lock nuts normally fix the position of the spindle relative to the indicator but allow it to be adjusted to allow for different widths of passageway.

The indicator comprises a tubular barrel 20 provided with a cam formation 22 and a head 24 including radially extending key 26.

The head 24 is a free sliding fit in body 28 but is angularly fast therein for example by the key 26 running in slot 30. Compression spring 32 is trapped between the head 24 and abutment 34 in the body.

The actuator 36 is also captive in the body by the end 38 being trapped in a co-operating cavity. The actuator has an external shape to facilitate manual angular displacement under mere finger pressure, for example by being provided with radial extensions as 40. The actuator has a cam cavity within the head 38 and this co-operates with the cam 22 on the indicator 18, so that when the actuator is turned in either direction, the effect is to displace the indicator 18 bodily in the direction of the arrow A and compress the spring.

The length of the barrel 20 relative to the actuator is such that when the end of the actuator 44 is flush with the adjacent surface of the actuator, there is a substantial clearance at the plane 46 where the head 24 is adjacent the head 38.

In the illustrated position, the clearance has been taken up and the part 24 contacts the part 38 so that a

small portion of the axial length of the indicator 46 projects beyond the actuator and becomes visible. When the end 44 is flush or even recessed below the surface of the actuator only the lock nut 14 is visible at that point.

It would be preferred to make certain of the parts as plastics mouldings taking advantage of colour coding. In this case the actuator 36 and lock nut 14 (although the latter may be of metal) are of colours which contrast strongly with the indicator 18. Preferably the indicator 18 will be made red (for danger) since if the red colour is visible to any substantial extent the effect of the spring is negated and the invention is not operable so that there is a risk of damage to the decorations or more important the pressure plate 10 may be urged against the wall with less than the required pressure.

The body part 28 may be made as a pair of mouldings or possibly diecastings which are secured together by means passing through the four corner holes 50, thus enabling the assembly to be made. The pair of parts 28 may also embrace a formation 52 on the gate with tubular members 54,56,58 extending therefrom.

In the illustrated arrangement the invention is provided on the gate per se rather than on a gate post. In this case the gate per se is hinged to a gate post which extends upwardly from a threshold strip, the strip and post together forming an "L" shaped frame and the three corners of the "L" being provided with more conventional screw fasteners. So in this instance, the arrangement illustrated serves not only to locate the gate in place but also as a latch to hold the gate closed.

In installation, the threshold strip will be adjusted to be in firm clamped position by extending the equivalent of the parts 10,12 at opposite ends of the threshold strip, and then a third clamping spindle which is generally axially aligned with the illustrated one will be extended into approximate position. Finally the spindle 12 will be turned to extend it outwardly and into contact with the wall and this adjustment will be continued until the indicator portion is barely visible at the position 46. The illustrated pad 10 will then be spring urged against the wall, but with a clearance at the point 46 so the spring is completely operational. Release of the gate for opening is effected by turning the actuator 36 to displace the head 30 against the spring so as to lift the pad 10 away from the wall.

When the finger pressure on the actuator is released, the spring may drive the parts to the illustrated position turning the actuator as it does so. Hence, to re-engage the gate in the required position, the actuator will be finger displaced to turn the indicator so as to compress the spring and retract the pressure pad 10. The gate may be swung to the closed position whilst the actuator is so held, and then release of the actuator will automatically allow spring driven return of the pressure pad to fix the gate in position at the required and desirable spring pressure. Alternatively the cam may include a flat, so that the retraction is main-

tained until the actuator is manually returned.

Claims

1. A gate including a pressure pad carrying a spindle which is displaceable relative to the gate and spring means for urging the spindle in the wall engaging direction.
2. A gate as claimed in claim 1, wherein the spring is confined in a housing.
3. A gate as claimed in claim 1 or claim 2 wherein the gate includes means to provide a degree of adjustment of spindle length to accommodate passage-ways of different widths.
4. A gate as claimed in claim 3, wherein an indicator is provided to show that the spring is working.
5. A gate as claimed in any preceding claim, wherein a quick action coupling is incorporated which allows the pressure pad to be manually retracted from the operational position for release of the gate.
6. A gate as claimed in claim 5, wherein an actuator is provided for this purpose arranged to be rotationally free and axially captive.
7. A gate as claimed in claim 6, wherein the actuator is adapted so that displacement of the actuator in either direction through an angle of up to one quarter of a revolution or in one direction for half a revolution is sufficient to retract the spindle a substantial distance.
8. A gate as claimed in any preceding claim, wherein the spring or frame is provided at only one corner of the gate.
9. A gate as claimed in claim 8, wherein the spring means are provided at a top corner of the gate.
10. A gate as claimed in claim 8 or claim 9, wherein the corner is one corner of a U-shaped frame in which the gate per se is mounted, or it is the top free corner of the gate per se.

