Oct. 22, 1957 J. J. BRUNO 2,810,152

HINGES

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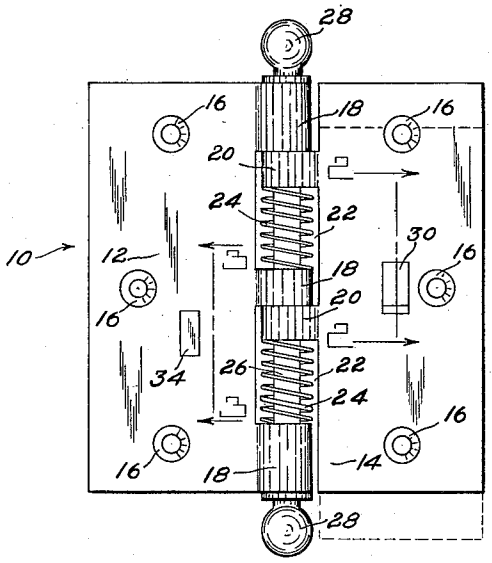


Fig. 1

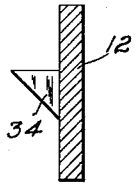


Fig. 3

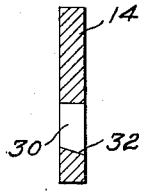


Fig. 2

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2 Claims. (Cl. 16—153)

This invention relates to hinges generally and more particularly to a type of elevating or lifting hinge.

It has long been the practice of home builders to install raised thresholds or sills on all outside doors so as to provide necessary clearance for rugs and carpets as the door is swung inwardly. On all inside doors, however, raised thresholds are impractical, and such doors are provided with sufficient bottom clearance so as to pass easily over any floor covering.

Such clearance however, produces disturbing drafts from unheated rooms, and makes floors uncomfortably cool in the heated portion of the home. Cognizant of this situation, the applicant has as the primary object of his invention, the production of a hinge adapted automatically to elevate the door as it is opened, and lower the door as it is being closed.

Another object of the invention is to provide a hinge of the type previously described, which is quick acting and positive in its operation.

A further object of the invention is to provide a hinge of the type previously described, which has a simplified design and is extremely strong.

A still further object of the invention is to provide a hinge of the type previously described, which may be conveniently adapted to operate doors of different weights.

Numerous features and advantages of the invention will become increasingly apparent, after thorough consideration of a detailed discussion composed with reference to the accompanying drawing constituting a portion of this application, and in which:

Figure 1 is an elevation view of the hinge constituting the applicant's invention, showing the resilient members and location of the slot and wedge elements on the hinge leaves.

Figure 2 is a section view taken substantially on plane 2—2 in Figure 1, showing the characteristic shape of the slot in the hinge leaf.

Figure 3 is a section view taken substantially on plane 3—3 in Figure 1, showing the characteristic shape of the wedge on the hinge leaf.

For a detailed description of the invention, reference is made to the drawing in which numeral **10** designates a hinge having a pair of relatively movable leaves **12** and **14**. A series of spaced and staggered countersunk openings **16** are provided in the leaves **12** and **14** for the reception of mounting screws not here shown.

Three aligned pintle lugs **18** are provided along the inner edge of the hinge leaf **12**. A pair of spaced pintle lugs **20** are formed on the hinge leaf **14** so as to mesh in alternate sequence with the lugs **18**. A space **22** is provided between each of the two pintle lugs **20**, and the associated lug **18** disposed immediately therebelow.

A resilient coiled spring **24** is inserted in each of the spaces **22**, and retained therein by a removable pintle or hinge pin **26**. A head **28** is provided on the removable hinge pin **26** and a similar head **28** is fixed in the bottom pintle lug **18**. A centrally and vertically disposed slot **30**, having an inclined lower face **32**, is provided in the hinge leaf **14**.

A triangular wedge **34**, having a degree of angularity substantially matching that of the inclined face **32**, is welded or otherwise suitably secured to the hinge leaf **12**. The apex of the triangular wedge **34** is disposed slightly above the inclined face **32** of the slot **30**.

The above discussion completes the detailed description of the structure characterizing the preferred embodiment of the applicant's invention; however, to insure a more thorough understanding and appreciation of the subject matter, a brief discussion will be directed to the manner in which the invention is used.

In use, the hinge leaf **12** is attached to the door frame not here shown, and the leaf **14** is connected to the door. As the door is closed, the apex of the triangular wedge **34** enters the slot **30** and forces the hinge leaf **14** to assume the broken line position shown in Figure 1. With the hinge leaf **14** in this offset position, the door attached thereto is lowered an equivalent distance thus reducing floor clearance. As the door is opened, the coiled springs **24**, automatically elevate the door so as to provide the clearance necessary for floor coverings.

In practice, it is desirable to match the strength of the coiled springs **24** in the hinge to the weight of the door it is to support and operate. Springs of the required strength may be inserted in the hinge by the simple expedient of withdrawing the hinge pin **26**, and reinserting the same after the proper springs have been placed in the spaces **22** and aligned with the pintle openings in the lugs **18** and **20**.

Based upon the foregoing discussion, the applicant is of the opinion that his invention has fulfilled a long felt need in the field of building hardware, and has accordingly made a valuable contribution to the related art. However, while the invention was described with reference to the details of a single embodiment, it will be appreciated by those skilled in the art, that the principles involved are susceptible of numerous other practical applications.

Therefore, I claim as new, and desire to secure by Letters Patent:

1. A hinge comprising two leaves, a pintle pivotally connecting the two leaves, resilient means on the pintle yieldably holding the leaves in lateral alignment, a slot in one of the leaves having a transverse lower face and a wedge on the other leaf adapted to make sliding contact with the transverse lower face of the slot as the hinge is being closed thereby producing relative vertical movement between the two leaves, such wedge and slot becoming disengaged when the hinge is open thereby permitting the resilient means to hold the two leaves in lateral alignment.

2. A hinge comprising two leaves, spaced lugs on the leaves, a pintle pivotally connecting the lugs together, a coiled spring on the pintle between at least two of the lugs yieldably holding the leaves in lateral alignment, a slot in one of the leaves having a transverse lower face and a wedge on the other leaf adapted to make sliding contact with the transverse lower face of the slot as the hinge is being closed thereby producing relative vertical movement between the two leaves, such wedge and slot becoming disengaged when the hinge is open thereby permitting the coiled spring to hold the two leaves in lateral alignment.

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