Sept. 15, 1931. J. FABRY 1,823,263

COMBINATION HINGE AND DOORCHECK

Filed April 29, 1929

Fig. 1.

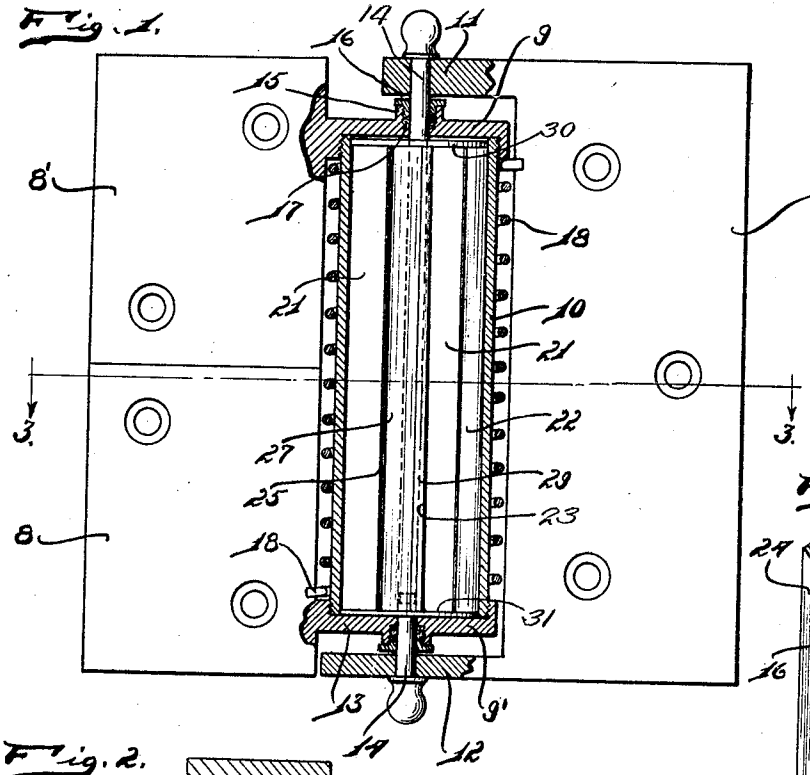


Fig. 5.

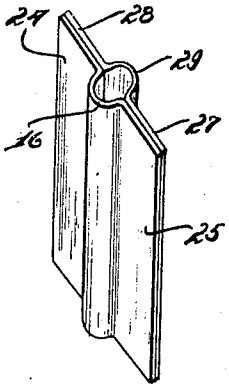


Fig. 2.

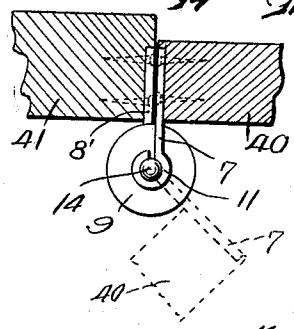


Fig. 4.

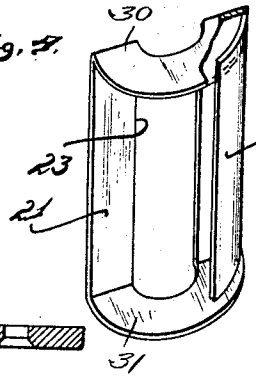
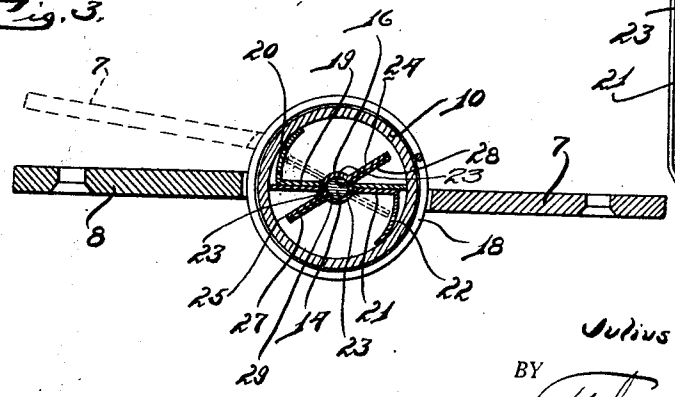


Fig. 3.



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Patented Sept. 15, 1931 1,823,263

UNITED STATES PATENT OFFICE

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COMBINATION HINGE AND DOORCHECK

Application filed April 29, 1929. Serial No. 358,814.

My invention relates to a new and useful improvement in a combination hinge and door check and has for its object the provision of a device which will serve as a hinge for supporting a door in swingable relation, move the door normally to closed position and retard its movement so that a violent closing of the door is prevented.

It is another object of the invention to provide a device of this class which will be simple in structure, economical of manufacture and highly efficient in use.

Other objects will appear hereinafter.

The invention consists in the combination and arrangement of parts hereinafter described and claimed.

The invention will be best understood by a reference to the accompanying drawings which form a part of this specification and in which,

Fig. 1 is a side elevational view of the invention showing the checking mechanism in section.

Fig. 2 is a top plan view of the invention.

Fig. 3 is a view taken on line 3—3 of Fig. 1.

Fig. 4 is a perspective view of one of the retarding plates used in the invention.

Fig. 5 is a perspective view of the resistance plates used in the invention.

As shown in the drawings, the invention comprises a leaf 7 which cooperates with a leaf formed from a pair of sections 8 and 8′. The section 8′ is provided adjacent its upper end with a disc-like projection 9 which is threaded on and serves as a cover for the upper end of the cylinder or barrel 10. A similar projection 9′ projects outwardly from the leaf section 8 and is threaded on to serve as a closure for the lower end of the barrel 10. Knuckles 11 and 12 project outwardly from the leaf 7. Projected through these knuckles, through the disc 9 and the bottom of the barrel or cylinder 10 is a pintle 14 and a stub pintle 14′. Formed on the disc 9 is a packing box 15 in which is threaded the gland 16′ for compressing the packing 17. Embracing the cylinder or barrel 10 is a coil spring 18 which serves normally to retain the leaves 7, 8′ and 8 in aligning position. Mounted in the cylinder or barrel 10 nonrotatably is a plate 19 having the arcuate portion 20 formed at one edge thereof, this plate 19 having an elongated slot 23′. A similar plate 21, which is a duplicate of plate 19, is provided with the arcuate portion 22 and with an elongated slot 23 similar to the slot 23′. The plate 21 is provided with angularly turned, semi-circular ends 30 and 31. A plate is positioned at one side of the pintle 14 and rotatable therewith, this plate having the portions 24 and 25 projecting outwardly from opposite sides of the pintle 14 and provided with the semi-cylindrical portion 16 which embraces the pintle 14 and which is clamped thereto. At the opposite side of the pintle are similar laterally projecting portions 27 and 28 of a plate connected by the semi-cylindrical portion 29. The slots 23 formed in the plates 19 and 21 are sufficiently long to permit the projection of the plates 24 and 28 and 25 and 27 there-through. The invention is adapted to be mounted by the leaf 7 to the door 40, and by the sections 8 and 8′ to the door frame 41.

In assembling the device, the plate with the wings 24 and 25 is welded to the plate with the wings 27 and 28 as shown in Fig. 5 so that the semi-cylindrical portions 16 and 29 will form a tube of sufficient size to receive the pintle 14 in a press fit. The plates 21 and 19 are then secured together as indicated in Fig. 3, the portions 16 and 29 engaging in the slots formed in the plates 19 and 21. Thus the portions 30 and 31 of the plates 19 and 21 are in alignment with each other and provide a circular disc-like end having a central opening. The barrel or cylinder 10 is then threaded onto the disc 9′ which is carried by the hinge section 8. The assembly consisting of the plates 21 and 19 is then inserted into the tube or barrel 10. The spring 18 is then positioned in embracing relation about the barrel or cylinder 10 and the disc 9 is threaded thereon after sufficient oil or other suitable liquid is poured into the barrel or cylinder 10. In threading the portion 9 onto the barrel or cylinder 10, the operation will, of course, be terminated when the leaf sections 8 and 8′ are in alignment. The leaf 7 is then placed in position so that the open-

ings in the knuckles 11 and 12 will register with the openings in the discs 9 and 9'. The pintle stub 14' is then inserted into position as shown in Fig. 1 and the pintle 14 is pressed through the knuckle 11 as a press fit, and into the tubular construction formed by the portions 16 and 29 also in a press fit so that when the leaf 7 swings on the pintle as an axis, the pintle 14 is rotated as is likewise the construction embodying the wings 24 and 25, 27 and 28.

In operation, the cylinder or barrel 10 is filled or partially filled with a fluid, preferably oil. When the leaf 7 is moved relatively to the leaves 8' and 8, the arcuate portions 22 and 20 will move relatively to the laterally projecting plate portions 24 and 28 and 25 and 27 into the positions shown in dotted lines in Fig. 3. In this movement, the liquid between the plates 23 and 24 and the plate 19 and the liquid between the plate portions 27 and 25 and the plate 21 will be squeezed outwardly between the inner surface of the barrel and the edges of these plate portions. As these edges approach the arcuate portions, the space for the flowing of the oil becomes diminished and a retarding of the movement of the leaves 7 and 8 and 8' relatively to each other is effected.

While I have illustrated and described the preferred form of my invention, I do not wish to limit myself to the precise detail of structure shown but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A combination hinge and door check of the class described comprising: a hinge leaf; a cylinder forming barrel; a pair of sections cooperating to form a cooperating hinge leaf; a threaded projection extending outwardly from one edge of each of said projections, each of said sections being threadable on said barrel for forming a closure therefor; knuckles projecting outwardly from said first mentioned hinge leaf; a pintle projecting through said knuckles and through said closures and extending axially of said barrel for swingably mounting said hinge leaf relatively to said hinge leaf sections, said pintle being rotatable with said first mentioned hinge leaf.

2. In a device of the class described, a cylinder forming barrel; a pintle extending axially of said barrel and rotatable; a pair of plates secured together face to face, each of said plates having at its central axis an outwardly pressed semi-cylindrical portion to provide a cylindrical sleeve for reception of said pintle in a press fit; and a pair of plates each having a slot formed therein for accommodating said outwardly pressed portion and each having an arcuate portion engageable with the side walls of said cylinder.

In testimony whereof I have signed the foregoing specification.

JULIUS FABRY.