

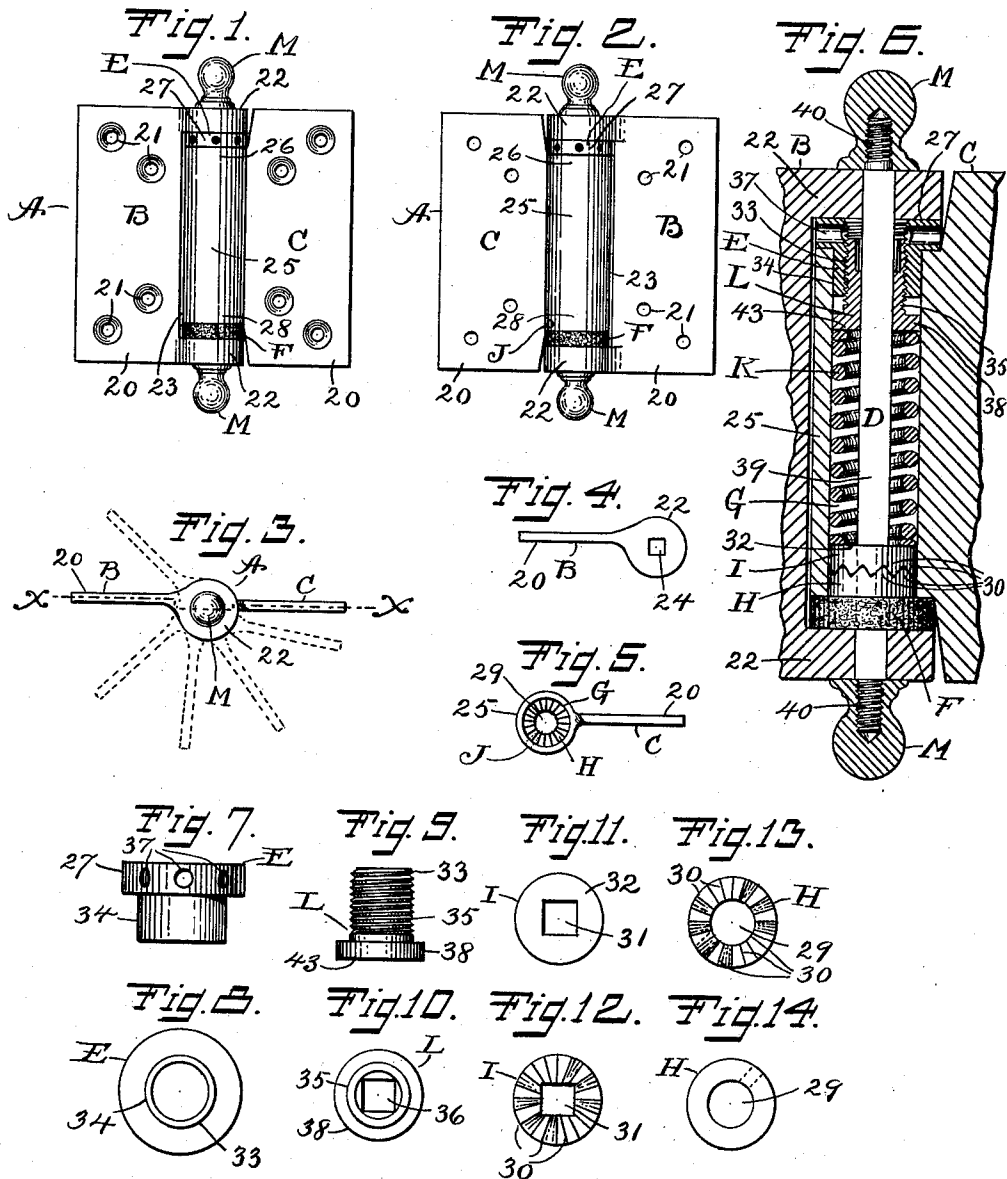
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HINGE.

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1,078,002.

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Witnesses

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HINGE.

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To all whom it may concern:

Be it known that I, FREDERICK SCHREY, a citizen of the United States, residing at New Rochelle, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Hinges, of which the following is a specification.

My invention relates to improvements in hinges of the style that have means permitting of setting or positioning the two leaves at different angular positions relatively one to the other and locking means tending to hold the said leaves at the positions to which they are set, and the objects of my improvements are to provide spring holding means, and means for adjusting the tension of the spring and to provide such means as are convenient and efficient in operation.

In the accompanying drawing:—Figure 1 is a side elevation of my improved hinge. Fig. 2 is a rear elevation of the same. Fig. 3 is a plan view of the same. Fig. 4 is a plan view of the left leaf member. Fig. 5 is a plan view of the right leaf member. Fig. 6 is a sectional view on the line *x x* of Fig. 3, in part broken away, and on an enlarged scale. Fig. 7 is a side elevation of one of the adjusting members. Fig. 8 is a plan view of the same. Figs. 9 and 10 are views similar to Figs. 7 and 8, of the other adjusting member. Fig. 11 is a plan view of the movable locking member. Fig. 12 is a bottom view of the same. Figs. 13 and 14 are views similar to Figs. 11 and 12, of the fixed locking member.

A is my hinge and comprises a left member B and a right member C, connected together by a joint comprising a combination of a pivotal connection and an adjustable stop device to be described. The left member B comprises a hinge leaf 20, comprising a plate like member having holes 21 for supporting screws and along the inner edge has at each end a knuckle 22, the two constituting a pair of end knuckles, separated by a space 23. The end knuckles 22 are provided with holes 24 that are square sided and in axial alinement and which holes are a fit for the square body of an axial bar or shaft D. The right wing C comprises a hinge leaf 20 and integral with one end thereof an intermediate knuckle 25, suitable for being received in the said space 23 between the end knuckles 22 and provide space between the upper end 26 and the upper end knuckle 22

for the head 27 of an adjusting member E and also if desired, to provide space between the lower end 28 and the lower end knuckle 22 for a fiber washer F, which serves as a bearing member. The intermediate knuckle 25 is bored longitudinally to provide a chamber G suitable for housing mechanism to be described.

In the lower end of the chamber G there are positioned a pair of locking members having engaging jaws comprising a lower locking member H and an upper locking member I. The lower locking member H fills the lower end of the said chamber G and is secured in position by a radial pin J, has an axial hole 29 that is circular of size such as to permit the square shaft D to turn therein and is provided on the upper face with a set of radial teeth 30. The upper locking member I is essentially the same as the fixed locking member H reversed, except that it is provided with a square axial hole 31 that is an operative fit for the axial shaft D, and the outer wall is a fit for the cylindrical wall of the said chamber G, whereby the upper locking member I is free to turn and move longitudinally in the chamber G, guided axially by the axial shaft D. The said jaws or teeth 30 are so shaped that when held in resilient engagement under normal conditions in a manner to be described, they will prevent relative turning of the leaf members B and C under normal or moderate conditions tending to effect such movement, but under abnormal conditions and a strong tendency to produce a relative turning movement, the said jaws or teeth will slide relatively one to another, raising the upper jaw member I, and will permit such movement, the jaws 30 again engaging after the desired change in position has been effected.

The upper face 32 of the upper locking member I is an annular plane surface, suitable for a bearing for the end of the spring K. The said spring K is a coil spring, surrounding the axial shaft D, and occupies the greater part of the chamber G, the lower end resting on the annular bearing surface 32 of the upper locking member I and the upper end is similarly engaged with the lower end 43 of the sliding member L of an adjusting device to be described. The said adjusting device comprises the sliding member L and the turning member E that are engaged by their cylindrical and sleeve-like

body portions by means of an axial thread 33, the turning member E exterior to the said sliding member, and the cylindrical exterior of body portion 34 of the turning member E being an operative fit for the cylindrical chamber G and engaged therewith, and the body portion 35 of the sliding member L being provided with a square sided axial hole 36 that is a fit for the axial shaft D and received thereon.

The turning member E is provided at the upper end with the said head 27 that is annular in formation and fills the space between the intermediate knuckles 26 and the upper end knuckles 22 and is provided with a plurality of radial holes 37 suitable for receiving a turning pin or equivalent means for turning the turning member E for purpose of adjustment.

The sliding member L is provided on the lower end with an annular head 38 that fits across the said chamber G and which has the spring bearing surface 43 as mentioned on the lower end.

As shown the fiber member F is interposed between the lower end knuckle 22 on the one side and on the other side the concentrically arranged locking member H and the end of the intermediate knuckle 25.

The said axial shaft D comprises a straight rod having a square sided body 39 that extends through the joint mechanism described and through the end knuckles 22, and the ends 40 extend beyond the said end knuckles 22 and are provided with screw threads suitable for receiving end positioning nuts M. The latter bear against the end knuckles 22 and may be in the form of ornamental cap nuts as shown.

As described, the axial shaft D is operatively a fixed member of the left wing B and is positively moved and turned therewith, whereby the left leaf 20 constitutes essentially a handle for turning the shaft D. The shaft body 39 being square as described and engaged with the upper locking member I, turns the same with the shaft D, and any tendency to turn the ring members B and C relatively to one another is resisted by the engagement of the jaws or teeth 30 the amount of such resistance being dependent upon the amount of tension applied to the spring K by the adjusting device.

The tension of the spring K is due to the compression by the ends thereof between the lower and upper spring bearing surfaces 32 and 43 respectively. The adjustment of the said tension is effected by turning the adjusting members E and L relatively one to the other, in which operation a pin is used

in the holes 37 for turning member E and the sliding member L is prevented from turning by the engagement of the square axial hole 36 thereof with the shaft D, and which engagement permits of a sliding of the sliding member along the shaft in response to a turning of the turning member E. Accordingly, as described, my hinge has means for resiliently resisting the relative movement of a door or window and the casing to which the same is applied and is provided with means for readily adjusting the amount of such resistance.

I claim as my invention:—

1. A hinge comprising a pair of leaves connected together by a joint comprising a pair of jaws held in engagement by a spring, means of adjustment of the said spring comprising a pair of adjusting members respectively an inner member and an outer member engaged one with the other by a screw thread, the outer of the said adjusting members accessible and having means for being turned for purpose of adjustment, and the inner of the said adjusting members provided with means for preventing rotative motion thereof and permitting of movement axially in response to a turning movement of the said outer adjusting member comprising a square shaft engaged with an axial hole in the said inner adjusting member.

2. A hinge comprising a leaf having a pair of end knuckles provided with square holes in axial alinement and a square shaft rigidly secured therein, and a second leaf provided with an intermediate knuckle having an axial chamber surrounding the said shaft, and separated at one end from one of the said end knuckles by an annular adjusting head, a pair of locking members having coacting jaws at the other end of the said chamber, one being fixed to the said intermediate knuckle and free to turn on the said shaft, and the other free to turn in the said chamber and a fit for and free to slide along the said shaft, a sliding adjusting member having a hole fitting and surrounding the said shaft, and provided with screw thread engagement with the said adjusting head, and a spring surrounding the said shaft and engaged by its ends with the said other locking member on one end and the said sliding adjusting member on the other end.

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Witnesses:

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