Nov. 24, 1925.

1,562,774

W. L. KAUFMANN

HINGE

Filed May 17, 1924

FIG. 1.

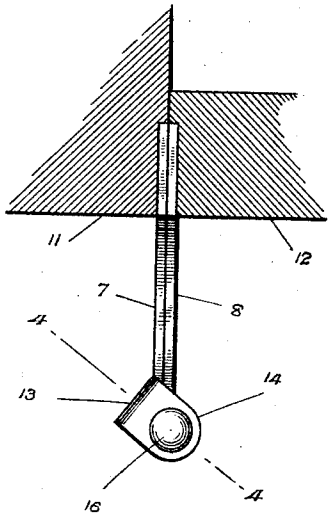


FIG. 2.

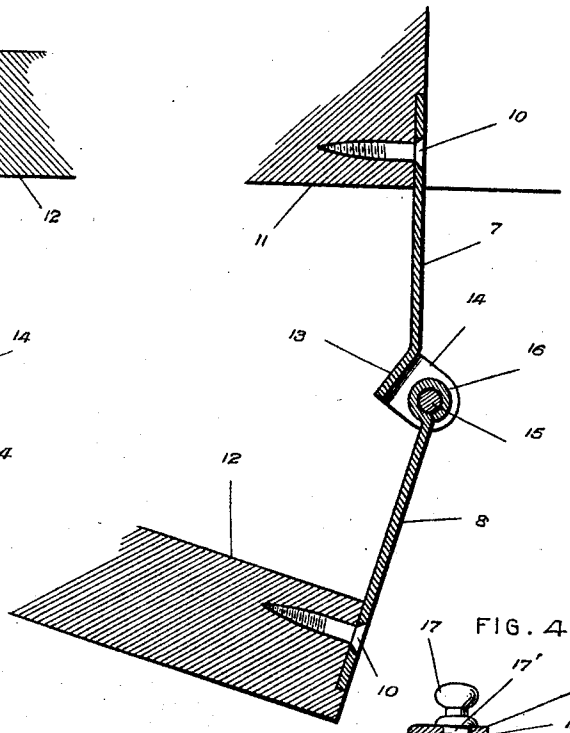


FIG. 3.

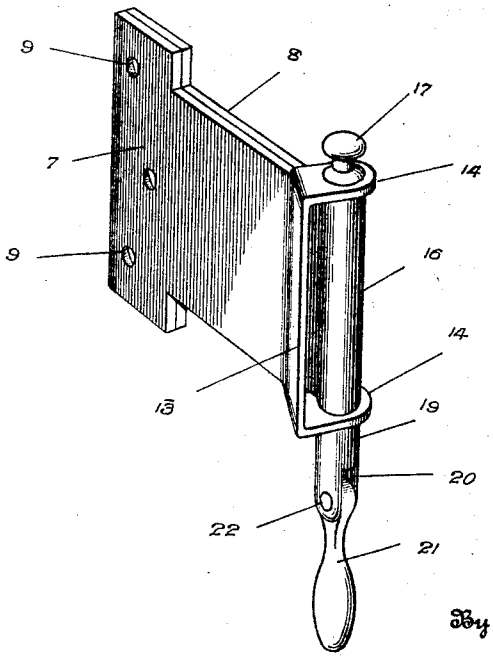
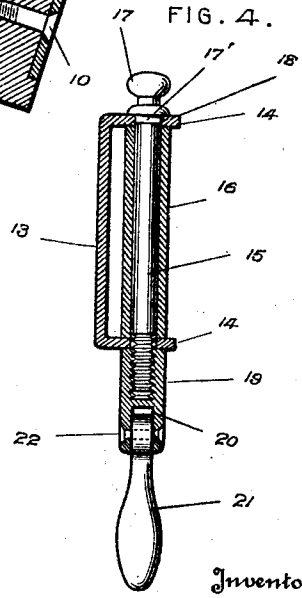


FIG. 4.



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Patented Nov. 24, 1925. 1,562,774

UNITED STATES PATENT OFFICE.

WALLER LOUIS KAUFMANN, OF SANTA ANA, CALIFORNIA.

HINGE.

Application filed May 17, 1924. Serial No. 714,002.

To all whom it may concern:

Be it known that I, WALLER L. KAUFMANN, a citizen of United States, residing at Santa Ana, in the county of Orange and State of California, have invented certain new and useful Improvements in Hinges, of which the following is a specification, reference being had therein to the accompanying drawing.

The present invention relates to hinges, and aims to provide a novel and improved hinge for casement windows, French doors, and the like, having means for holding the sash or door in different positions to which it is swung.

Another object is the provision of a hinge having a novel joint between the leaves and capable of being tightened for frictionally clamping the parts together to hold the leaves in different relative positions.

A still further object is the provision of such a hinge having a novel construction and assemblage of the component elements, whereby the hinge is particularly useful and advantageous for the intended purposes.

With the foregoing and other objects in view, which will be apparent as the description proceeds, the invention resides in the construction and arrangement of parts, as hereinafter described and claimed, it being understood that changes can be made within the scope of what is claimed, without departing from the spirit of the invention.

The invention is illustrated in the accompanying drawing, wherein—

Figure 1 is a plan view of the improved hinge with the sash or door in closed position, the sash or door and frame or casing being shown in section.

Fig. 2 is a horizontal section of the hinge showing the sash or door swung open.

Fig. 3 is a perspective view of the hinge.

Fig. 4 is a vertical section on the line 4—4 of Fig. 1.

The two leaves 7 and 8 of the hinge are stamped or otherwise formed from suitable sheet metal and are finished in any manner desired. Said leaves have the holes 9 at their attaching portions for the reception of screws 10 which fasten the leaves to the casing or frame 11 and the sash or door 12, as usual with butt hinges. The present hinge is adapted especially for use as a butt hinge although it can be used for other purposes. The hinge is particularly intended for use on casement windows, French doors, and the like.

The leaves 7 and 8 are preferably extended so as to project from the parts to which they are secured, and permit the sash or door to swing open with a considerable clearance between it and the casing or frame, as seen in Fig. 2.

The end portion 13 of the leaf 7 opposite to the end portion which is attached to the frame or casing 11, is bent at an obtuse angle and is provided with the upper and lower ears 14 extending at right angles therefrom, and said ears 14 are disposed horizontally so as to intersect the vertical plane of the leaf 7. A vertical hinge pin 15 extends through the ears 14, and the end portion of the leaf 8 opposite to the portion which is attached to the sash or door 12 is bent into a sleeve 16 loosely embracing the pin 15 and having its ends abutting the ears 14. With the present construction, the leaves 7 and 8 can swing together, as seen in Figs. 1 and 3. The portion 13 being bent at an obtuse angle away from the plane of the leaf 7 will accommodate the sleeve 16, and the ears 14 extend across the ends of the sleeve 16. The ears 14 are resilient so that they can be sprung toward one another against the ends of the sleeve 16 for clamping the leaves in different positions. The axis of the pin 15 is in the plane of the leaf 8, as seen in Figs. 1 and 2, and the leaf 8 is flat or straight from the sleeve 16 to the opposite extremity or attaching portion of the leaf. The leaf 7 is also flat or straight from the portion 13 to the opposite extremity or attaching portion of the leaf. Therefore, the leaves 7 and 8 bear flatly together, as seen in Figs. 1 and 3, and this permits the leaf 8 to be straight or flat from its attaching portion to the sleeve 16. The axis of the sleeve 16 is also in the plane of the leaf 8, with said sleeve extending to opposite sides of said plane.

In order to secure the leaves when swung to different positions relatively to one another, the pin 15 comprises a clamping bolt, having an ornamental head 17 at its upper end, and a square or non-circular portion 17′ immediately adjacent to or underneath the head to fit in an aperture 18 in the upper ear 14 of similar outline, so as to prevent the pin or bolt 15 from turning relatively to the leaf 7. A nut 19 is screw-threaded on the lower terminal of the pin

or bolt 15 and bears upwardly against the lower ear 14, while the head 17 seats on the upper ear 14. The nut 19 is of cylindrical form and of a diameter to correspond with the sleeve 16, giving the impression that the nut 19 is an extension of the sleeve 16. The nut 19 has its outer terminal bifurcated, as at 20, to receive one end of a handle or tail piece 21 which is pivoted in the slot of the nut by a rivet 22. The handle 21 can thus be swung about the pivot 22, but will normally swing down to pendant position, said handle being of ornamental appearance.

The nut 19 can be conveniently rotated for loosening and tightening the hinge joint with the sash or door 12 closed or in different positions when swung open. Thus, the handle 21 is swung upwardly to position substantially at right angles with the pin or bolt 15, and the handle can thus be turned as a lever for rotating the nut 19 to either tighten or loosen the nut. When the nut is tightened on the pin or bolt 15, the ears 14 are sprung toward one another against the ends of the sleeve 16 for clamping said sleeve between the ears, so that the friction is sufficient to prevent accidental swinging of the leaf 8 about the pin 15.

The hinge is reversible, inasmuch as either leaf can be secured to the frame or casing, and the hinge can be used at either side of the frame or casing. The hinge can also be turned up-side down, and the pin or bolt 15 can also be used in either position, that is, with the nut 19 at the bottom or top. The construction of the hinge is simple so that manufacture thereof is economical, and the hinge is neat and attractive in appearance as well as serving its purpose efficiently.

Having thus described the invention, what is claimed as new is:—

1. A hinge comprising a pair of leaves having attaching portions, one leaf having a portion at the extremity opposite to the attaching portion extending at an obtuse angle to one side from the plane of said leaf and provided with angularly extending ears projecting toward the opposite side and intersecting said plane, a pin extending through said ears, the other leaf having a sleeve at the extremity thereof opposite to the attaching portion, said sleeve embracing said pin with its ends abutting said ears, the first named leaf being flat between the second named portion thereof and the attaching portion, the second named leaf being flat from said sleeve to the attaching portion, said leaves being adapted to bear flatly together, the axis of said pin and sleeve lying in the plane of the second named leaf, and means on said pin for springing the ears toward one another to clamp the sleeve between them.

2. A hinge comprising a pair of leaves, one leaf having angularly extending resilient ears, a pin extending through said ears and having a head bearing against one ear and a non-circular portion engaging said ear to prevent the pin from turning relatively to said leaf, the other leaf having a sleeve loosely embracing said pin between and in abutment with said ears, a nut threaded on the pin and bearing against the other ear for springing the ears toward one another to clamp the sleeve between them, and a handle pivoted to said nut to be disposed in alinement or at an angle with said pin.

In testimony whereof I hereunto affix my signature.

WALLER LOUIS KAUFMANN.