J. H. DAUGHERTY.

SHUTTER HINGE.

APPLICATION FILED NOV. 22, 1909.

956,304.

Patented Apr. 26, 1910.

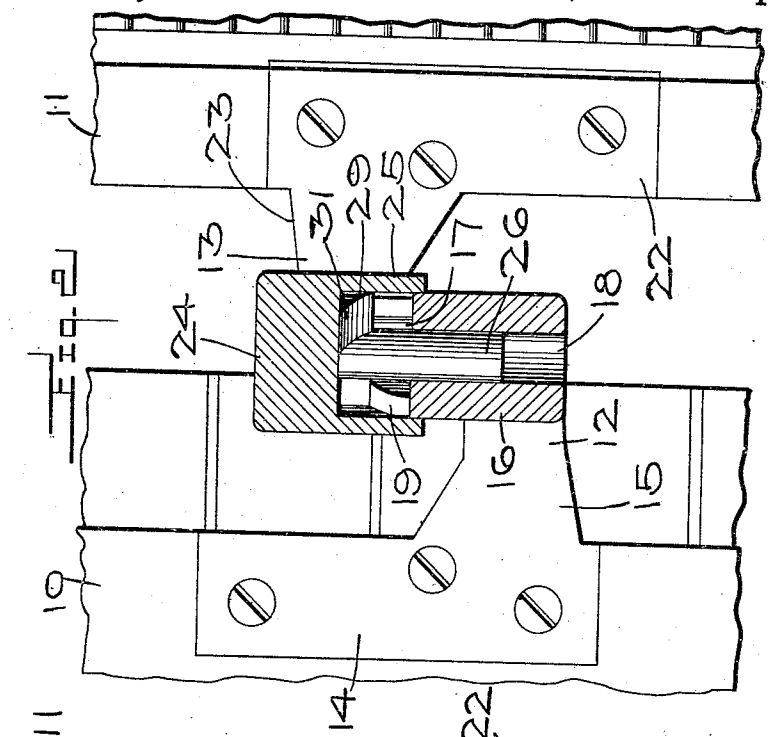

FIG. 2.

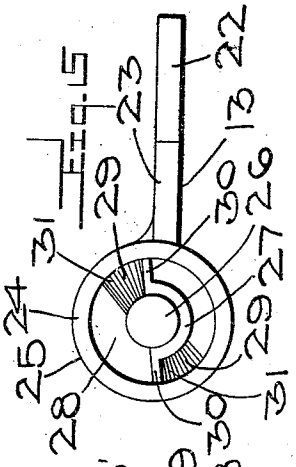

FIG. 5.

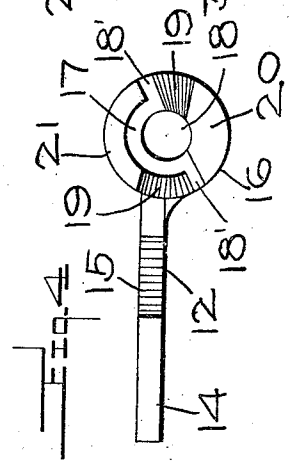

FIG. 4.

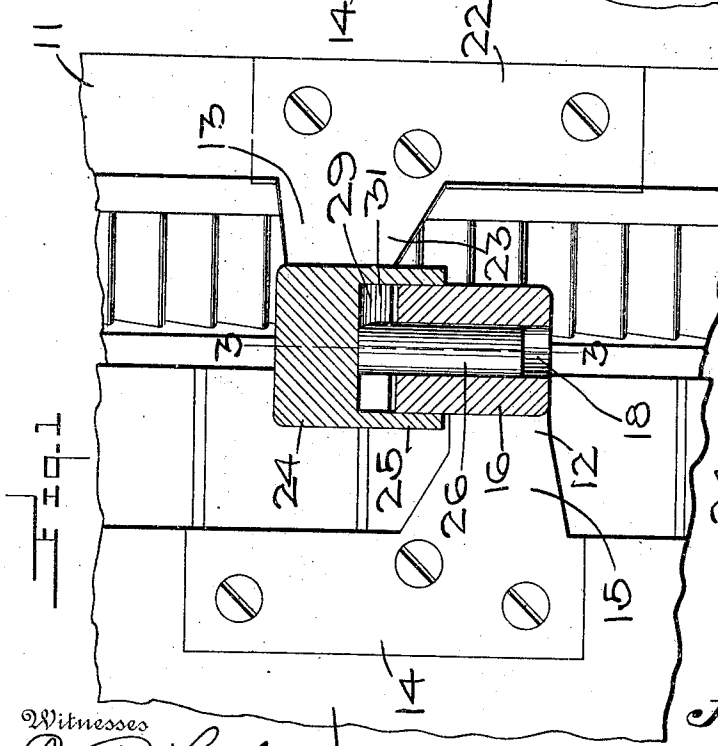

FIG. 1.

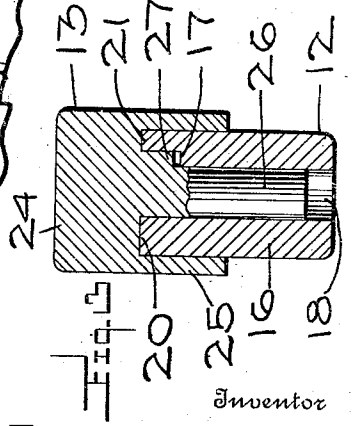

FIG. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

JEREMIAH H. DAUGHERTY, OF ROYALTON, PENNSYLVANIA.

SHUTTER-HINGE.

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To all whom it may concern:

Be it known that I, JEREMIAH H. DAUGHERTY, a citizen of the United States, residing at Royalton, in the county of Dauphin and State of Pennsylvania, have invented certain new and useful Improvements in Shutter-Hinges, of which the following is a specification.

This invention relates to builders' hardware, and more particularly to shutter hinges, and has for its object to provide a shutter hinge which will yieldably lock the shutter in open position, and which will at the same time provide a firm bearing support for the shutter when in closed position.

An important object is to provide a hinge so constructed that the frictionally engaged parts will be protected from the elements.

A further object is to provide such a device which may be economically manufactured and which may be used in the same manner and situations as hinges already in use.

A further important object is to provide such a device occupying a minimum amount of space and requiring a minimum amount of material for its manufacture.

Another object is to provide such a device comprising a minimum number of parts.

Other objects and advantages will be apparent from the following description, and it will be understood that changes in the specific structure shown and described may be made within the scope of the claims without departing from the spirit of the invention.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a fragmentary elevation of a shutter equipped with the present device and in open position, part of the cutter casing being broken away, Fig. 2 is a similar view showing the shutter partly closed, Fig. 3 is a vertical section on the line 3—3 of Fig. 1, Fig. 4 is a top view of the base section, Fig. 5 is a bottom view of the top section.

Referring to the drawings, there is shown a window casing 10 upon which there is supported a shutter 11 of any usual type by means of a hinge comprising the present invention. The hinge comprises the base section 12 and the top section 13 each cast integrally. The base section comprises the leaf portion 14 from which extends an arm 15 supporting at its outer extremity the pin sleeve 16, which at its upper end is provided with the semicircular recess or socket 17 circumscribing the usual bearing opening 18. Suitable cam notches 18′ are formed at opposite sides of the sleeve at its upper end, the notches being provided with vertical faces adjacent the radial terminations of the recess 17, and inclined faces 19 oppositely thereof the inclined faces extending in a common direction peripherally. It will thus be noted that the upper end of the sleeve is provided with a thickened seat portion 20 at one side, and at the other side an attenuated seat portion 21.

The base section as described is secured to the left hand side of the window frame, and the upper section 13 is carried by the shutter. The upper section comprises a leaf portion 22 similar to that of the base section, from the upper end of which extends the arm 23 corresponding to the arm 15 of the base section and carrying at its outer extremity the superior member of the hinge in the form of a cap 24 having the circumscribing wall 25 adapted to completely encircle the sleeve 16, as shown. Projecting centrally downward from the cap there is the usual pin member 26, and at its base there is formed the semicircular shoulder 27 arranged concentrically of the pin and leaving a space 28 between its outer side and the wall 25. At each end of the shoulder 27 there are formed cam lugs 29 having the radial supporting portion 30 from which extend the inclined cam faces 31 extending in a common direction peripherally of the cap.

It will be observed that the sleeve portion 16 is offset outwardly a slight distance from the major plane of the leaf 14, as shown in Fig. 4, and the cap portion is similarly offset from the leaf 22. The notches 18′ are formed on a line inclined slightly from the plane of the leaf 14, the inner one being disposed upon the forward side of the section. The lugs 29 are similarly disposed in the upper section, and are adapted to rest snugly in the notches so that the upper section will be held inclined rearwardly. The inclined faces of the lugs are opposed to the inclined portions of the notches, so that under force the upper section may be rotated forwardly lifting the upper section against the action of gravity upon any weight imposed thereon. It will be seen that as soon as the radial portion 30 of the upper section

passes the inclined face 19 of the lower section, the shoulder 27 will have become superposed upon the thickened upper portion of the sleeve 20 whereby a larger bearing surface is afforded and wear upon the lugs 29 reduced to a minimum.

It will be seen that when the shutter is in partly or completely closed position the sleeve portion 25 projects slightly below the full depth of the notches, so that access of water, or snow, is effectually prevented. The arm 15 is disposed adjacent the lower end of the leaf 14, and is spaced sufficiently below the upper end of the sleeve 16 to allow free movement of the sleeve 25 downwardly when the device is in open positon. It should also be noted that the notches 18′ are greater in depth than the height of the lugs 29, so that when the device is in open position the upper section of the hinge is supported entirely upon the upper end of the sleeve 16, the radial portions 30 of the lugs being held out of frictional engagement with the bottoms of the notches. This is an important function, as if this radial portion of the lugs should be worn down, upon closing of the device, the shoulder 27 would not be lifted properly into position above the thickened bearing portion 20 of the sleeve 16.

In use, this hinge is secured to the shutter and frame with any of the usual fastening devices, and it will be seen that the frictionally engaged portions will be thoroughly protected from corrosion under the action of water. In the use of prior hinges of this type it has been found a great fault that the contacting cam portions become rusted together, the free movement of the shutter being prevented, and frequently resulting in breakage of the hinge when an attempt is made to close the shutter.

Another great advantage of the present hinge lies in the fact that a lubricant may be applied thereto without danger of its being entirely washed away or dried up by the action of rain and wind, whereas in usual hinges, the use of a lubricant would be almost useless, as it would soon be lost.

The preceding description is directed to hinges for the left side of windows, but it will be understood that it is simply necessary to incline the cam faces of each member in a direction opposite that of the form illustrated.

What is claimed is:

1. A device of the class described comprising an inferior member adapted to be secured upon a stationary support and including a vertical sleeve portion, and a superior portion adapted to be secured upon a member to be supported, said superior portion comprising a pintle member adapted for revoluble engagement in said sleeve, and a cap over said pin adapted for revoluble circumscribing engagement over said device.

2. A device of the class described comprising an inferior member having a vertical sleeve portion provided with cam notches at its upper end and a superior member having a pintle adapted for revoluble engagement in the sleeve and carrying cam lugs at the base of the pintle for coengagement with said cam notches, and a circumscribing cap portion adapted to project downwardly around said sleeve for revoluble movement thereover.

3. A device of the class described comprising an inferior member including a securing flange, a laterally extending arm portion adjacent one end of the flange and a sleeve portion carried at the outer end of said projecting portion and extending a spaced distance therefrom in spaced relation with said flange; and a superior member including a similar flange and lateral extension carrying a pintle adapted for revoluble engagement in said sleeve and a cap portion surrounding the pintle and adapted for loose engagement over the sleeve.

4. A device of the class described comprising a base section and an upper section, said base section comprising a securing flange and a supporting sleeve integrally connected therewith and extending inwardly in spaced relation therewith, the upper end of the sleeve being provided with cam notches having inclined faces extending in a common direction peripherally of the sleeve and having a concentric semicircular recess terminating adjacent each notch; and an upper section comprising a securing flange and an integral inwardly extending cap portion disposed in spaced relation therewith and adapted for encircling engagement with the sleeve, a pintle member projecting longitudinally from the interior of the cap and adapted for revoluble engagement in said sleeve, cam lugs formed within the cap at the base of the hinge and adapted for coöperation with the notches for the purpose described, and a semicircular shoulder formed concentrically against the base of the pin and adapted to lie at times in said semicircular recess, and adapted to lie at other times in superposition upon the upper end of the sleeve opposite said recess.

In testimony whereof I affix my signature, in presence of two witnesses.

JEREMIAH H. DAUGHERTY.

Witnesses:

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F. H. RIDGWAY.