H. J. GAGNON.

HINGE CONSTRUCTION.

APPLICATION FILED APR. 10, 1919.

1,360,284.

Patented Nov. 30, 1920.

2 SHEETS—SHEET 1.

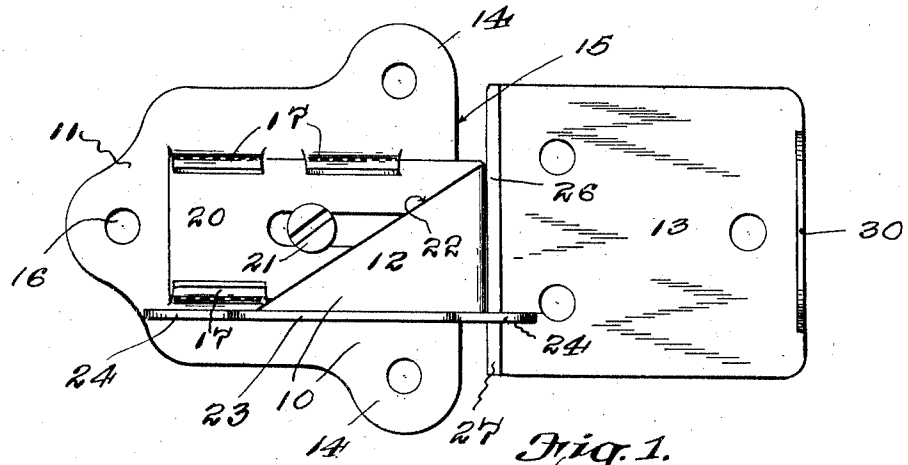

Fig. 1.

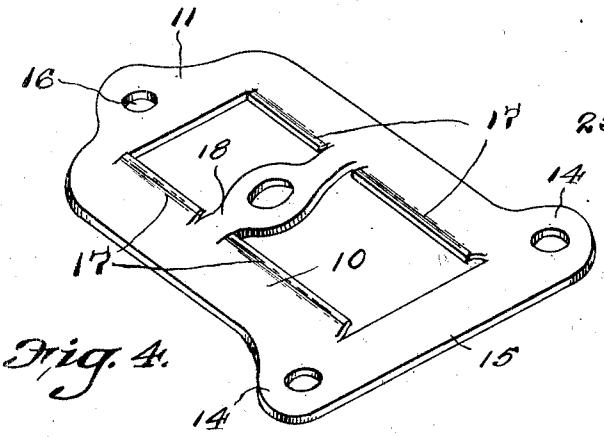

Fig. 4.

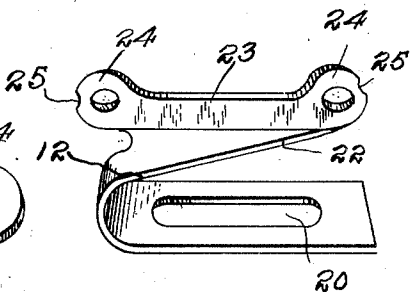

Fig. 5.

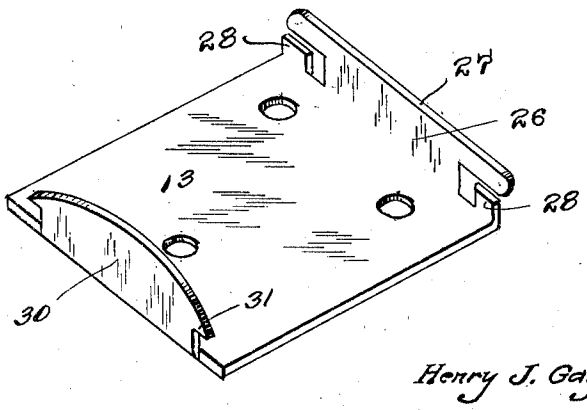

Fig. 6.

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2 SHEETS—SHEET 2.

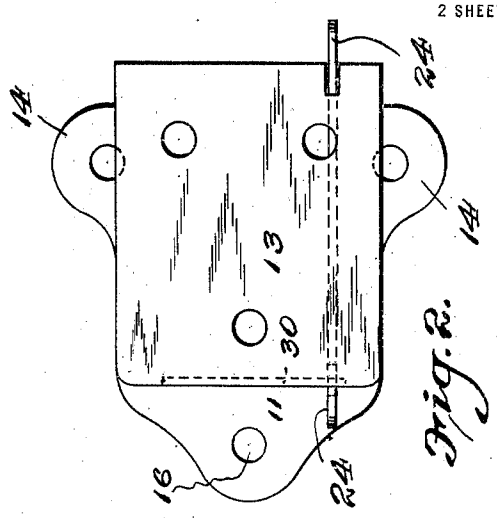

Fig. 2.

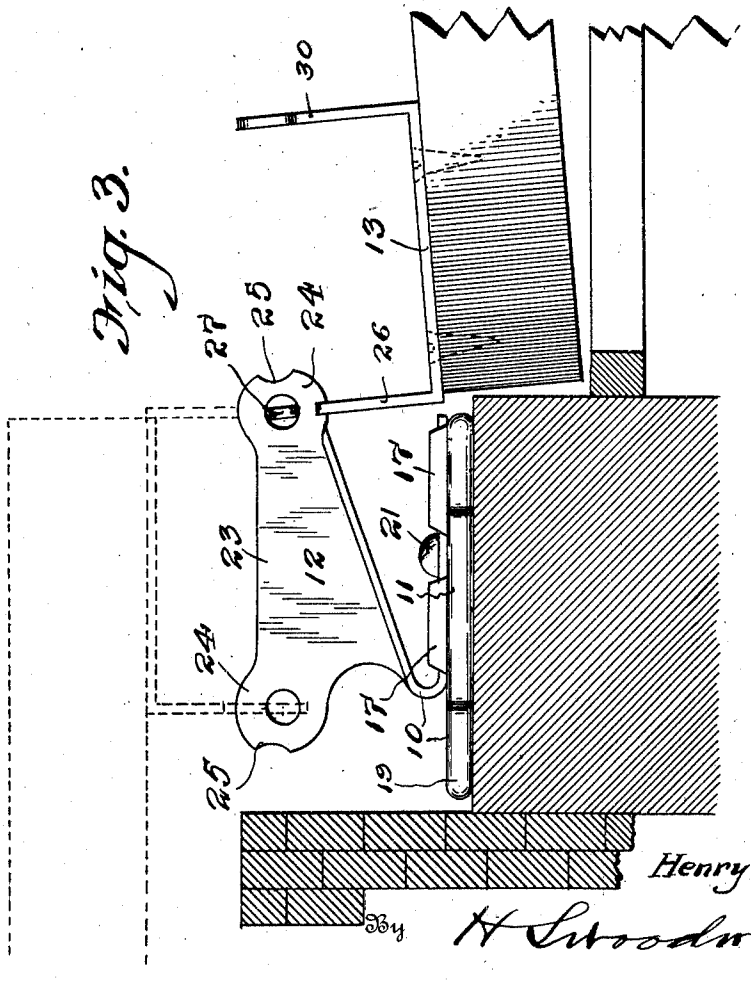

Fig. 3.

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UNITED STATES PATENT OFFICE.

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HINGE CONSTRUCTION.

1,360,284. Specification of Letters Patent. Patented Nov. 30, 1920.

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To all whom it may concern:

Be it known that I, HENRY J. GAGNON, a citizen of the United States, residing at Cohoes, in the county of Albany and State of New York, have invented certain new and useful Improvements in Hinge Constructions, of which the following is a specification.

This invention relates to hinges, especially hinges suitable for mounting of shutters, and similar uses, and has for an object to provide a hinge which will be adjustable, so that in the fitting of shutters and the like, a minimum of labor will be required in cutting, et cetera, in order to adjust the hinge member to the frame.

It is an important object to enable the adjustment of the action of the pivot with relation to the frame at any time, without requiring detachment of the stationary element of the hinge from the frame, while yet affording ample rigidity in the base element and security in the hinge mounting. A further aim is to give a hinge with an efficient means for holding it in open position, especially valuable in use with blinds. A further aim is to give a novel and efficient means for retaining the shutter against accidental dismounting, while yet enabling its ready dismounting, manually, when so desired, without the use of tools.

It is an important aim to give a construction of hinge which, in use with the mounting of shutters will enable the emplacement and removal of storm-windows without requiring detachment of the hinge base from the window frame, and upon removal of the storm window and replacement of shutters, the construction of my hinge is such that it will enable mounting of shutters readily in interchangeable position, without requiring refitting.

It is also an important aim of the invention to enable the manufacture of such a hinge economically and in a durable form.

Additional objects, advantages and features of invention will appear from the construction, arrangement and combination of parts as hereinafter described and shown in the drawings representing one embodiment of the invention, wherein,

Figure 1 is a view of the hinge device assembled and in closed position,

Fig. 2 is a view of the hinge in open position,

Fig. 3 is a bottom view of a hinge in use upon a frame and shutter,

Fig. 4 is a detail of the base element,

Fig. 5 is a detail of the adjustable bearing and stop of the base element,

Fig. 6 is a detail of the swinging element of the hinge.

There is illustrated a hinge comprising the base piece 10, formed in two parts, including the base proper 11, and an upper adjustable construction 12; and a swinging leaf 13, all of these parts being stamped from sheet metal. The base plate 11 has two ears 14 at its upper and lower sides adjacent the inner edge 15, the ears being apertured to receive securing screws as shown in Fig. 3. An apertured ear 16 is also formed at the outer side of the plate. Parallel guide and retaining inclined flanges 17 are struck from the plate toward its outer side, to receive another plate slidably thereunder against the plate 11, as will be subsequently described. These flanges are four in number arranged in opposed pairs, and in rectilinear alinement at each side. Between the ears a bar 18 extends across the opening formed by the striking up of the flanges, the bar being centrally apertured to receive a set screw as will be subsequently indicated. The edges of the plate 11 may be rolled as at 19, (Fig. 3) lifting the plate from the surface on which it may be mounted and giving space thereunder where the end of the set screw may be accommodated. The adjustable section 12 comprises a slotted tongue portion 20, of a width and thickness to engage snugly under the flanges 17 of the plate 11 for sliding movement over the end portions of the plate and the bar 18. This tongue is secured adjustably upon the plate 11 by means of the set screw 21, engaged through the slot and in the aperture of the bar 18. The tongue portion 20 is extended upwardly and inwardly at an acute angle over the plate 11, the edge portion of the tongue immediately over the slot of the tongue is cut away as at 22 to enable the use of a screw-driver upon the screw 21 when in engaged position. Upon the upper and outer inclined portion of the tongue an anchor plate 23 is formed, bent to lie in a plane at right angles to the slotted portion of the tongue and in alinement with the adjacent edge of the slotted portion. Similar apertured ear portions 24 are formed at the

ends of the plate 23, and in the outer sides of these ears notches 25 are formed, the purpose of which will be explained. Either of the ears 24 will serve as a pivot ear when the device is applied to use, while the other will serve for coöperation with a locking tongue to be described.

The swinging leaf 13 comprises a rectangular body plate suitably apertured for receiving securing screws, from one end of which a substantially T-shaped pivot piece 26 is extended at right angles to the plane of the plate, the stem portion being considerably broadened, while the arm portions comprising pivots 27 are of a size to fit snugly and revolubly in the apertures of the ears 24 before mentioned. The stem of the pivot piece 26 is considerably narrower than the body plate of the leaf, and formed on the edges of the plate beside the stem and in the same plane, there are retainer ears 28, spaced from the stem portion thereof sufficiently to receive the ears 24 therein at times, and stopping short of the pivots 27 a distance slightly greater than the breadth of metal between the notches 25 and apertures of the ears 24. In this way, the leaf member may be positioned with one pivot 27 alined with the aperture of the ear 24, and the lug 28 alined with the adjacent notch 25, and the pivot inserted through the aperture. Upon moving the swinging leaf pivotally then, the broader portion of the ear 24 will pass within the lug 28, preventing removal of the swinging member from the base member of the hinge. At the opposite edge of the body plate of the member 13 from the part 26, there is formed a locking ear 30, extended at right angles to the body of the plate from the same side as the portion 26, and at its upper and lower edges provided with bills 31, having inclined outer edge portions positioned at such a distance from the pivot 27 that when a pivot is engaged in one ear 24, the bills will strike the opposite ear 24 of the base element of the hinge, and ride upon the last mentioned ear until they engage in the aperture thereof, thereby holding the hinged portions against relative movement until the swinging portion is lifted to disengage the bill from the aperture or until the ear 24 is depressed to clear the bill 31. The space between the lug 28 and the portion 26 is sufficient to permit the necessary movement in lifting the swinging element to disengage the bill from the aperture as described.

In use, the base plates 11 are all engaged upon the frame in the same position with respect to the frame opening, at its upper and lower parts, while the swinging leaves 13 are engaged upon the shutter element vertically spaced a distance corresponding to the spacing of the base plates 11. The adjustable base sections are then put in place, those at one side having the bend in the tongue 20 presented away from the window opening, while those at the opposite side have the bends presented toward the window opening. In order to mount shutters, the latter, having the leaves 13 in place are presented in a plane at right angles to the medial plane of the frame and the lower pivots 27 thereon presented over the openings in the ears 24 adjacent the window opening, when the shutter may be dropped into place and turned to bring the broad portions of the ears 24 between the lugs 28 and stems of the parts 26.

When the shutter is swung to open position as shown in Fig. 2, the bill portion 31 will ride upon the ear 24, lifting the shutter until the bill drops into the apertures of the ears, the bill having vertical edges at their inner sides so that return movement of the shutter is prevented, unless the shutter is lifted sufficiently to disengage the bill from the apertures in which they are engaged. Casual disengagement of the shutter in this operation is prevented by the lugs 28, as will be understood.

In order to adjust the shutter horizontally to fit snugly in the window opening, the screw 21 may be loosened and the slotted tongue portion slipped longitudinally beneath the flanges 17 until the object is attained.

When storm sash are to be put in place, the shutters may be lifted from their mountings by moving them into position at right angles to the plane of the frame and lifting them slightly. The adjustable sections of the hinge bases are then moved laterally outward from the opening a sufficient distance to clear the storm sash as it is put in place.

What is claimed is:

1. A hinge comprising a base element and a swinging element, the base element including an attaching section stamped from sheet metal having parallel ears inclined toward each other at one side of the plate, and an adjustable section slidable upon the attaching section under said ears having a part bent backwardly thereover and having outer apertured terminal parts bent into a plane at right angles to that of the attaching section; and pivotal connections between the swinging element and said adjustable section.

2. A hinge comprising a base member in two sections, one having a horizontal guideway therein and the other being slidable in the guide-way, means to secure the sections in adjusted position, horizontal oppositely presented apertured ears formed upon the adjustable member notched at one portion, and a swinging leaf including a body plate having outstanding end portions extended at right angles thereto, one end portion hav-

ing vertically and oppositely extended pivot arm portions adapted for engagement in said apertured ears, lugs being formed on the body plate spaced from said pivot arms pass through said notches simultaneously with engagement of the arms in the apertured ears, and adapted to receive the broader portion of the ears therewithin, for limited relative vertical movement, the other outstanding member on the body plate having a bill adapted to engage an aperture of the other ear at the base member, for the purposes described.

3. A hinge comprising a base plate portion having a longitudinal guide therein, and an adjustable section thereon comprising a longitudinally slotted tongue slidable in said guide portion, the tongue being bent inwardly over the slotted portion and extended a distance at an acute angle thereto, and having an integral pivot plate portion at its outer part bent to lie in a plane at right angles to the plane of the slotted part of the tongue and alined with one edge thereof, said plate being formed with apertured ears at each end and notched on its end edges, and a pivot element including vertical pivot arms adapted to be inserted through the apertures of said ears.

In testimony whereof I have affixed my signature in presence of two witnesses.

HENRY J. GAGNON.

Witnesses:
MOISE A. GRANGER,
ALFRED J. GAGNON.