

No. 725,435.

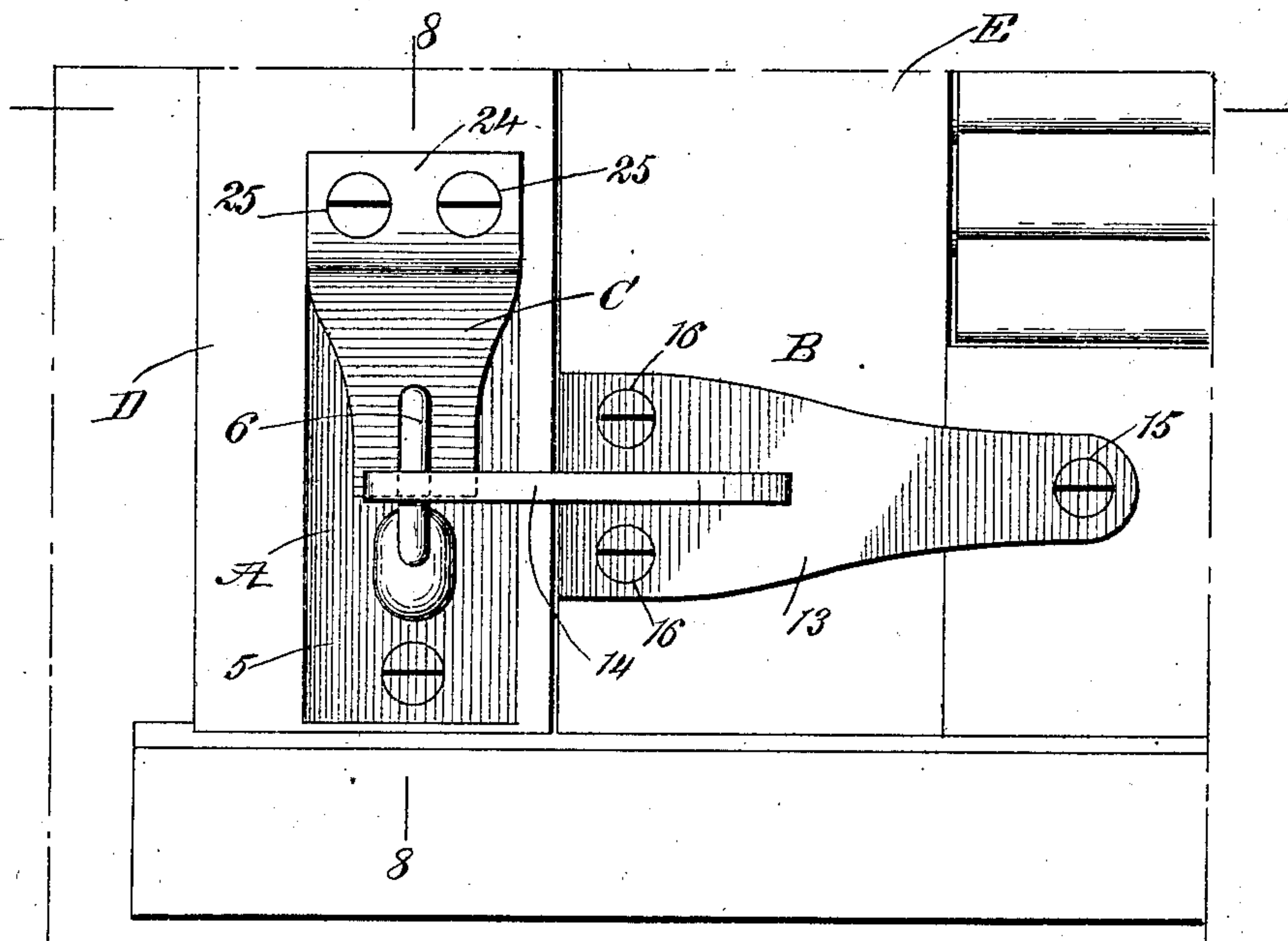
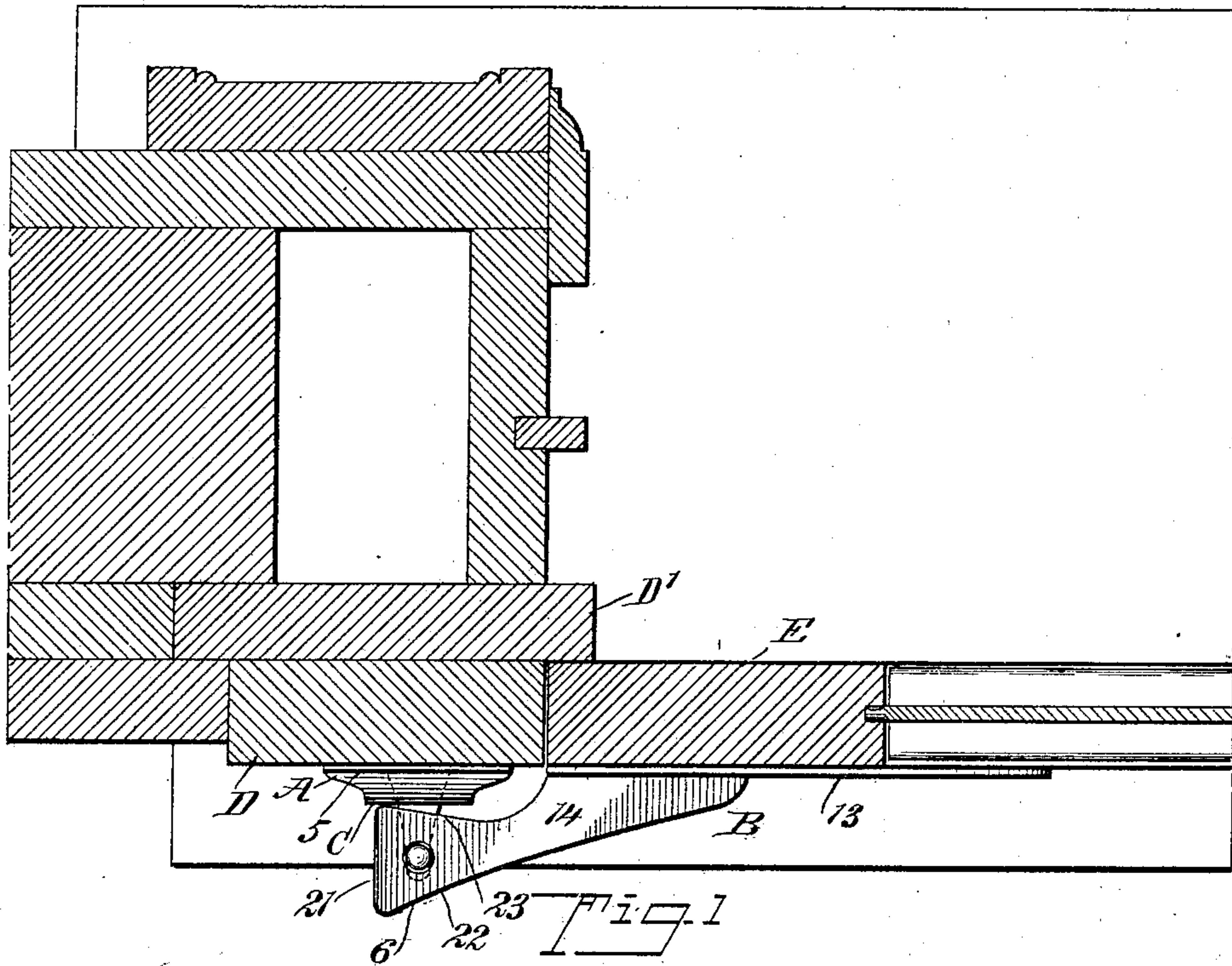
PATENTED APR. 14, 1903.

J. GAMACHE.
HINGE.

APPLICATION FILED FEB. 12, 1902.

NO MODEL.

2 SHEETS—SHEET 1.




WITNESSES:

INVENTOR

J. S. Brophy.
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Fig. 2

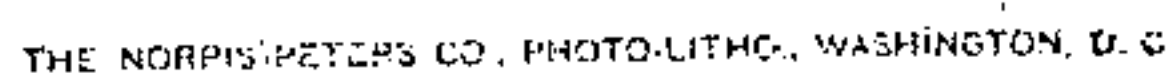
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UNITED STATES PATENT OFFICE.

JOSEPH GAMACHE, OF VAN NEST, NEW YORK, ASSIGNOR OF ONE-HALF TO
PHILIAS GUILLOTTE, OF NEW YORK, N. Y.

HINGE.

SPECIFICATION forming part of Letters Patent No. 725,435, dated April 14, 1903.

Application filed February 12, 1902. Serial No. 93,716. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH GAMACHE, a citizen of the United States, residing at Van Nest, 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 full, clear, and exact description.

My invention relates to improvements in hinges of that class adapted for use on outside blinds or shutters of brick or frame houses, although I would have it understood that the invention is not restricted to this particular use or adaptation.

The object of the present invention is the provision of a practical, simple, and cheap form of hinge which may be easily applied to the frame or casing and to the blind. The improved hinge may be adapted for use on any class of blinds—that is, on “flush” blinds, which are adapted for use in connection with blind-stops and are designed when closed to occupy a flush relation with the casing—or the hinge may be used on that class of blinds which are not equipped with blind-stops and which are hinged on top of the casing outside of the latter. The spring is essentially a flat or leaf spring adapted to be secured in place by the same screws which fasten one leaf member. The other leaf or member is provided with an arm having active faces disposed at different angles or positions adapted to engage with the spring in different positions of the blind, so that one face engages with the spring in a bowed or partially-open position of the blind, or another face of the arm and the spring cooperate in order to securely hold the blind in its open position, and still another face of the arm engages with the spring in the closed position of the blind and so that there is practically no strain on the spring in the described closed position of the blind.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of my improved hinge applied to a flush blind. Fig. 2 is a front elevation thereof. Fig. 3 is a plan view of another embodiment of the hinge, showing

it in position on a top blind which is disposed outside of the casing. Fig. 4 is a detail perspective view of a cam-shaped arm adapted to form a part of that member of the hinge which is applied to the blind. Fig. 5 is a detail view of the plate forming a part of the blind-hinge member. Figs. 6 and 7 are detail views of parts comprising the other hinge member, which is attachable to the casing. Fig. 8 is a detail sectional elevation through the hinge member in position on a casing.

The member A of the hinge is adapted to be fastened to a window-casing of any kind of a house or building—that is, it may be fastened either to the casings of brick houses or of frame houses. This member consists of a plate 5 and the pintle 6. In practice I prefer to make the plate and pintle in separate pieces, although it is evident that these parts may be formed in a single piece—as, for example, by casting them. The plate 5 of the hinge member A is stamped or struck up from a single piece of heavy rolled sheet metal, and this plate is preferably of rectangular form and of appropriate size. The plate is provided with a slot 7 near its lower end, and it is furthermore provided with a screw-hole 8 below the slot and with other screw-holes 9 in the upper corners of said plate. The pintle 6 is cast in a single piece of malleable metal, and it is provided with a body or shank 10, the same extending at right angles from the cylindrical portion of the pintle and terminating in a flat face 11, the area of which greatly exceeds the dimensions of the slot 7. The body portion or shank of the malleable pintle is provided with a tongue 12, that extends beyond the flat face 11 of the body, and this tongue is shaped and proportioned to fit snugly into the slot 7 of the plate 5 and to project through the slot for a suitable distance, whereby the projecting end of the tongue may be upset or headed against the back face of the plate 5. The flat face 11 of the pintle shank or body is adapted to bear firmly against the front face of the plate, and the described construction provides a very simple and secure means for the attachment of the pintle to the rolled metal plate, the said pintle being disposed in an offset position parallel to the front face of

the plate. The other member B of the hinge consists of a plate 13 and an arm 14. This plate of the hinge member B is also stamped or struck up from a sheet of heavy rolled metal, and it is preferably in the form disclosed by Fig. 5. At its smaller end the plate is provided with a single screw-hole 15, and near its other corners said plate is provided with the spaced screw-holes 16. Between the spaced screw-holes there is a slot 17, formed in the plate, said slot extending longitudinally of the plate and terminating near a line drawn through the two screw-holes 16. The arm 14 is cast in a single piece of steel or malleable metal, and along one edge it is formed with a flat bearing-face 18, from which extends the tenon or tongue 19, the latter conforming to the slot 17 and adapted to project through said slot. The tenon or tongue 19 may be upset against the back face of the plate 13, and the arm is thus adapted to be firmly secured to the plate. The arm extends in an inclined or curved direction outwardly from the plate, so that its free end terminates at a point beyond and outside the plane of said plate 13. This arm is formed with a pintle-opening 20, and it has three sides or faces, (indicated at 21 22 23.) The face 21 is parallel to the edge of the plate 13 or at right angles to the length of said plate; but the edge 22 lies at an obtuse angle to the edge 21, while the remaining edge 23 is curved or inclined in an opposite direction to the edge 22.

C designates the spring, which is made or struck up from a single piece of elastic sheet metal, said spring being properly tempered in order to give the necessary strength or resistance thereto. The spring is provided with a flange or lip 24, in which is produced the holes 25, that are spaced corresponding to the holes 9 in the plate 5 of the hinge member A. The flange or lip 24 of the flat leaf-spring lies at an angle to the length of said spring, and this flange is applied against the front face of the plate 5, so that the holes 25 of the spring will register with the holes 9 of the hinge member A, whereby the spring may be secured in its active position by some of the screws that serve to fasten the hinge member A to the window-casing. This spring is disposed in an inclined position between the plate 5 and the pintle 6, and the free end of said spring terminates very close to or in actual contact with the inner edge of said pintle.

The arm 14 of the hinge member B that is attached to the blind is adapted to turn freely on the pintle 6, because the cylindrical part of the pintle fits loosely in the hole 20 of the arm; but in either of the positions of the hinge member B one or the other of the faces of the arm 14 will impinge or bear against the spring C. When the blind is in its closed position, the inner edge 23 of the arm 14 on the hinge member B will bear against the free end of the spring C, so as to repress the lat-

ter to a minimum degree, thus releasing the tension of the spring on the arm of the hinge member. When the hinge member B is turned outwardly by opening the shutter or blind, the inner angle or corner formed by the junction of the faces 21 23 will bear or ride against the spring, so as to press the latter inwardly and permit the member B to turn into a position at right angles to the plate 5, thereby bringing the edge 21 of the arm 14 into engagement with the spring. If the shutter or blind is allowed to remain in this position, the energy of the spring against the edge 21 of the arm will serve to maintain the blind in a bowed position; but it is evident that the blind and the member B may be turned to a fully-opened position. During this turning movement of the member B the outer angle or corner of the arm formed by the junction of the edges 21 22 will ride against the spring C and again press the latter inwardly; but when the blind is in its fully-opened position the edge 22 of the arm is presented opposite to the spring C. In this position of the arm on the member B the spring C is adapted to exert a strong pressure, and a peculiar angle of the edge 22 of the arm 14, in conjunction with the flat form of the spring C, causes the latter to hold the blind member B and the blind firmly in their opened positions, so that the blind cannot be accidentally blown closed by the pressure of a comparatively strong wind.

In Figs. 1 and 2 of the drawings I have shown my improved hinge applied to a flush blind—that is to say, the window-casing D is equipped with a blind-stop D' and the blind E is arranged to close against the stop D' and in flush relation to the casing D. The plate 5 of the member A is placed in position on the casing D and is temporarily fastened at the predetermined position by a single screw, which is fitted in the hole 8 of said plate. The member B has its plate 13 secured by screws against the face of the blind E by means of screws which are passed through the holes 15 16; but before the hinge member A is secured permanently in place the hinge member B is fitted to the pintle 6, after which the spring C is adjusted so as to bring its holes 25 into registration with the holes 9 in the plate 5 of the member A. Suitable screws are now passed through the coincident holes of the spring and the plate 5, and these two parts are secured firmly in place by the same screws.

My improved hinge may also be adapted to blinds of that class which are applied to the top or outside of the casing, as represented by Fig. 3. In this figure the casing D^a is not provided with a blind-stop and the blind E^a is adapted when closed to fold against the outer edge of the casing. To properly fit a hinge to a casing and blind of this character, I find it necessary to modify the shape of the plate 13 of that member B which is attached to the blind. The plate 13 is bent at a right

angle, as indicated at 13^a in Fig. 3, whereby the plate proper, 13, may be secured against one face of the blind E^a, while the bent or angular end 13^a of said plate is fitted against the edge of said blind. This makes the arm 14 of the blind member B extend beyond the edge of the blind, whereas the hinge member A may be secured in the ordinary way to the exposed edge of the casing D^a.
 10 The pintle of the hinge member A fits loosely in the eye 20, provided in the arm 14 of the hinge member B, and said arm is adapted to ride against the spring C, which serves to hold the hinge member B and the blind in either of their several positions.

Although I have shown and described the member B as made in separate pieces adapted to be riveted together, it is to be understood that the member may be cast in a single piece of metal.

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

1. In a lock-hinge, an eye or socket member comprising a stamped metal plate provided with a slot or opening, and a cast-metal arm provided with a bearing-face and with a stud projecting from said face, said arm and plate being assembled for the bearing-face to engage the plate and said stud being in the slot of, and upset or headed against, said plate; the arm being also provided with a pintle-eye located a short distance from the bearing-face thereof.

2. A lock-hinge comprising a pintle member provided with a plate and a central pintle arranged parallel to the face of said plate and provided with a shank which projects

from said face of the plate, an eye member having a plate and an eye-formed arm extending beyond the plate thereof and formed with a series of active edges, two of said edges being inclined reversely to each other and lying at different angles to a straight outer edge, and a leaf-spring having a flat bearing portion and an inclined active portion, said spring being fitted between the plate and the pintle of the said pintle member for its flat bearing portion to engage with the face of the plate of the member and having its active portion inclined toward the pintle and being free or unconfined to engage with either of the active edges on the arm of the eye member, and said flat bearing portion having screw-holes to receive the screws which are adapted to fasten the pintle member in position.

3. A lock-hinge comprising an eye member formed by an angular blind-plate and an eye-formed arm, said blind-plate having a flat portion and an offset portion extending substantially at right angles to the flat portion, and said arm projecting substantially at right angles to the offset portion and lying parallel to the flat portion of the blind-plate, a pintle member having a pintle to fit said eye of the arm, and a spring adapted to press against an edge of said arm.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH GAMACHE.

Witnesses:

H. T. BERNHARD,
 EVERARD BOLTON MARSHALL.