No. 630,480. Patented Aug. 8, 1899.

E. BREUNING.

HINGE.

(Application filed Jan. 12, 1899.)

(No Model.)

Fig. 1.

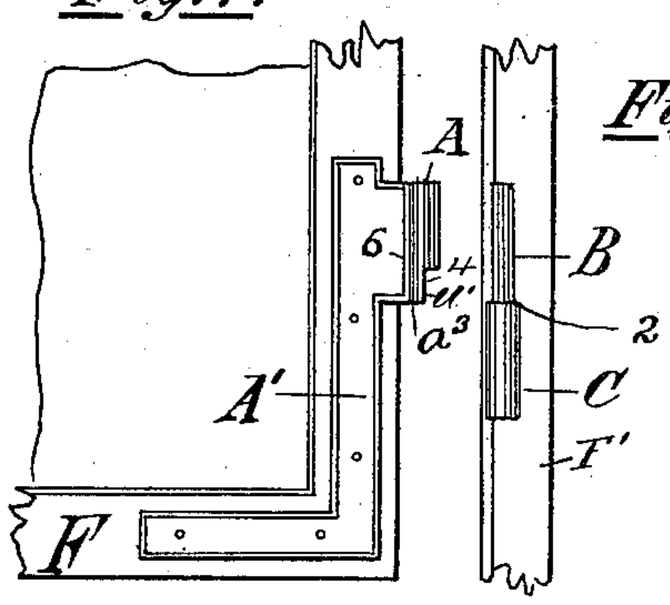

Fig. 2.

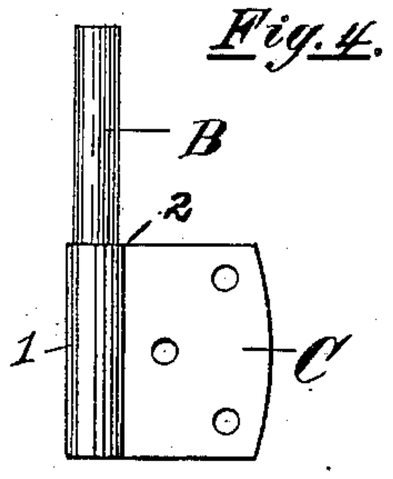

Fig. 3.

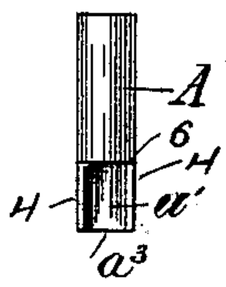

Fig. 4.

Fig. 5.

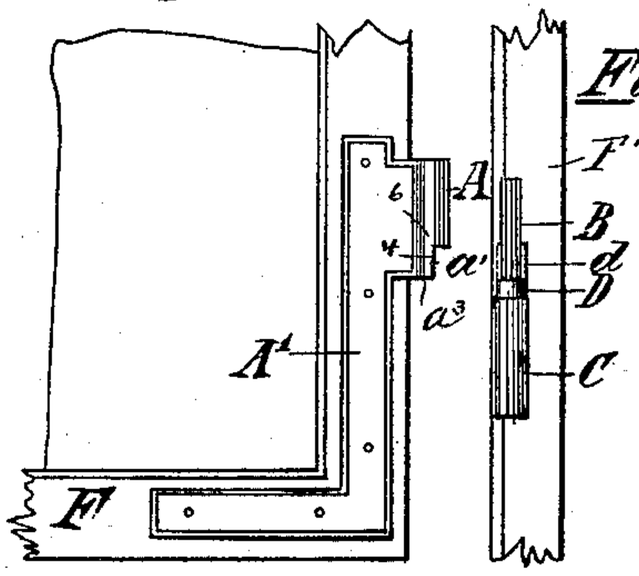

Fig. 6.

Fig. 7.

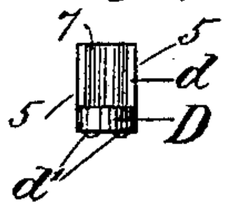

Fig. 8

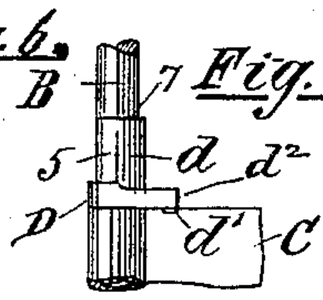

Fig. 9.

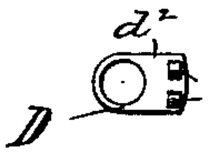

Fig. 10.

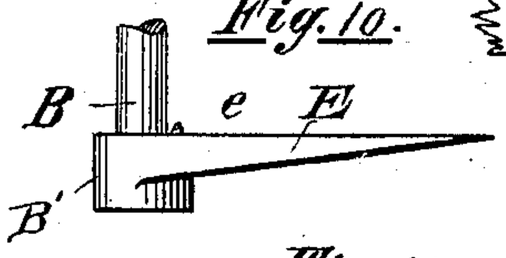

Fig. 11.

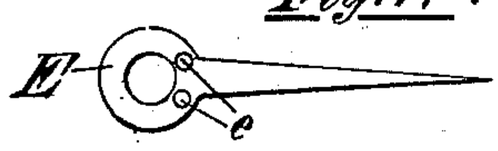

Fig. 12.

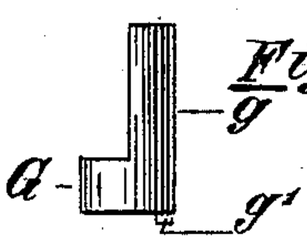

Fig. 13.

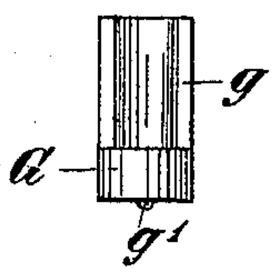

Fig. 14.

Witnesses:
Anton Abloetzner
N. Mitchell

Inventor:
Eugen Breuning
by Max Sturgis
Attorney

UNITED STATES PATENT OFFICE.

EUGEN BREUNING, OF OBERNDORF, GERMANY, ASSIGNOR TO ALFONS MAUSER, OF COLOGNE, GERMANY.

HINGE.

SPECIFICATION forming part of Letters Patent No. 630,480, dated August 8, 1899.

Application filed January 12, 1899. Serial No. 701,975. (No model.)

To all whom it may concern:

Be it known that I, EUGEN BREUNING, a citizen of the German Empire, residing at Oberndorf-on-the-Neckar, in the Kingdom of Würtemberg, Germany, have invented certain new and useful Improvements in Hinges; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to hinges for doors and windows; and it consists, substantially, in such features of improvement as will hereinafter be more particularly described.

The objects of the invention are to provide a hinge by which the hanging of doors and windows can be effected quite rapidly and with but little labor and also to provide a hinge for this purpose which is exceedingly simple as well as inexpensive to manufacture. These and additional objects are attained by the means illustrated in the accompanying drawings, in which—

Figures 1 and 2 are respectively a front view, partly broken away, and an end view of frames or sashes of an ordinary French or folding window and representing, in connection with said frames, the employment of a two-part hinge, in connection with which the use of my improvements are intended. Fig. 3 is an enlarged view in detail of the socket portion of the leaf or part of the hinge shown in Fig. 1. Fig. 4 is a side view of the part or leaf of the hinge shown in Fig. 2. Figs. 5 and 6 are similar views to Figs. 1 and 2, respectively, and representing the employment of my improvements in connection with the hinge proper. Fig. 7 is an enlarged view in detail of the combined collar and curved plate, constituting an insertible supplementary bearing for the recessed socket portion of the hinge; and Fig. 8 is an enlarged side view in detail of the hinge part shown in Fig. 6. Fig. 9 is a bottom plan view of the insertible bearing shown in Fig. 7. Figs. 10 to 14, inclusive, are separate detail views of a modification of the insertible supplementary bearing.

Preliminarily to a more detailed description it may be stated that the hinge is substantially of the ordinary two-part form and on one part of which is constructed or arranged a socket to receive a pintle or pin on the other. It is in connection with such a form of hinge that my present improvements are employed.

I have shown modifications in the arrangement, and it will be understood that my invention is not limited in its scope to the precise details of the construction and arrangement shown and about to be described.

In the drawings, Figs. 1 to 4, inclusive, F F′ represent two frames or sashes of an ordinary folding or French window, to the latter of which, we will say, the former is to be attached or suspended. Fastened to the adjacent stile of the frame or sash F′, on one side thereof, is the one part or leaf C of my improved hinge, which is formed or provided for its vertical length with, preferably, a rounded enlargement 1, forming at the upper end 2 a base for the lower edge a^3 of the socket A of the other part or leaf A′ of the hinge.

The part A′ of my improved hinge is secured to the side stile of the frame F, as shown, and the socket A thereon is so arranged that when the pintle B is properly received thereby a complete hinge will be formed by the two parts A′ and C. In order to facilitate the entrance or insertion of the pintle in the socket, I form in the side of the socket A, from the lower edge thereof, a slot or recess a', and it will be seen that by lifting the window-sash F in proper position with respect to sash F′, so as to bring the slot or recess a' before the end of pintle B, the said end will readily enter the recess by proper movement or manipulation of frame F, whereupon by allowing said frame to then drop or descend by its own weight the two frames or sashes will be joined together by the hinge in an obvious manner.

As shown in the drawings, the pin or pintle B^2 is straight and of equal diameter for its full height, while the slot or recess a' in the socket A is formed by cutting out a section of the latter substantially of the full diameter thereof or all the way across the said socket. By this construction the connection

between the two parts of the hinge is established as soon as the lower edge a^3 of the socket finds its seat upon the base 2 of the pintle. In this construction the bearing-surface for the lower end of the socket upon the base is of course reduced, the same comprising but about one-half the diametric surface of said socket, and in order to compensate for such reduced bearing-surface I resort to the means which I will now describe. Thus I employ upon the pintle at its base a curved plate d, fitting against or partly around the pintle and provided with a collar D, fitting around the pintle, so as to turn thereon, as will be explained. Said collar turns upon the base 2 in the swinging action of the frame F with respect to the frame F'. In order to prevent displacement of the plate d and collar D during the act of placing the socket upon the pintle, some means should be provided, and which means should also possess the capacity to yield to the movement of the part A' of the hinge upon the part C. For this purpose I preferably provide the collar D with a lateral or side extension d^2, which lies or rests upon the upper edge of the leaf or plate C, and on the under side of said extension, one on either side of said leaf, are two teats or projections d'. In placing the collar D upon the pintle the same is moved or turned thereon to bring the teats on opposite sides of said leaf or plate, and then when frame F is lifted into position and the socket A placed upon the pintle B the vertical edges 4 4 of recess a' will fit or abut closely against the vertical edges 5 5 of the curved plate d and the upper edge 6 of said recess will rest upon the upper edge 7 of the said plate, and in this way the said socket, with its sash-frame F, will have a complete full bearing at all points. Now after frame F is suspended it is eviednt that by turning or swinging the same by the expenditure of sufficient force for the purpose the said curved plate d and collar D will be caused to turn upon the pintle with the socket, and the weight of the frame, combined with its swinging movement, will cause the collar D to rise slightly, thereby causing one or the other of the teats d' (according to which way the sash-frame is swung) to ride over the upper edge of the leaf or plate C. In placing the socket upon the pintle (the collar having previously been adjusted to bring the teats d' on opposite sides of plate C) it is obvious that the said teats will offer sufficient resistance on either side of plate C to prevent displacement of collar D while the placing of the socket upon the pintle is being effected.

In Figs. 10 to 14, inclusive, I show in enlarged views a modification of the curved plate (indicated in this instance at g) in that the extension d^2 of Figs. 5 to 10, inclusive, is dispensed with and a single teat g' is provided on the lower side of collar G, (corresponding to collar D,) which teat is received between two corresponding teats e, formed on the upper surface of the strap of an ordinary gate-hinge E at the base B' for the pintle B of such hinge. Figs. 10 and 11 are respectively side and plan views of one part of such a hinge, (gate-hinge.) It is obvious that the construction last described operates substantially in the same way as the other and with equal effect.

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

1. A hinge comprising one part having a socket provided in its side at the open end thereof with a recess, a second part having a pintle adapted to enter the socket through the recess, said pintle having a bearing for the socket, and a movable supplemental bearing adapted to the pintle and also to fill the recess in the socket, said supplemental bearing being provided with means for riding upon and lightly engaging the said second-named part of the hinge.

2. A hinge comprising one part having a socket provided in the side thereof at its open end with a recess or slot, another part having a pintle adapted to enter the socket through the recess, and a bearing for said socket consisting of a curved plate fitting partly around the pintle and the edges of which fit against the edges of said recess, said plate having a collar surrounding the pintle at its base and engaging the leaf or plate of the hinge.

3. A hinge comprising one part having a socket provided in the side thereof at its open end with a recess or slot, another part having a pintle adapted to enter the socket through the recess, and a bearing for said socket consisting of a curved plate fitting partly around the pintle and the edges of which abut against the edges of said recess, said plate having a lateral extension provided with teats engaging the opposite sides of the hinge-plate with which the pintle is formed.

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

EUGEN BREUNING.

Witnesses:
AUGUST DRAUTZ,
H. WAGNER.