A. S. LOWDEN.

HINGE.

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1,190,435. Patented July 11, 1916.

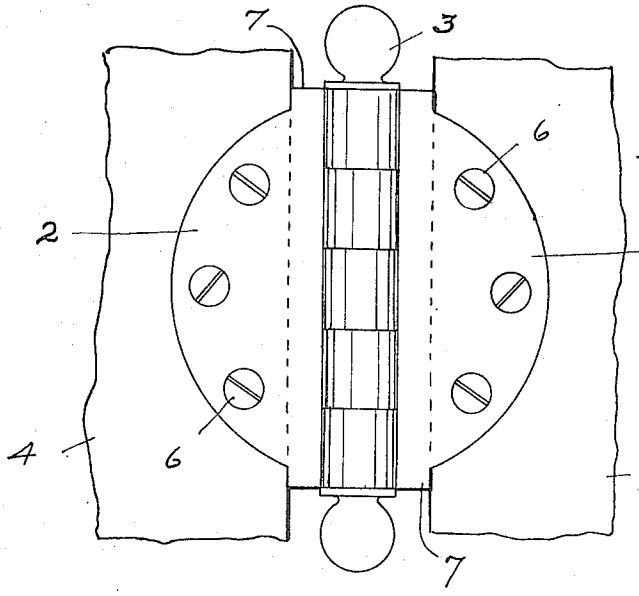


Fig. 1.

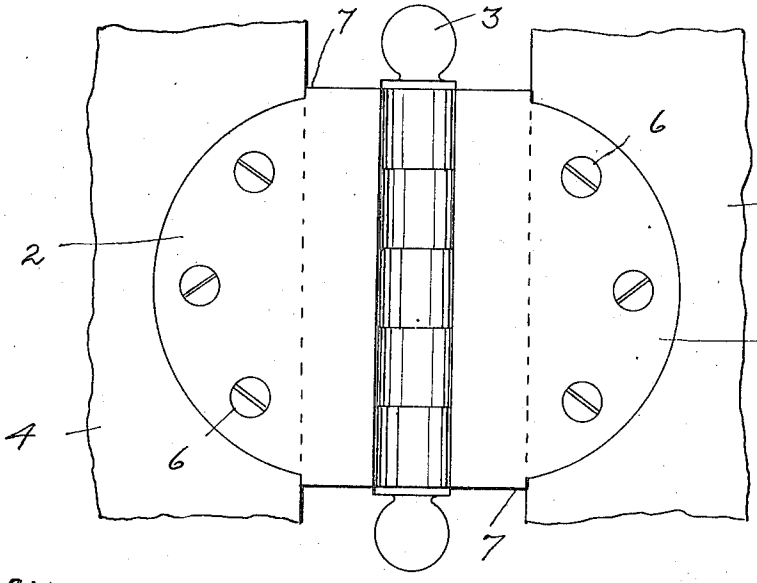


Fig. 2.

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HINGE.

1,190,435. Specification of Letters Patent. Patented July 11, 1916.

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To all whom it may concern:

Be it known that I, ANDREW S. LOWDEN, a citizen of the United States, residing at Concord, in the county of Middlesex, State of Massachusetts, have invented a certain new and useful Improvement in Hinges, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to hinges more particularly of the type having leaves or flaps hinged together, which leaves or flaps have their free edges defined by curves which are essentially the arcs of a circle.

The use of hinges of the type just referred to is of advantage in that the recesses or hinge-seats into which the leaves or flaps are designed to be seated and secured may be simultaneously cut or excavated by the single application of a rotating seat excavating tool. A difficulty, however, met with in the use of a hinge having the circularly outlined leaves is that of locating the hinge in the hinge seats so that the hinge pin is in correct alinement with the part to which the hinge is secured.

The object, therefore, of the present invention is to provide a hinge having leaves of which the free edges are of essentially circular curvature, which leaves also embody provisions whereby the hinge is automatically alined, when the same is being secured in the hinge seat prepared therefor, in correct working position with respect to the parts to which it is attached.

A further object of my invention is to provide a construction of the hinge leaves so that the ends of the same present the same squared-up appearance as the hinges of the usual type having rectangular hinge leaves.

These objects are secured by providing upon the hinge leaf shoulders situated preferably on each side of the circularly outlined portion of the hinge leaf, and lying at either end of the said leaf; which shoulders, by requiring a predetermined position of the hinge leaf with respect to the hinge seat prepared therefor in the part to which the hinge is to be applied, serve to aline the hinge pin in parallelism to the axis about which the said part swings with respect to that to which it is hinged. Such shoulders further add a finished appearance to the ends of the hinge leaves.

My hinge is shown in two of its preferred embodiments in the drawings which form a part of this application and to which reference is more fully made in the following specification.

Referring to the drawings,—Figure 1 is a plan view showing a hinge embodying my invention in its preferred form. Fig. 2 is a plan view showing my hinge in a slightly modified form.

In the figures similar reference numerals designate similar parts.

Referring to said drawings, it will be seen that in the figures the hinge embodies the general construction commonly employed in a hinge of the butt type. That is to say such hinge comprises two hinged members as the flaps or leaves 1 and 2 interengaging through the preferably cylindrical portions 1^a, 1^a, and 2^a, 2^a, adapted to lie laterally adjacent to each other and secured together by a pivot or hinge pin 3 passing axially through the same. Thus the hinge flaps or leaves are adapted to swing about each other, on the hinge pin 3 passing through the said interengaging portions of the hinged members as an axis, in a manner well understood by those conversant with the art.

In the preferred form of hinge shown in Fig. 1 the periphery of the free edges of said hinge leaves is such that when the hinge is in its open position it presents, except for the shoulders 7, hereinafter more especially referred to, an essentially circular outline of substantially the same radius as that of the circular cut made by the rotation of the seat excavating tool designed to be employed for excavating the hinge seats. In other words in such hinge the curved peripheries of the hinge leaves or flaps are defined by arcs of circles having the same radius, which arcs are concentric and have their common center located substantially at the center of the hinge pin.

For the purpose of automatically locating the hinge in correct working relation with respect to the door 4 and jamb 5, to which the hinge leaves are secured, as by screws 6, shoulders 7 are provided. Said shoulders are provided, preferably at each end of both hinge leaves, and embody end edges which lie substantially perpendicular to the hinge pin, and longitudinal edges lying substantially parallel to said hinge pin. Furthermore said longitudinal edges of each shoulder of the same leaf are so positioned as to

lie at an equal distance from the hinge pin. By reason of the presence of these shoulders 7 it is apparent that the hinge leaf cannot be seated within the circularly outlined excavation, prepared for the hinge seat in the face of the part to which the hinge leaf is to be applied by the action of the rotating seat excavating tool, until the longitudinal edges of the leaf shoulders 7 at each end of the hinge leaf are in registration with the edge of the said part. Since therefore, such longitudinal shoulder edges upon each leaf are both at an equal distance from the hinge pin, they will insure a location of the hinge leaf within the hinge seat prepared therefor in such position as to make certain the alinement of the hinge pin in parallelism with the part to which the hinge is applied and consequently will effect the location of the hinge in a correct operating position.

In Fig. 2 is shown a hinge in which, although the peripheral free edges of the hinge leaves are curved so as to substantially coincide with arcs of circles having the same radii, said arcs are not concentric, but their respective centers are somewhat separated, lying on opposite sides of the hinge pin. It will be apparent, however, that the seats for a hinge of this type may be prepared simultaneously by a single application of a rotating seat-excavating tool, provided the parts to which the hinge is to be applied are placed nearer together while the hinge seats are being excavated, than the relative positions occupied by the same when the hinge is attached to the said parts.

Another desirable feature which may be noted as incident to a hinge having the shoulders at the ends of the hinge leaves, is that a hinge having shoulders provided with the end edges lying perpendicular to the hinge pin presents at the exposed ends of the hinge leaves, a squared-up effect which materially enhances the appearance of the same. Such effect is not present in the hinges formerly used having leaves with a circular outline in that the curved outline of the exposed portion of the leaves adjacent the hinge pin tend to give the hinge an awkward and unfinished appearance.

I claim as my invention:—

1. A hinge composed of leaves hinged together by a hinge pin, the free edge of one of said leaves having shoulders located adjacent each end of said leaf, each of said shoulders embodying a longitudinal edge lying substantially parallel to the said hinge pin, said longitudinal edge of each shoulder being located at an equal distance from said hinge pin, said free edge further having a portion substantially conforming in curvature to the arc of a circle and lying intermediate said shoulders.

2. A hinge composed of two leaves hinged together by a hinge pin, the free edge of each of said leaves having a shoulder at each end, each of said shoulders embodying an end edge substantially perpendicular to the hinge pin and a longitudinal edge substantially parallel to said hinge pin, said longitudinal edge of each shoulder on the same leaf being located substantially at an equal distance from the hinge pin, said free leaf edge further having a curved portion substantially conforming in curvature to the arc of a circle, and lying intermediate said longitudinal edges.

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

ANDREW S. LOWDEN.

Witnesses:
NATHAN B. DAY,
CHAS. F. RANDALL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."