Jan. 12, 1926. 1,569,089

J. J. JANCA

FRICTION HINGE

Filed May 5, 1924

Fig. 1.

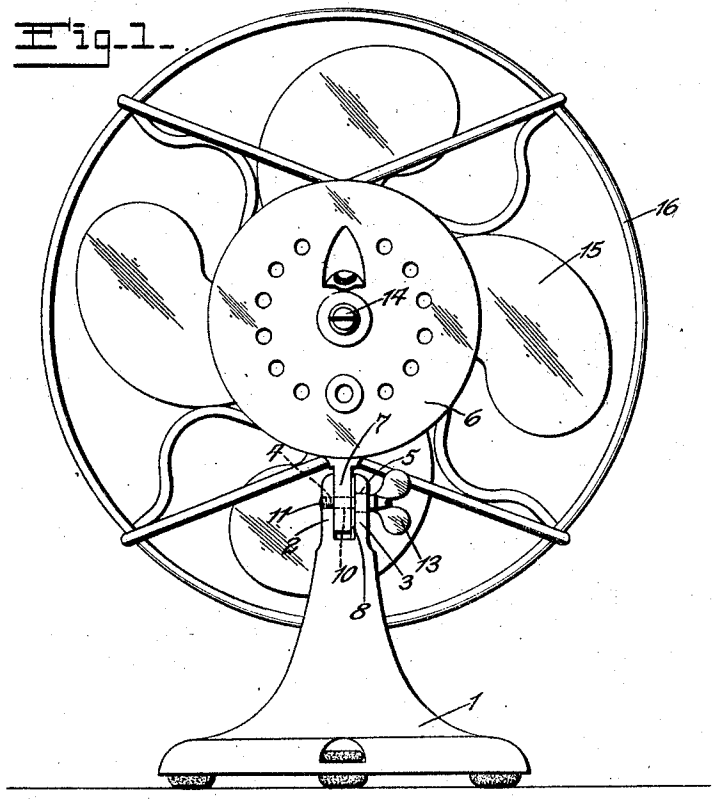


Fig. 2.

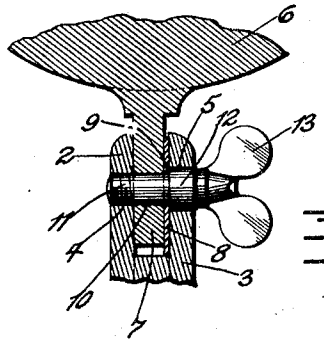


Fig. 4.

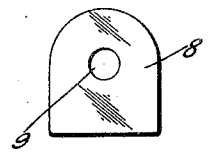
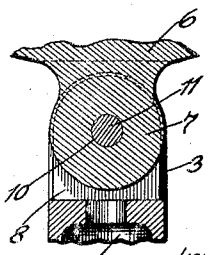


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOSEPH J. JANCA, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE EMERSON ELECTRIC MFG. CO., OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

FRICTION HINGE.

Application filed May 5, 1924. Serial No. 711,290.

To all whom it may concern:

Be it known that I, JOSEPH J. JANCA, a citizen of the United States, residing at St. Louis, Missouri, have invented a new and useful Friction Hinge, of which the following is a specification.

This invention relates to improvements in friction hinges, and consists in the novel construction hereinafter disclosed.

An object of the invention is to provide a friction hinge particularly adapted for joining a stationary base section of an electric fan with the motor housing, whereby the angularity of the motor housing may be adjusted without loosening the clamping means of the hinge.

Additional advantages of the invention will be apparent from the following detailed description thereof taken in conection with the accompanying drawings, in which

Fig. 1 is a rear elevation of a fan embodying the invention.

Fig. 2 is a vertical section through the hinge construction.

Fig. 3 is a vertical section taken at right angles to Fig. 2.

Fig. 4 is a detailed view of the clamping plate.

Particularly in the construction of electric fans, comprising a stationary base and a movable upper section composed of the motor housing, and the fan shaft and fan carried thereby, difficulty has been experienced in providing a suitable hinge joint of simple construction and yet efficient to hold the upper section of the fan in different angular adjustments without loosening the clamping means of the hinge. The rocking of the upper section of the fan on the pintle of the hinge in the former constructions has resulted in a loosening of the retaining means so that each time the upper section was adjusted the clamping means of the hinge ordinarily would have to be reset. This difficulty has been overcome by the present invention.

In the embodiment of the present invention illustrated in the drawing the hinge construction is shown as incorporated in an electric fan comprising a base section which includes a conical pedestal 1 having a bifurcated extremity composed of spaced flanges 2 and 3 constituting the stationary part of the hinge. The flange 2 has a threaded opening 4 through a thickness thereof and the flange 3 has an opening 5 of relatively larger diameter than the opening 4, said two openings being in axial alinement.

Depending from the motor housing 6 is an extension 7 constituting the movable hinge portion of the hinge joint. The width of the extension 7 is slightly less than the width of the space between the inner faces of the flanges 2 and 3, thereby providing a space between one side face of the member 7 and the inner face of the flange 3 for the reception of a relatively thin clamping plate 8. The plate 8 has a horizontal lower edge that fits against the base of the opening between the inner faces of the flanges 2 and 3, preventing turning of the plate, and the upper edge of the plate is rounded to conform to the general contour of the upper edges of the flanges 2 and 3. The plate 8 is provided with an opening 9 so spaced that when assembled the opening 9 will be in axial alinement with the openings 4 and 5, and the member 7 has an opening 10 which in assembled relation registers with the opening 9. The opening 9 is in the form of a circular hole of less diameter than the circular opening 5 in the flange 3.

The pintle of the hinge comprises a wing screw having a cylindrical portion 11 the extremity of which is threaded for screw engagement with the threaded opening 4 in the flange 2. The inner portion of the cylindrical section of the screw in assembled relation lies within the opening 10 in the member 7 and is of a diameter slightly less than the opening 10, permitting the movement of the movable portion of the hinge thereon. The plate 8 is fitted in the space between one face of the member 7 and the inner face of the flange 3, the portion 11 of the wing screw passing through the opening 9 in the plate 8. The screw is further provided with an enlarged cylindrical portion 12 and a wing section 13 for manual manipulation. The diameter of the portion 12 is relatively larger than the opening 9 in the plate 8 and slightly less than the opening 5 in the flange 3.

The plate 8 is preferably stamped out of sheet steel and the matching face of the member 7 therewith is preferably faced off so that a sliding engagement between the two results.

The clamping action of the hinge results by tightening the wing screw into the

threaded opening 4, drawing the shoulder formed by the edge of the section 12 against the marginal edges of the opening 9 in the plate 8, the plate in turn impinging against the side face of the member 7. The frictional engagement thus accomplished between the plate 8 and the side face of the member 7 is sufficient to retain the movable section of the fan in set angular adjustments. The movement of the upper section of the fan will not loosen the clamping screw, as the screw is free to move in the opening 10 of the member 7, and no frictional engagement is imparted to the screw as the member 7 is rocked on its pivot.

It will be understood that the housing 6 supports the fan shaft 14 on the forward end of which is mounted the fan blades 15 and, if desired, a fan guard 16.

While I have described the embodiment of the structure as particularly adapted for use in connection with a fan of the type disclosed, it is clear that other and further uses of the structure may be made.

I do not limit myself, therefore, to the exact construction or to the preferred embodiment of the invention, but what I claim and desire to secure by Letters Patent is:—

1. A friction hinge comprising a stationary member composed of rigid spaced flanges one of which has a threaded hole and the other of which has a hole of larger diameter and in alinement with the threaded hole, a movable member between said flanges, a plate between the flange having the larger hole and said movable member, said movable member and said plate having holes in alinement with the holes in said flanges, and said plate being arranged to make contact with the movable member substantially throughout the area of the plate, a clamping screw passing through said larger hole and through the holes in said plate and the movable member and engaging the hole in the other flange and forming a pivot upon which said movable member turns, and an enlarged cylindrical portion on said screw in said larger hole arranged to press against the plate and to impinge the same against the side wall of the movable member.

2. A friction hinge comprising a stationary member having rigid spaced flanges and a horizontal wall at the base of the flanges intermediate the same, and one of said flanges having a threaded hole and the other having a hole of larger diameter in alinement with the threaded hole, a movable member between said flanges, a plate disposed between the movable member and one of the flanges, said plate having a horizontal lower edge arranged to seat against the horizontal wall of the stationary member to prevent turning of said plate, and said movable member and said plate having holes in alinement with the holes in the flanges, a clamping screw passing through said holes and said screw having an enlarged cylindrical portion which passes through the larger hole in one of said flanges, said cylindrical portion being arranged to press against the plate and to clamp said plate against the side wall of said movable member substantially throughout the area of the plate, whereby the movable member is frictionally held against displacement.

JOSEPH J. JANCA.