April 7, 1931. N. A. MEARS 1,799,309

HINGE

Filed Dec. 5, 1928

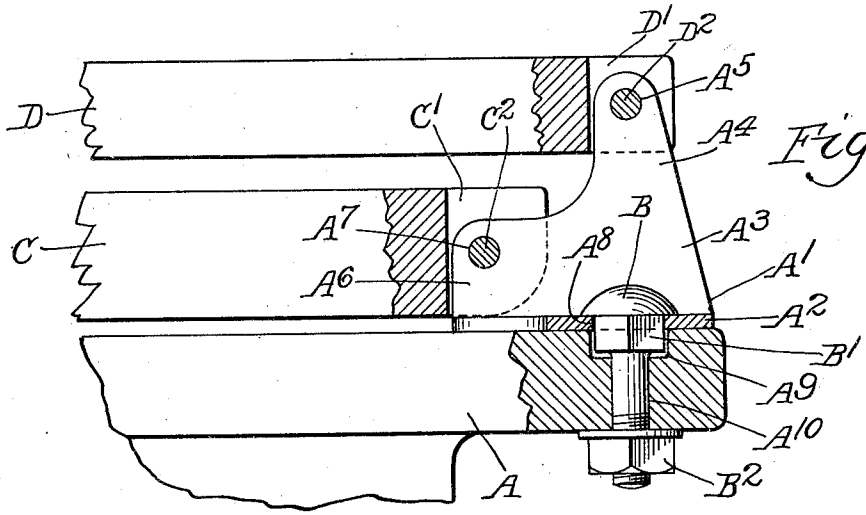


Fig. 1.

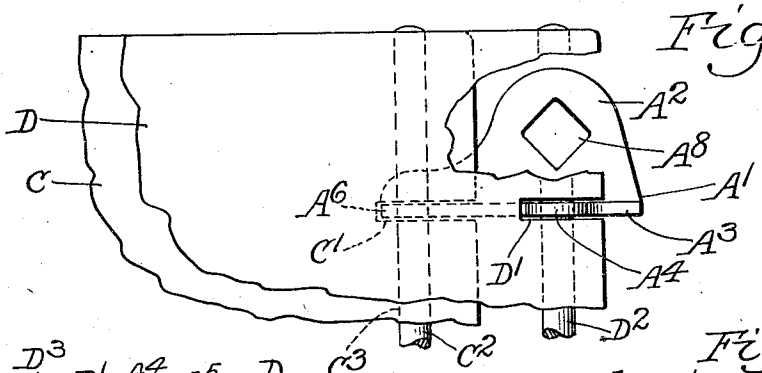


Fig. 2.

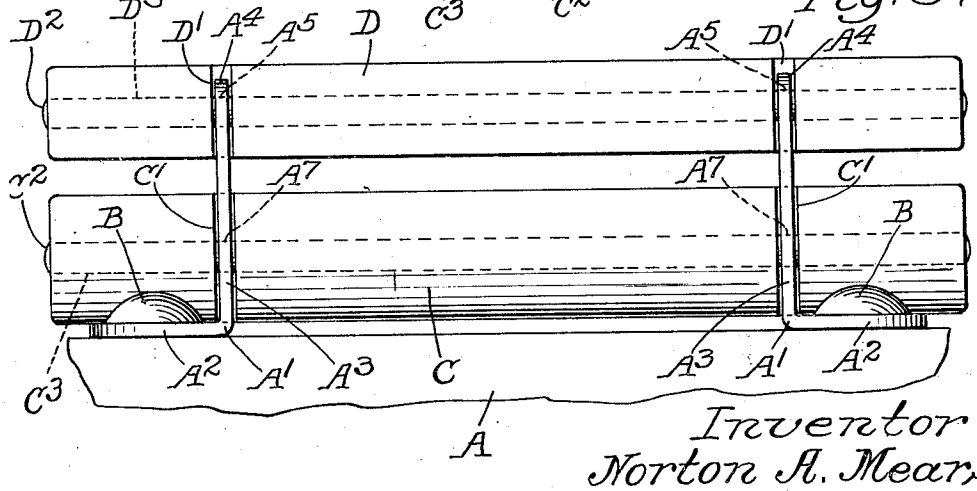


Fig. 3.

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UNITED STATES PATENT OFFICE

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HINGE

Application filed December 5, 1928. Serial No. 323,872.

My invention relates to a hinge and particularly to a hinge which may be used to support two or more adjacently hinged members. One use of my invention is for the hinging of adjacent and overlying cover members. Another object is to provide a hinge in which covers or hinged members may be raised separately or together. Another object is to provide a hinge of the general type disclosed in which all the parts are made of stampings or forgings and in which castings are eliminated. Other objects will appear from time to time in the course of the specification and claims.

I illustrate my invention more or less diagrammatically in the accompanying drawings, wherein—

Figure 1 is a side elevation of the hinge, with parts in section;

Figure 2 is a plan view with parts omitted; and

Figure 3 is a rear elevation with parts broken away.

Like parts are indicated by like symbols throughout the specification and drawings.

A generally indicates the member to which the hinge may be secured and A^1 indicates generally a hinge base including for example the horizontal flanges or extensions A^2 adapted to rest upon the upper surface of the member A. A^3 indicates an upwardly extending ear or lug, upstanding from one edge of the horizontal base portion A^2. It includes the extreme upwardly extending portion A^4 apertured as at A^5 and a lateral extension A^6 apertured at its corner as at A^7. The base portion A^2 is provided with the non-circular aperture A^8, herein shown as squared and the base A is provided with a socket or enlarged aperture A^9, therebeneath, of corresponding form. Centered within such enlarged aperture A^9 is an aperture A^{10} of smaller size and herein shown as circular in cross-section.

The member A^1 is mounted upon and secured to the base A, as by the employment of a carriage bolt generally indicated as B, which may be described as a buttonhead bolt with square members or shoulders B^1 adapted to engage and penetrate the apertures A^8 A^9. When the bolt is drawn into position, as by the nut B^2 not only is the member A^1 firmly seated upon the base A but it is held against rotation about the axis of the bolt.

Mounted for rotation about an axis coincident with the aperture A^7 is the lower cover C. It is indicated in Figure 3 as slotted as at C^1 C^1 to receive, adjacent each side, one of the members A^1. A pin C^2, which may be held against axial movement by any suitable means, is passed through the aperture C^3 which may extend throughout the entire width of the member C. In any case a pivot member or members, herein shown as a single pin C^2, is threaded through the apertures C^3 and passes through the apertures A^7, whereby the member C is adequately hinged in relation to the base A.

The upper cover D, provided with similar slots D^1, is hinged upon the member A^4 and is shown in Figure 3, with a pin D^2 passing through the apertures D^3 and A^5.

It will be realized that any suitable means may be employed for supporting or cushioning the cover members C and D when in horizontal position, the invention intended to be covered in the present application being limited to the hinge and hinge arrangements and securing means therefor.

It will be realized that whereas I have described and shown a practical and operative device, nevertheless many changes might be made in the size, shape, number and disposition of parts without departing from the spirit of my invention. In particular it will be realized that I do not wish to limit myself, except as specifically set out in the claims, to the form of hinge base herein shown, or to any particular shaping of the apertures or to any particular pivot members for the covers.

It will also be understood that where in the claims I use the words "multiple covers", I wish the language to be interpreted as broad enough to cover the use of my type of hinge in any situation where a plurality of hinged members are secured to a hinge base in accordance with the teachings of the present specification.

An additional advantage in my device rests in the fact that it reduces to a minimum the exposed members and tends to give a concealed hinge effect. In doing away with the heavy castings and cross-bar of the present conventional hinge employed for example in toilet seats, I reduce the exposed surface and limit the accumulation of dirt thereon and corrosion thereof. The entire device, the base and the hinge leaves, including the hinge, is more readily cleaned and kept clean.

I claim:

1. A hinge structure for multiple covers which includes a hinge base and means for securing it in position and for preventing rotation of said base about a vertical axis, said hinge base being provided with a plurality of apertures adapted to receive means for securing to said hinge base a plurality of hinged members.

2. A hinge structure for multiple covers which includes a hinge base and means for securing it in position, a plurality of apertures in said hinge base, hinged members and means for securing said members to said base, including pins associated with said members adapted to penetrate said apertures.

3. A hinge structure for multiple covers which includes a hinge base, said hinge base having a generally horizontal portion, a non-circular aperture in said horizontal portion, a generally vertical portion upstanding from said horizontal portion and a plurality of circular apertures in said vertical portion.

4. A hinge structure for multiple covers which includes a hinge base, said hinge base having a generally horizontal portion, a non-circular aperture in said horizontal portion, a generally vertical portion upstanding from said horizontal portion and a plurality of circular apertures in said vertical portion, said circular apertures being spaced apart both horizontally and vertically.

5. A hinge structure for multiple covers which includes a hinge base, said hinge base having a generally horizontal portion, a non-circular aperture in said horizontal portion, a portion upstanding from said horizontal portion and a plurality of circular apertures in said vertical portion, said circular apertures being horizontally spaced apart.

6. A hinge structure for multiple covers which includes a hinge base, said hinge base having a generally horizontal portion, a non-circular aperture in said horizontal portion, a portion upstanding from said horizontal portion and a plurality of circular apertures in said vertical portion, said circular apertures being vertically spaced apart.

7. In a hinge structure for multiple covers which includes a hinge base, a member upwardly projecting from said base and means for securing thereto, for rotation about separate pivots, a plurality of hinged members, one of said members being adapted to overlie the other when both are in horizontal position.

8. In a hinge structure for multiple covers which includes a hinge base, a member upwardly projecting from said base and means for securing thereto, for rotation about separate pivots, a plurality of hinged members, one of said members being adapted to overlie the other when both are in horizontal position, the pivot point of the upper member being vertically and horizontally spaced from the pivot point of the lower.

9. A hinge structure for multiple covers which includes a hinge base, a plurality of hinged members, means for pivoting said hinged members to said base for rotation about pivot points both horizontally and vertically spaced apart and means for securing said base in position and for preventing its rotation about a vertical axis.

10. A hinge structure for multiple covers which includes a hinge base, a plurality of hinged members, means for pivoting said hinged members to said base for rotation about pivot points both horizontally and vertically spaced apart and means for securing said base in position and for preventing its rotation about a vertical axis, said means including a buttonhead bolt with squared shoulders, the hinge base being apertured to receive said shoulders.

11. In a hinge and cover assembly, a base member, a pivot abutment projecting upwardly therefrom, a lower cover member pivoted to said pivot abutment and an upper cover member pivoted, at a higher level, to said pivot abutment, said covers being both slotted to receive said pivot abutment, said pivot abutment and said slots lying in generally vertical planes, and pivot members passing through said pivot abutment and said cover members.

12. In a hinge and cover assembly, a plurality of laterally spaced base members adapted to be secured to an abutment, a pivot abutment projecting upwardly from each base member, a lower cover member pivoted to said pivot abutments and an upper cover member pivoted, at a higher level, to said pivot abutments, said covers being both slotted to receive said abutments, and pivot members passing through said pivot abutments and cover members.

13. For use with a hinge and cover assembly, a base member, said base member including a base flange and a pivot abutment flange at right angles thereto, said pivot abut-

ment flange lying in a single plane and being provided with pivot receiving apertures, said apertures lying at different heights above said base flange, and being laterally out of alignment.

14. For use with a hinge and cover assembly, a base member, a flat pivot abutment upwardly projecting from said base member, said abutment being provided with pivot apertures, said apertures being positioned at different heights above said base, and being laterally out of alignment.

Signed at Chicago, county of Cook and State of Illinois, this 21st day of November, 1928.

NORTON A. MEARS.