(No Model.)

E. L. BROWN.

HINGE FOR VAULT COVERS.

No. 339,140. Patented Apr. 6, 1886.

FIG. 1.

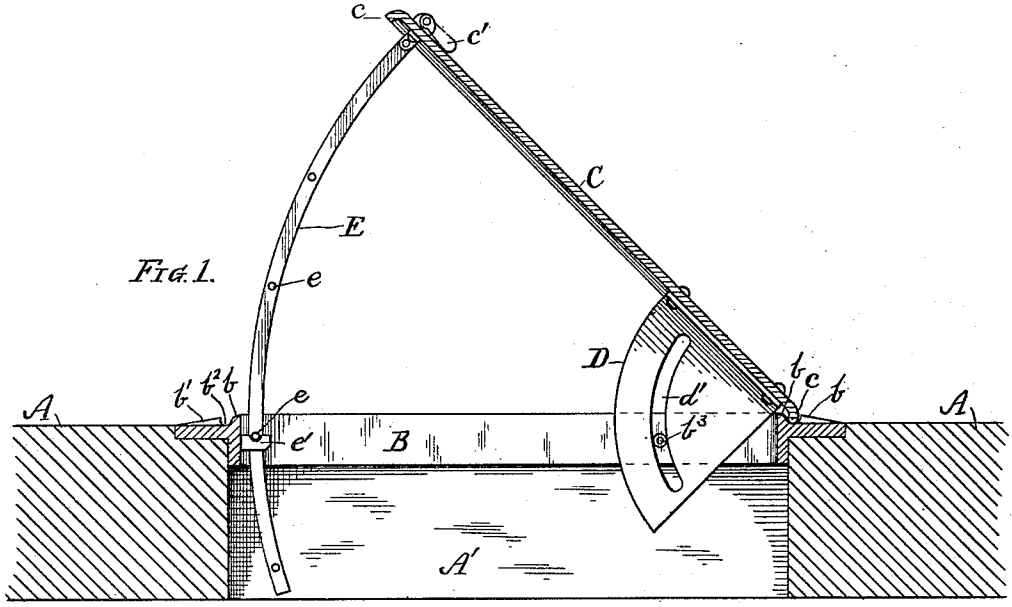


FIG. 2.

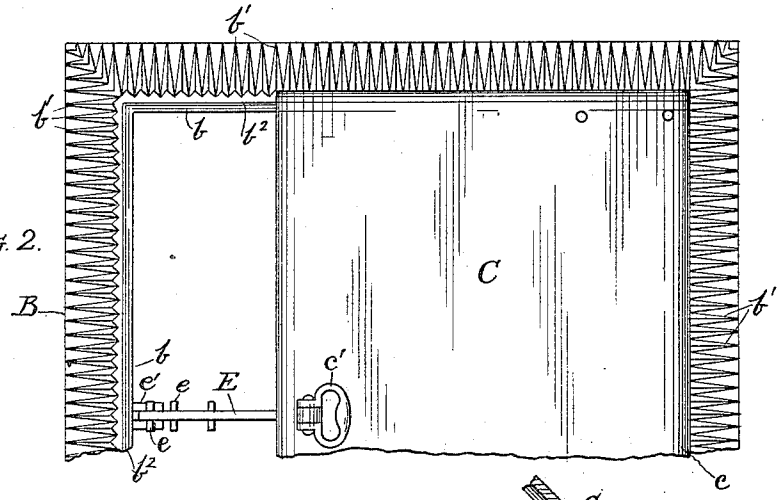


FIG. 4.

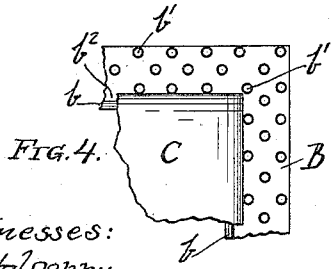
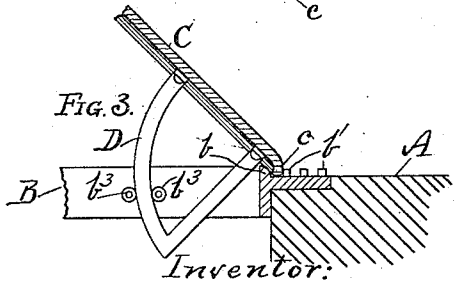


FIG. 3.



Witnesses:
J. B. Halpenny.
John S. Thompson

Inventor:
Edwin Lee Brown
By Gridley & Fletcher
Attys.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

EDWIN LEE BROWN, OF CHICAGO, ILLINOIS.

HINGE FOR VAULT-COVERS.

SPECIFICATION forming part of Letters Patent No. 339,140, dated April 6, 1886.

Application filed August 10, 1885. Serial No. 173,939. (No model.)

To all whom it may concern:

Be it known that I, EDWIN LEE BROWN, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Hinges for Vault-Covers, of which the following is a description, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical sectional view of a vault-cover, showing my improved hinge applied thereto. Fig. 2 is a plan view of the same. Fig. 3 is a detail view showing a modification thereof; and Fig. 4 is a plan view, in detail, showing a modification of the frame construction in connection with said hinge.

Like letters of reference indicate like parts.

The object of my invention is to provide a hinge for vault-covers and other analogous purposes by which I may be enabled to avoid the objection so common to ordinary hinges, that they form obstructions against which pedestrians are liable to stumble. Moreover, any obstructions which collect in the groove beneath the cover are liable to cause said hinges to be strained and broken, which objection I desire to overcome by constructing said hinge so as to yield, if necessary, to such obstruction, all of which I have hereinafter more particularly set forth and claimed.

In the drawings, A represents a sidewalk, in which A′ is a vault-opening surrounded by a frame, B, for the reception of the cover C, which consists of the usual cast-metal plate provided with depending flanges *c*, which fit over an upwardly-projecting flange, *b*, surrounding the inner edge of the frame B. The upper surface of the frame B is upon a level or in the same plane with that of the sidewalk, while around said frame, and extending inwardly and inclining upwardly to a height nearly equal to that of the upper surface of the cover C, I provide projections *b′*, preferably of a triangular shape, as shown in Fig. 2, and approaching sufficiently near to the flange *b* to form a groove or gutter, b^2, for the reception of the depending flange *c*, which, when the cover is raised, abuts against the ends of the projections *b* and turns loosely in said gutter. A continuous projection might accomplish the same purpose, but would prevent said gutter from being drained.

Attached rigidly to the inside of the cover C, at or near the ends of the cover, by means of rivets *d*, or otherwise, I provide sector-shaped flanges D D, one of which is shown in Fig. 1, said flanges being provided with circular slots *d′ d′*, the arcs of which are concentric with the axis of said cover or the depending flange *c*. Upon either side of the frame B, so as to engage with said slots *d′ d′*, I provide stationary projecting studs b^3, Fig. 1, which are preferably provided with friction-rollers. When the cover C is raised and lowered, the studs b^3 within said slots *d′* serve to guide the movement of said cover and to prevent its displacement, while the bearing of the flange *c* against the projections *b′* coacts with said slot and roller-stud and prevents undue strain or friction thereon. Should ice, dirt, or other obstructions collect in the gutter b^2 near the side upon which said cover is hinged, the slot *d′* may permit said cover to yield slightly thereto, and thus prevent breakage or injury, while guarding against the raising of said cover from the hinged side. Said cover may be lifted by means of the usual handle, *c′*, and supported, when open, by the ordinary curved bar, E, having pins *e*, which rest in notches in projecting studs *e′ e′*.

In Fig. 3 may be seen a modification or equivalent of the construction shown in Fig. 1. In lieu of the slot *d′* and single stud b^3, the inner portion of the sector-shaped flange may be cut out, leaving a skeleton or quadrant-shaped bar, D, which may be utilized in like manner as the slot by placing roller-studs b^3 b^3 upon both sides thereof, respectively, and in lieu of the triangular projections *b′* shown in Figs. 1 and 2 one or more, but preferably three, rows of studs or bosses, *b′*, may be employed; but I prefer those shown in the figures first named, for the reason that they not only coact equally well with the hinge, but form an incline to prevent stumbling against the cover.

Having thus described my invention, I claim—

1. A hinge for vault and other covers, consisting of a flange upon the edge of the cover, fitted loosely in a groove in the frame, and depending sector-shaped flanges provided with circular slots arranged to engage stationary guide-studs, substantially as described.

2. The combination, with a vault-cover having the depending flange *c*, of the sector-shaped flanges D D, having slots concentric with the axis of said cover, and the coacting stationary studs b^3 and projections *b'*, substantially as and for the purposes set forth.

3. In a vault-cover, the flange *c*, having a bearing in the groove *b* the depending sector-shaped flanges D D, provided with slots *d'*, and the stationary studs b^3 of the frame, all arranged and combined substantially as specified.

4. The combination, with a vault-cover having depending flanges *c* and guide-flanges D D beneath, of the projections *b'* upon the frame of said cover, substantially as and for the purposes described.

EDWIN LEE BROWN.

Witnesses:
D. H. FLETCHER,
M. M. GRIDLEY.