

V. CERNY.
HINGE.

APPLICATION FILED JAN. 27, 1910.

1,048,038.

Patented Dec. 24, 1912.

Fig. 1.

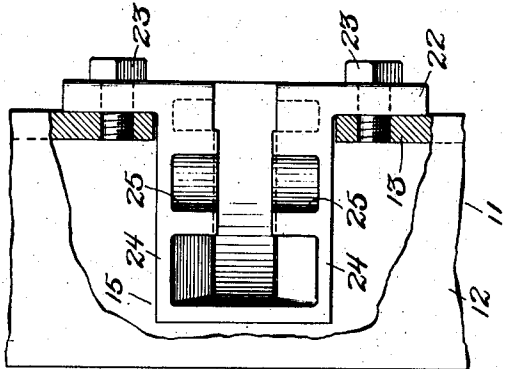
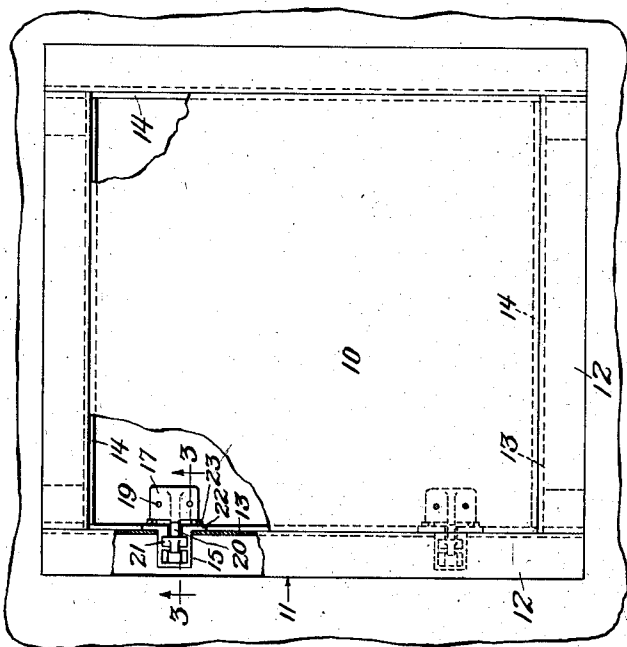


Fig. 2.

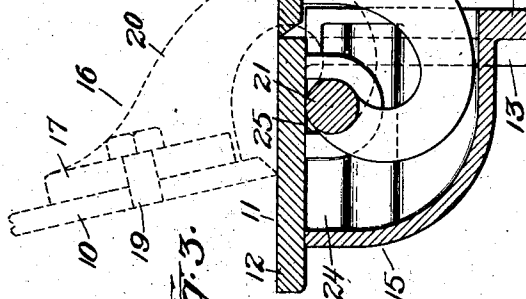


Fig. 3.

Fig. 4.

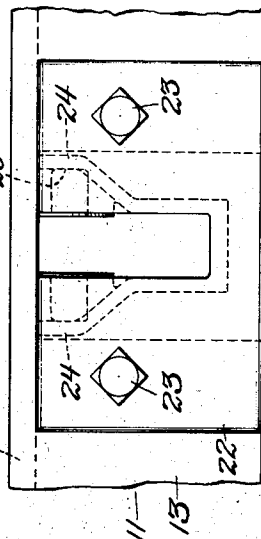
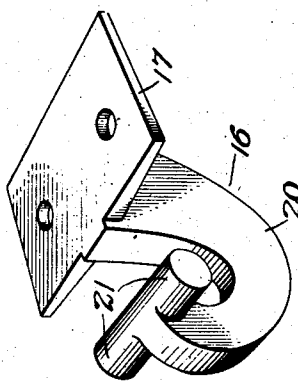


Fig. 5.



Witnesses:
M. Daggett.
W. Goldberger.

Inventor:
Vaclav Cerny.
by William H. Hays,
Att'y.

UNITED STATES PATENT OFFICE.

VACLAV CERNY, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO JAMES PICKAS, OF CHICAGO, ILLINOIS.

HINGE.

1,048,038.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, VACLAV CERNY, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Hinges; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in hinges for side walk trap doors and other generally like uses, and the invention consists in the matters hereinafter set forth and more particularly pointed out in the appended claims.

Among the objects of the invention is to provide an improvement in hinges for this purpose in which the arrangement of the hinge and the door frame is such that the connection of the hinge to the frame reinforces and strengthens the latter, and to provide means for connecting the hinge and frame in such manner that the hinge member carried by the frame may be removed without disturbing the frame or the cement in which the frame may be partially embedded. Other objects of the invention are to produce an exceedingly strong and durable hinge which may be made at small cost and which will require no special machine operations to assemble the hinge members.

In the drawings, Figure 1 is a plan view of a door and its frame provided with hinges embodying my invention. Fig. 2 is a plan view of the fixed member of the hinge with door frame bar broken away. Fig. 3 is an enlarged vertical sectional view of the hinge on line 3—3 of Fig. 1. Fig. 4 is a face view of the fixed hinge member attached to the door frame bar. Fig. 5 is a detached view of the swinging member of the hinge.

As shown in the drawing, 10 designates the door which fits in a horizontal rectangular frame that is supported in the side walk around an opening therein in any suitable manner. Said frame is shown as composed of angle bars 11, 11, the upper horizontal flanges 12 of which are arranged flush with the upper face of the side walk, and the vertical webs 13 of which extend into the side walk opening at the side thereof. Stops 14 are attached to the inner sides of the frame

bars to support the door in its closed position. Two hinges swingingly connect the door with the frame and the following description is directed to a single hinge.

Each hinge comprises a fixed member 15 and swinging member 16. The latter member is attached to the door near the edge of the door, and the former is attached to the angle frame bar at one side of the door opening. The swinging member 16 of the hinge comprises a flat attaching web or plate 17 that fits flat against the under side of the door and is attached thereto by the screw bolts 19, and a downwardly and rearwardly curved bearing arm 20 which extends beyond the outer edge of the door and is provided at its outer end with oppositely extending lugs or pintles 21 arranged transversely to the plane of the arm.

The fixed hinge member comprises a hollow shell-like body that is open at its top and also at its front to receive the arm 20 of the swinging member. Said fixed member extends outwardly through an opening in the vertical web of the angle frame bar 11 and fits at its flat open upper side against the lower face of the horizontal flange of the angle frame bar. It is formed at its front side with a flat flange 22 which fits against the front face of the web 13 of the angle frame bar and is attached thereto by bolts 23. The said hollow or shell-like body of the fixed hinge member is formed with a slot at its inner side and through this slot extends the rearwardly extending curved arm of the swinging hinge member. The said hollow body of the fixed hinge member is provided on its side walls 24, 24, near the top thereof with interior semi-cylindric, upwardly facing bearing sockets 25, 25. These bearing sockets receive the lugs or pintles 21 of the rearwardly curved bearing arm of the swinging member of the hinge, said bearing sockets and the lugs or pintles constituting the hinge axis about which the swinging member turns. The body is hollowed out below and at the outer side of said bearing socket to receive the curved bearing arm when the hinge is in its closed position, as shown in Fig. 3. The fixed member of the hinge is attached to the angle frame bar after the swinging member thereof has been interlocked therewith, and when said fixed member is inserted through the opening in the web of the frame bar

and fixed with its open side fitted up against the flange of said bar, the lugged bearing arm will be locked in the hollow fixed member of the hinge.

5 The flange 22 at the front side of the fixed hinge member extends from the upper to the lower side of the vertical web 13 of the frame bar so as to cover the opening in the frame bar through which the fixed hinge
10 member extends. It will be observed that the upper open side of the fixed hinge member fits with a relatively wide bearing against the under face of the flange of the frame bar. This bearing of the fixed hinge
15 member against said flange, and the bearing of the attaching flange 22 of said member against the vertical web of the frame bar constitutes, when the member is bolted to the frame bar, a rigid reinforcement or
20 stiffening device for the bar at the notched or recessed portion. Such reinforcement is valuable or advantageous in that it strengthens the bar to receive the weight of the door when the latter is thrown open in the position indicated in dotted lines in Fig. 3.

It will be observed that the door or swinging member of the hinge is located below and is entirely concealed by the door, so that the side walk has no projecting parts that
30 extend above the level of the door against which the foot may strike. Furthermore, the said hinge, being located below the door, does not receive the wear to which an exposed hinge is subjected when placed upon
35 the side walk level. Another advantage of the hinge is the ease and facility in which it may be assembled, there being no parts requiring machining to assemble or to apply the hinge in place. It therefore becomes
40 possible to very materially cheapen the cost of producing the hinge, as compared to hinges requiring the parts to be machined and having a number of parts to be assembled. The construction of the hinge and
45 the manner of its attachment to the frame bar is such that the fixed member of the hinge stiffens or reinforces the frame bar at its notched part which receives said fixed part of the hinge.

50 I claim as my invention:

1. The combination with a trap door and its frame, the latter composed of angle bars having vertical webs and horizontal, outwardly directed flanges, of a hinge therefor
55 comprising a hollow fixed member, provided at its inner side with a slot, and a swinging member, the web being provided with an opening of a width to permit the fixed member to pass therethrough and the fixed member extending outwardly through the opening of the web and having means accessible

from the inner side of said web to removably attach it to said web, and the swinging member being attached to the under side of the door and provided with a bearing arm that extends into the hollow fixed member through its slot and is pivoted to said fixed member. 65

2. The combination with a trap door and its frame, the latter composed of angle bars, the webs of which are vertical and have openings to receive the fixed members of the hinges and the horizontal flanges of which are unslotted and are directed outwardly and arranged in the plane of the door, of hinges therefor, comprising hollow fixed members having end, rear, front and bottom walls and open at their tops and fitted to the under sides of the flanges in the angles between the flanges and the webs of the frame bars and extending through said openings of the web, the inner walls of the fixed members being slotted and extending at their ends beyond said end walls to constitute flanges which lap over the front
85 faces of said webs and are removably attached thereto, and swinging members attached to the under side of the door and extending through the slots in the inner walls of the fixed members for pivotal connection with internal bearings in the fixed members. 90

3. The combination with a trap door and its frame, the latter composed of angle bars having vertical webs and outwardly extending flanges, of a hinge therefor comprising a hollow fixed member and a swinging member, said fixed member extending outwardly through an opening in the vertical web of the frame bar, and being open at its top and provided at its inner side with a slot and at the sides of said slot with flanges which fit against and are attached to the inner side of the web of the frame bar, the upper open side of the fixed member fitting up against the lower side of the horizontal flange of the frame bar and provided with interior bearings and the swinging hinge member comprising an attaching plate or flange attached to the under side of the door and an outwardly extending arm which extends into the hollow fixed member and is pivotally engaged with the interior bearing thereof. 100 105 110

In testimony, that I claim the foregoing as my invention I affix my signature in the presence of two witnesses, this 22nd day of January A. D. 1910. 115

VACLAV CERNY.

Witnesses:

WILLIAM L. HALL,
WILLIAM GOLDBERGER.