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W. M., W. I. & H. D. BOULDEN.

DROP AND CELLAR DOOR HINGE.

APPLICATION FILED MAR. 16, 1905.

Fig. 1.

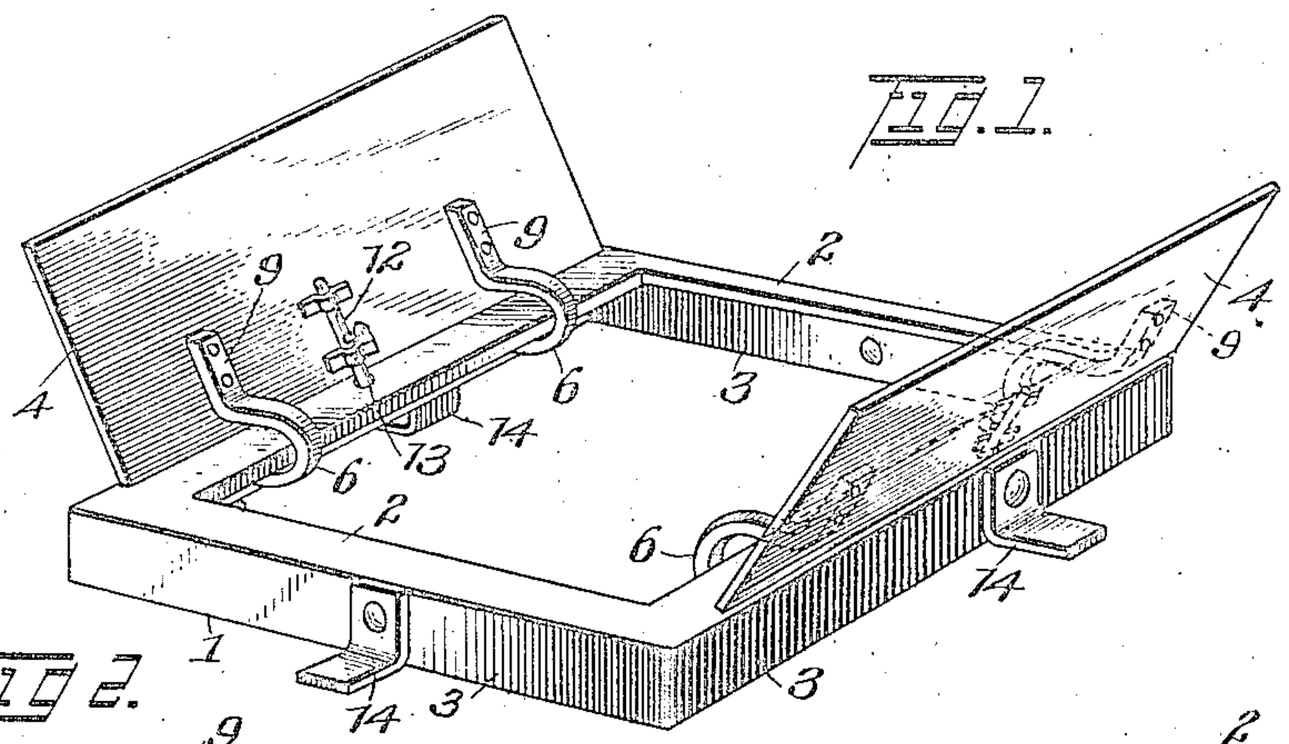



Fig. 2.

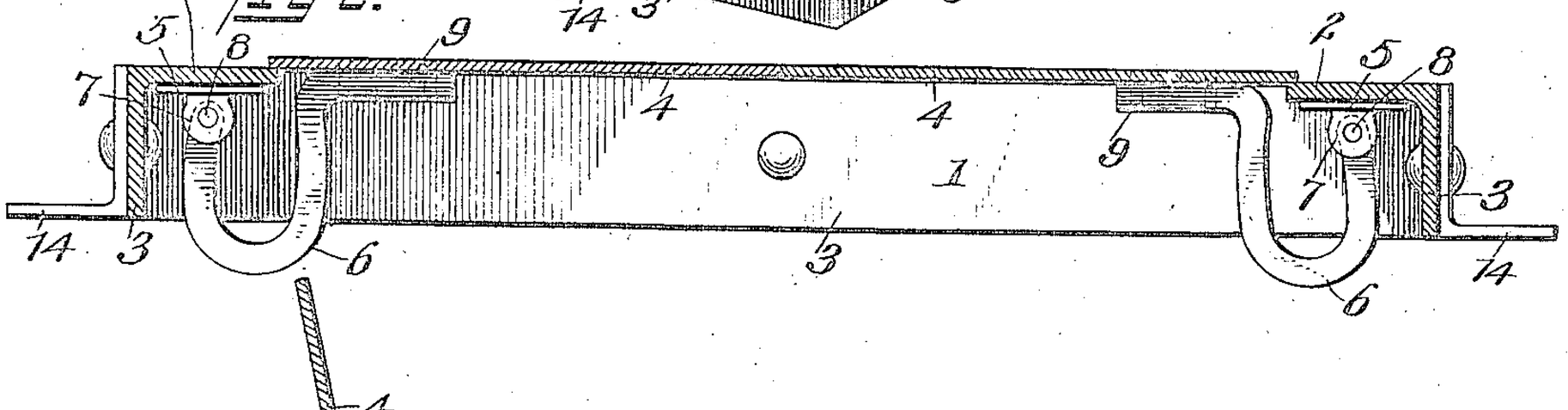



Fig. 3.

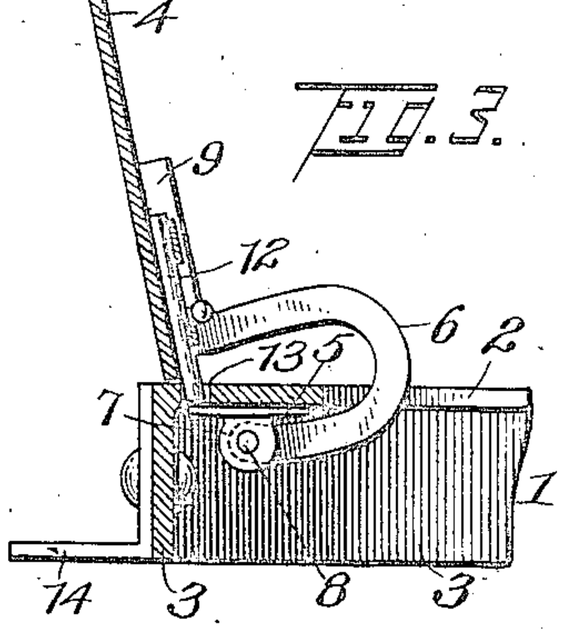



Fig. 4.

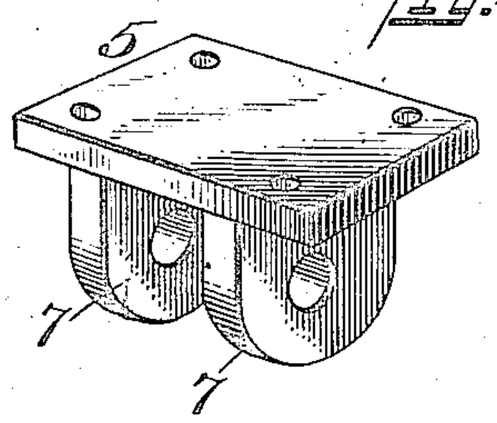
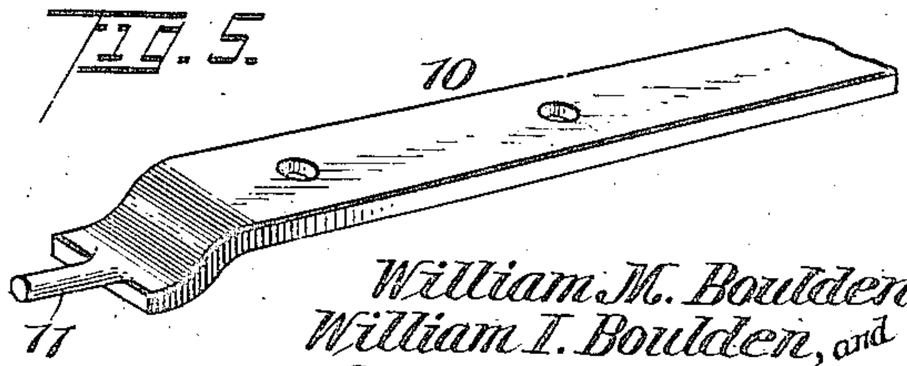



Fig. 5.

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# UNITED STATES PATENT OFFICE.

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## DROP AND CELLAR-DOOR HINGE.

No. 817,748. Specification of Letters Patent. Patented April 17, 1906.

Application filed March 16, 1905. Serial No. 250,498.

*To all whom it may concern:*

Be it known that we, WILLIAM M. BOULDEN, WILLIAM I. BOULDEN, and HERBERT D. BOULDEN, citizens of the United States, residing at Chester, in the county of Delaware and State of Pennsylvania, have invented certain new and useful Improvements in Drop and Cellar-Door Hinges; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to a drop and cellar-door hinge.

The object of the present invention is to improve the construction of hinges and to provide a simple and comparatively inexpensive one of great strength and durability, designed particularly for use on cellar-doors and adapted when the cellar-doors are opened to permit the weight of the same to rest upon the supporting-frame and capable when the doors are closed of enabling the same to present a smooth exterior to avoid obstructions and to prevent pedestrians from stumbling or falling.

A further object of the invention is to provide a device of this character capable when the cellar-door is opened of automatically locking the same securely in such position to prevent the door from being accidentally closed.

With these and other objects in view the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion, size, and minor details of construction within the scope of the claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a perspective view of a pair of cellar-doors provided with drop-hinges constructed in accordance with this invention, the doors being open. Fig. 2 is a transverse sectional view of the same, the doors being closed. Fig. 3 is a transverse sectional view of one side of one of the cellar-doors and the supporting-frame or base, the parts being arranged as shown in Fig. 1. Fig. 4 is a detail perspective view of one of the fixed hinge members. Fig. 5 is a detail perspective view illustrating another form of fixed hinge member.

Like numerals of reference designate corresponding parts in all the figures of the drawings:

1 designates a rectangular supporting-frame or base, designed to be constructed of any suitable material and preferably consisting of angle-iron sides and ends having horizontal top flanges or portions 2 and vertical portions or flanges 3, arranged at the outer edges of the horizontal top portions or flanges 2, as clearly illustrated in Figs. 2 and 3 of the drawings. The angle-iron sides and ends may be formed integral with each other, as illustrated in Fig. 1 of the drawings; but the frame may be constructed in any other desired manner, as will be readily understood.

The supporting-frame or base receives a pair of cellar-doors 4, consisting, preferably, of plates of iron and adapted when closed to rest upon the upper faces of the sides and ends of the frame or support, as clearly indicated in Fig. 1 of the drawings. The cellar-doors are connected with the frame or support by interiorly-arranged hinges, each consisting of a fixed member 5 and a movable member 6. The fixed member may, as illustrated in Fig. 4 of the drawings, consist of an attachment-plate and a pair of perforated lugs, forming ears or eyes 7 for the reception of a pintle 8, which connects the movable hinge member to the fixed hinge member. The movable hinge member consists of a substantially U-shaped bar or piece having one end perforated to receive the pintle and arranged between the eyes or ears 7, and the other end of the bar or piece is bent outward approximately at right angles to form an attachment-arm 9, which is secured to the lower face of the door 4, as clearly shown in Fig. 2 of the drawings. The attachment arm or portion may be secured by rivets or other suitable fastening devices to the door, and the U-shaped portion or bend is adapted to clear the supporting-frame or base when the cellar-door is opened. The eyes or ears are located at a point beneath the median line of the horizontal flange or portion 2 of the sides of the base or supporting-frame, and

when the cellar-door is opened the U-shaped body portion or bend of the movable hinge member extends to a point above the horizontal flange or portion 2 and permits the cellar-door, as illustrated in Fig. 3, to rest upon the supporting-frame or base, whereby the joint of the hinge is relieved of strain. Instead of employing a fixed hinge member of the form illustrated in Fig. 4 of the drawings a bar or plate 10 may be employed for hinging the movable members to the supporting-frame or base. The bar or frame 10, one-half of which is illustrated in Fig. 5 of the drawings, is provided with a terminal pivot 11, adapted to engage the eye or perforation of the movable member. By this construction a single bar or piece may be employed for connecting the two movable members of a cellar-door to the base or supporting-frame. The hinges by being interiorly arranged permit the cellar-door to present a smooth exterior, so that there are no projections over which pedestrians might stumble or fall.

Each cellar-door is provided at its inner or lower face adjacent to its hinged edge with a slidable bolt 12, which when the cellar-door is opened is adapted to automatically engage the base or supporting-frame, whereby the cellar-door is firmly locked in its open position and is effectually prevented from being accidentally closed. Each side of the base or supporting-frame is provided with a perforation 13, arranged to be engaged by the slidable bolt, as clearly illustrated in Figs. 1 and 3 of the drawings. The slidable bolt, which may be mounted on the cellar-door in any suitable manner, is provided with a suitable handle for enabling it to be withdrawn from engagement with the base or supporting-frame when it is desired to close the cellar-door.

The base or supporting-frame is provided at its sides and ends with projecting lugs 14, extending horizontally from the base or supporting-frame to facilitate the mounting of the same in position at a cellar-opening. These lugs are preferably formed by L-shaped plates or pieces secured to the vertical flanges or portions of the sides and ends of the base or supporting-frame.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a device of the class described, the combination with a base or support, and a door, of an interiorly-disposed hinge arranged to swing the door in opening over the base or support, and a locking device mounted on the door and arranged to automatically engage the exterior of the base or support for locking the door in its open position.

2. In a device of the class described, the combination with a base or support, and a door, of a hinge connected with the door and arranged to swing the door in opening over the base or support, and a slidable bolt mounted on the door and arranged to engage the exterior of the base or support automatically when the door is open.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

WILLIAM M. BOULDEN.
WILLIAM I. BOULDEN.
HERBERT D. BOULDEN.

Witnesses:
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