Aug. 23, 1932. C. A. BRETHEN 1,873,534

HINGE CONSTRUCTION

Filed Feb. 15, 1932

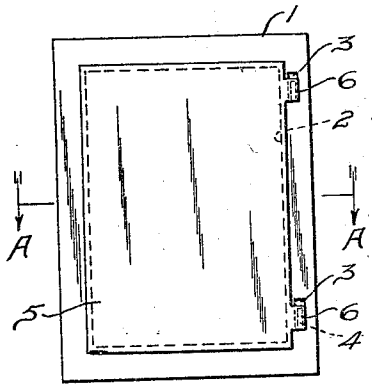


Fig. 1.

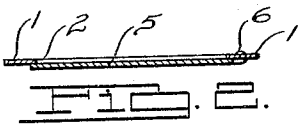


Fig. 2.
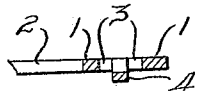


Fig. 4.

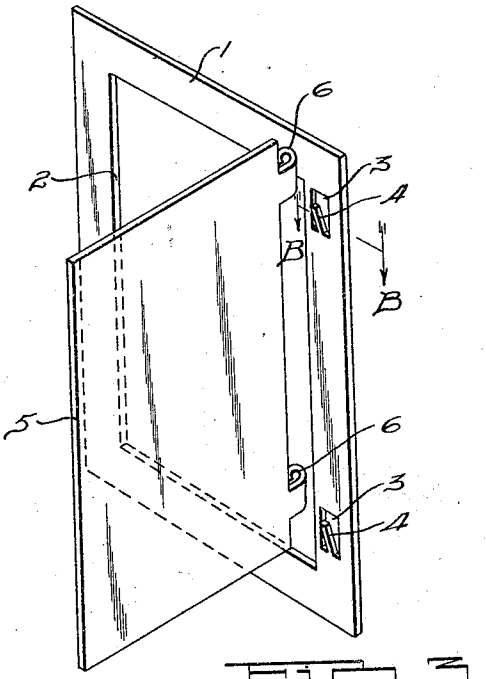


Fig. 3.

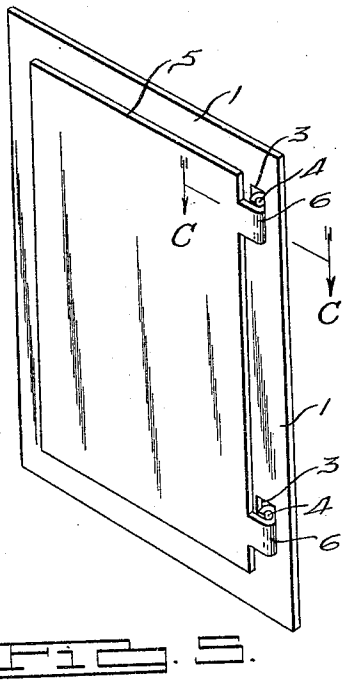


Fig. 5.

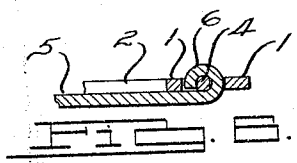


Fig. 6.

INVENTOR
Charles A. Brethen.
BY Emory B. Wiener
ATTORNEY

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UNITED STATES PATENT OFFICE

CHARLES A. BRETHEN, OF WYANDOTTE, MICHIGAN, ASSIGNOR TO ALL METAL PRODUCTS COMPANY, OF WYANDOTTE, MICHIGAN, A CORPORATION OF DELAWARE

HINGE CONSTRUCTION

Application filed February 15, 1932. Serial No. 592,872.

This invention relates to hinge constructions and the object of the invention is to provide a hinge construction particularly adapted for use in connection with sheet metal members where a simple and strong hinge is desired.

Another object of the invention is to provide a hinge including angularly extending tongues or pins on which a door may be mounted, the said pins being arranged to be bent back into the plane of the door and when so bent preventing removal of the door from the pins.

Another object of the invention is to provide a hinge construction including a door frame having angularly extending pins, the door being provided with tubular hinge portions adapted to be positioned over the pins and the door being adapted to be pressed inwardly to press the pins back to the plane of the door frame, at which time, the door cannot be removed from the pins and at the same time will readily swing thereon.

A further object of the invention is to provide a hinge construction of the character described in which the door is supported at the base of the pins so that it is practically impossible to bend the pins outwardly by pulling on the door.

These objects and the several novel features of the invention are hereinafter more fully described and claimed and the preferred form of construction by which these objects are attained is shown in the accompanying drawing in which—

Fig. 1 is an elevation of a door provided with my improved hinge construction.

Fig. 2 is a section taken on line A—A of Fig. 1.

Fig. 3 is an enlarged perspective view of the door and frame illustrating the method of assembly.

Fig. 4 is an enlarged section taken on line B—B of Fig. 3.

Fig. 5 is a perspective view of the door and frame assembled.

Fig. 6 is an enlarged section taken on line 6—6 of Fig. 5.

The construction is particularly adapted for use with sheet metal members and the door frame 1, which may be of any suitable shape or size and which may be an integral portion of a cabinet or other sheet metal member, is provided with a door opening 2 therein. At one side of the door opening a pair of apertures 3 are formed, each aperture being provided with an integral tongue or pin 4, which extends centrally of the aperture 3 and also extends outwardly at a slight angle from the bottom of the aperture 3 as will be understood from Fig. 4. The door 5 is also formed from sheet metal and is formed to provide a pair of tubular hinge portions 6 as shown. These hinge portions 6 extend inwardly from the plane of the door 5 as shown and are spaced apart the same distance as the tongues or pins 4. In assembly the door is preferably positioned at a right angle to the door frame and the tubular hinge portions 6 are positioned over the hinge pins 4 and are pressed downwardly on said hinge pins. As the hinge portions 6 are pressed downwardly the door 5 is pressed toward the door frame 1 by grasping the outer edge of the door and pressing inwardly thus bending the pins 4 inwardly into the plane of the door frame, at which time, the portions 6 are moved to the bases of the pins 4 and rest on the metal at the bottom of the apertures 3 as will be understood from Figs. 5 and 6.

In this manner the door is hingedly mounted in the frame on the pins 4 and as will be understood from Fig. 5 if the door 5 is swung outwardly it cannot be pulled away from the door frame due to the fact that the lower edges of the hinge portions 6 engage against the bases of the pins 4 at the point where the said pins connect to the door frame. As the metal is very strong at this point it would almost take a shearing action on the pins 4 to pull the door 5 away from the frame 1. At the same time the door cannot be lifted off from the pins 4 as the tubular hinge portions 6 will engage against the metal at the upper edge of the apertures 3. This construction is excellently adapted for use with sheet metal toys and other articles of similar nature where a very cheap hinge construction is desired, which, at the same time, is

strong enough to withstand the usual misuse given it by children.

From the foregoing description it becomes evident that the device is very simple and efficient in operation, will not easily get out of order, is composed of few parts and is of consequent low manufacturing cost and provides a device which accomplishes the objects described.

Having thus fully described my invention, its utility and mode of operation, what I claim and desire to secure by Letters Patent of the United States is—

1. A hinge construction comprising a sheet metal door frame having a pair of spaced apertures at one side, each aperture being formed to provide an integral tongue extending upwardly at a slight angle from the bottom of the aperture, a sheet metal door formed to provide spaced tubular hinge portions at one side of the plane of the door adapted to be positioned over said tongues and the tongues being bendable back into the plane of the door frame to pivotally support the hinge portions on the tongues within said apertures, the tubular door hinge portions resting on the metal at the bottom of said apertures and at the bases of said tongues.

2. A hinge construction comprising a sheet metal member having a door opening and provided with a pair of angularly extending pins adjacent the door opening, the metal being provided with an inverted U shaped aperture about each pin and a door having a pair of spaced tubular hinge portions adapted to be positioned over the pins, the said tubular portions when positioned over the pins being movable into the apertures about the pins to bend the pins into the plane of the sheet metal member.

3. A hinge construction comprising a sheet metal member provided with a pair of spaced apertures each having a tongue extending upwardly at a slight angle therefrom, a door member having a pair of spaced tubular hinge portions adapted to be inserted over the tongues, the tongues being bent back into the plane of the sheet metal member after the tubular hinge portions have been positioned thereover.

4. A hinge construction comprising a sheet metal member having an aperture provided with a tongue extending at a slight angle therefrom, a door member having a tubular hinge portion adapted to be positioned on the tongue, the tongue being adapted to be bent back into the aperture and into the plane of the sheet metal member to pivotally support the hinge portion thereon, the said hinge portion resting on the metal at the bottom of the aperture.

In testimony whereof I sign this specification.

CHARLES A. BRETHEN.