June 26, 1945. N. G. BACHELDOR 2,379,060

ARTICLE HOLDER

Filed April 26, 1944

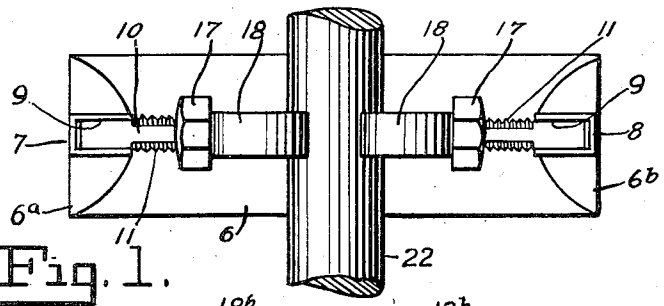


Fig. 1.

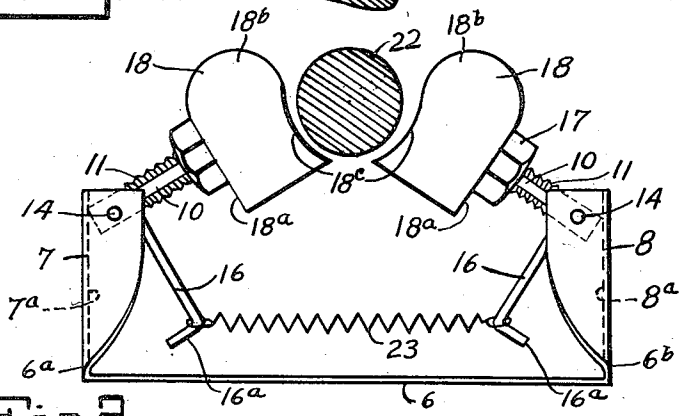


Fig. 2.

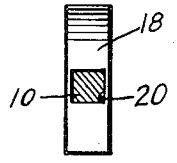


Fig. 4

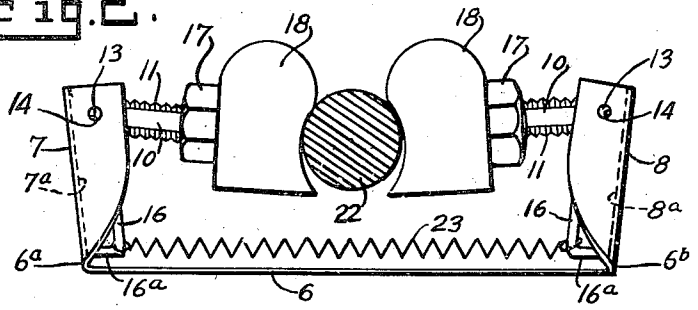


Fig. 3

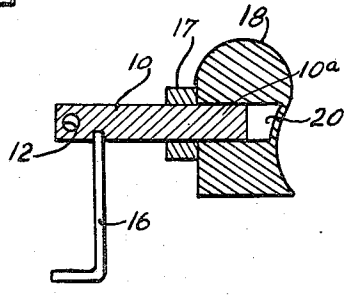


Fig. 5

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ARTICLE HOLDER

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11 Claims. (Cl. 24—254)

This invention relates to improvements in holders, and, while adapted to be designed to hold articles of different kinds varying greatly in cross-sectional shape, the invention is adapted to be applied to a holder for handles, particularly broom handles, in which connection it is illustrated in the drawing and hereinafter described.

Objects of the invention are to provide a holder of simple durable construction which can be economically manufactured, and which may be quickly and conveniently operated by manipulation of the article to hold it in a desired position or to release it therefrom.

Another object is to provide a holder of the character above indicated which can be quickly and conveniently adjusted to hold articles of different sizes.

A particular object is to provide a holder having a toggle arrangement of hingedly mounted arms, each carrying a jaw member, operable by movement of the article against the jaw members to close the same when moved to a position past a line extending between the axes on which the arms are hinged and to securely hold the article with a force greatly exceeding the operating force required to open or close said jaw members.

The above objects are accomplished and additional ends are attained by the novel construction, combination and arrangement of parts illustrated in the drawing wherein there is shown one form of the invention, it being understood that changes and modifications may be made which come within the scope of the claims hereunto appended.

In the drawing:

Figure 1 is a front elevational view of a holder constructed in accordance with this invention, the same being shown in an operated position with a portion of a handle operatively held thereby.

Figure 2 is a top plan view illustrating the holder in an open position and illustrating in cross-section a handle as the same is presented to the holder preparatory to locking it in the holder.

Figure 3 is a similar view illustrating the holder in a closed position with a handle shown in cross-section held therein.

Figure 4 is a side elevational view of the outer lateral side of one of the jaws forming a part of the holder herein disclosed, the same being shown mounted on an arm which is shown in cross-section.

Figure 5 is a central horizontal sectional view of one of the jaws and the arm on which it is adjustably secured.

Proceeding now to a detailed description of the particular embodiment of the invention illustrated in the drawing, the reference numeral 6 denotes a base plate which is preferably formed of a single sheet of metal, but may be made in any manner of any suitable material. As shown, the sheet of metal is rectangular in shape and the end portions 6*a* and 6*b* thereof are stamped to extend in the same direction, at a right angle to the main body thereof, to form the brackets 7 and 8. The brackets 7 and 8 are formed by folding the portions 6*a* and 6*b* inwardly to form the channels 9 which are disposed in the same plane and presented toward each other.

The numeral 10 denotes arms which are substantially square in cross-section, but the corners are rounded and provided with screw threads 11. Each arm 10 is provided adjacent one end thereof with a bore 12 and the side walls of the brackets 7 and 8 are provided adjacent the upper ends thereof with a bore 13. Each arm is positioned in one of the channels 9 with the bores 12 and 13 coinciding and is pivotally secured therein by a pin 14.

Each arm 10 is provided adjacent the bore 12 with an arm 16 which projects therefrom toward the base member 6. The free end of each arm 16 is formed to project outwardly at 16*a* at a right angle to contact with a wall 7*a* or 8*a* of its adjacent bracket 7 or 8 (see Figure 3). The arms 16 are positioned to limit inward movement of the arms 10 toward the plate 6 to a position past a line extending between the pins 14 on which said arms are pivoted, that is, to a position past dead center.

The numerals 18 denote jaw members each composed of a block which, in the adaptation shown in the drawing, has a straight side 18*a*. A square cavity 20 extends inwardly of each block 18 from said straight side 18*a* thereof, and at least the free end portion 10*a* of each arm 10 is squared to be non-rotably and slidably received in said cavities 20. Nuts 17 are threaded on the arms for adjustment of blocks 18 in effective operative relation to each other, as will be described later.

Each jaw member 18 is provided with a rounded forward side 18*b* and is curved inwardly on the side presented toward the other jaw member 18, as indicated at 18*c* to receive a handle 22 or other article to be held. A coil spring 23 is attached to the arms 16 to normally hold the arms 10 with the jaw members 18 in an open or non-gripping position as shown in Figure 2. In this position a handle or other article can be presented to the

jaw members 18 and forced rearwardly to the position shown in Figure 3. With the jaws positioned as shown in Figure 3, the brackets 7 and 8 are sprung outwardly and as the arms 10 will then be beyond the previously described dead-center position thereof the article 22 will be securely held between said jaw members. A slight pull on the article will swing the jaws 10 outwardly and release the article from the holder.

In operation the multiplication of force resulting from the toggle action of the arms 10 and jaw members 18 will cause the article to be held between the jaw members with a much greater force than is required to swing the jaw members to a closed position. When the arms 10 have been swung past the line of dead-center extending between the pivots 13 the jaws will be securely held in position, but can be easily released by moving the article outwardly past said line.

By operating the nuts 17 the jaw members 18 may be quickly and conveniently adjusted to regulate the pressure on the article or to accommodate the holder to articles of different sizes.

As shown by dotted lines in Figure 2, the hinged ends of the arms 10 terminate a sufficient distance from outer lateral walls 7*a* and 8*a* of the brackets 7 and 8 to be engageable therewith for limiting the outward swinging movement of the arms 10.

Having thus illustrated a preferred form of my invention and described the same in detail, what I claim as new and desire to secure by Letters Patent is:

1. In a holder of the character described, a base member of resilient material, having its opposite end portions stamped to form parallel members, the outwardly presented end portions of said members being folded to provide brackets having channels presented toward each other; a pair of arms, each arm pivotally secured in one of said channels for limited swinging movement in the same plane; a jaw member slidably mounted on the free end portion of each arm; a nut threaded on each arm, each nut bearing against the jaw member thereon; said nuts operable to regulate the distance between said jaw members, said jaw members having oppositedly arched cooperating faces arranged, when an article is placed therein and forced toward said base member to incline the arms toward the plane of said base member, to securely hold the article between said jaws, yieldable means normally holding the arms with the jaws in an open position and means limiting the movement of the arms toward said base member.

2. In a holder of the character described, a base member, having its opposite ends stamped to form parallel members, the outwardly presented end portions of said members being folded to provide brackets having channels presented toward each other; a pair of arms, each arm pivotally secured in one of the said channels for limited swinging movement in the same plane; a jaw member slidably mounted on the free end portion of each arm; a nut threaded on each arm, each nut bearing against the jaw member thereon; said nuts operable to regulate the distance between said jaw members, said jaw members having oppositely arched cooperating faces arranged, when an article is placed therein and forced toward said base member to incline the arms toward the plane of said base member, to securely hold the article between said jaws and yieldable means normally holding the arms with the jaws in an open position.

3. In a holder of the character described, a base member of resilient material, having its opposite end portions stamped to provide brackets having channels presented toward each other; a pair of arms, each arm pivotally secured in one of said channels for limited swinging movement in the same plane; a jaw member slidably mounted on the free end portion of each arm; a nut threaded on each arm, each nut bearing against the jaw member thereon; said nuts operable to regulate the distance between said jaw members, said jaw members having cooperating faces, arranged, when an article is placed thereagainst and forced toward said base member to incline the arms toward the plane of said base member, to securely hold the article between said jaws.

4. In a holder of the character described, a base member, a pair of brackets projecting in parallel relation from said base member; a pair of arms pivotally secured to said brackets for limited swinging movement in the same plane; a jaw member slidably mounted on the free end portion of each arm; a nut threaded on each arm; each nut bearing against the jaw member thereon; said nuts operable to regulate the distance between said jaw members, said jaw members having oppositely arched cooperating faces arranged, when an article is placed therein and forced toward said base member to incline the arms toward the plane of said base member, and securely hold the article between said jaws.

5. In a holder of the character described, a base member; brackets projecting therefrom; a pair of arms, each arm pivotally secured to one of said brackets for limiting swinging movement in the same plane; a jaw member slidably mounted on the free end portion of each arm; means operable to adjust the position of the jaw member on each arm; said jaw members having cooperating faces arranged, when an article is placed thereagainst and forced toward said base member to incline the arms toward the plane of said base member, to securely hold the article between said jaws; yieldable means normally holding the arms with the jaws in an open position and means limiting the movement of the arms toward said base member.

6. In a holder of the character described, a base member; two brackets projecting in the same general direction from said base member; an arm hinged to each bracket for swinging movement in the same plane; spring means normally moving said arms to an outward position; a jaw non-rotatably mounted on each arm for sliding movement thereon; adjustable means to limit the sliding movement of each jaw; said jaws having opposed faces cooperating to receive the article to be held; each of the article engaging faces of said jaws having an inwardly presented portion which project laterally toward each other for engagement by the articles to be held, to swing said arms by toggle movement toward said base to an article retaining position, spaced inwardly from the line of their pivotal mounting; and means to limit the inward movement of said arms to said article retaining position.

7. In a holder of the character described, two brackets mounted to project in the same general direction; an arm hinged to each bracket for swinging movement in the same plane; spring means normally moving said arms to an outward position; a jaw non-rotatably mounted on each arm for sliding movement thereon; said jaws having opposed faces cooperating to receive the

article to be held; the opposed faces of said jaws having portions engageable by the article to be held, to swing said arms by toggle movement inwardly to an article retaining position spaced inwardly from the line of their pivotal mounting; and means to limit the inward movement of said arms to said article retaining position.

8. In a holder of the character described, a base member; two arms mounted thereon and presented toward each other for pivotal movement in the same plane; means normally moving said arms to an outward position; a jaw on each arm, said jaws having opposed faces for receiving the article to be held; the article engaging faces of said jaws having portions engageable by the article to be held to swing said arms by toggle movement toward said base member, to an article retaining position spaced inwardly from the line of their pivotal mounting; and means to limit the inward movement of said arms to said article retaining position.

9. In a holder of the character described, a base member; spaced brackets extending from said base member, an arm hinged to each bracket for swinging movement in the same plane; a spring normally moving said arms to an outward position; a jaw mounted on each arm, said jaws adapted to receive the article to be held; said jaws engageable by the article to be held, to swing said arms to an article retaining position spaced inwardly from the line of their pivotal mounting.

10. In a holder of the character described, a base member; two resilient brackets projecting in the same general direction from said base member; an arm pivoted to each bracket for swinging movement in the same plane; a spring normally moving said arms to an outward position; a jaw non-rotatably mounted on each arm for sliding movement thereon; adjustable means on each arm to limit the sliding movement of each jaw; said jaws having opposed faces engageable by the article to be held for toggle movement to and from an article retaining position.

11. In a holder of the character described, two brackets mounted to project in the same general direction; an arm hinged to each bracket for swinging movement in the same plane; spring means normally moving said arms to an outward position; a jaw non-rotatably mounted on each arm for sliding movement thereon; said jaws having opposed faces cooperating to receive the article to be held; the opposed faces of said jaws having portions engageable by the article to be held, to swing said arms by toggle movement inwardly to an article retaining position spaced inwardly from the line of their pivotal mounting; means to limit the outward swinging movement of said arms to an article receiving position and means to limit the inward movement of said arms to an article retaining position.

NEWELL G. BACHELDOR.