Jan. 17, 1967 M. L. SHEPARD 3,298,647

BAG HOLDER

Filed July 20, 1965 2 Sheets-Sheet 1

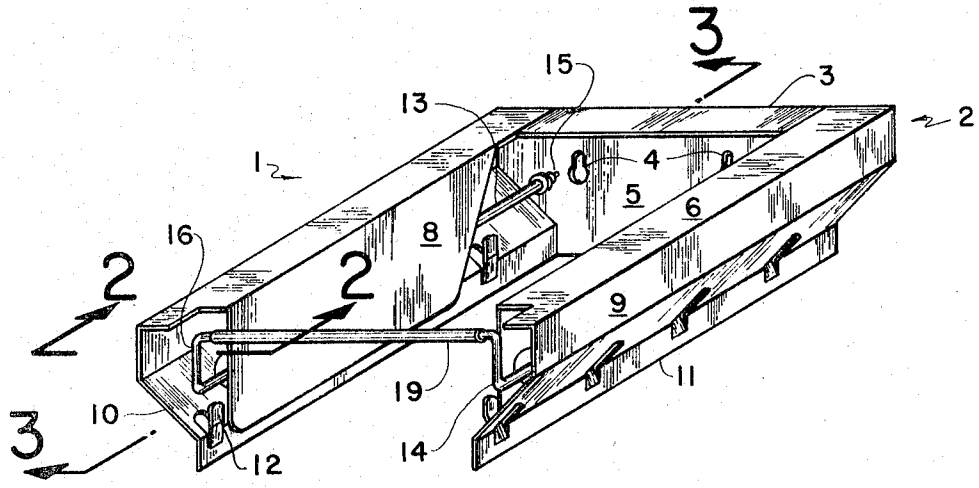
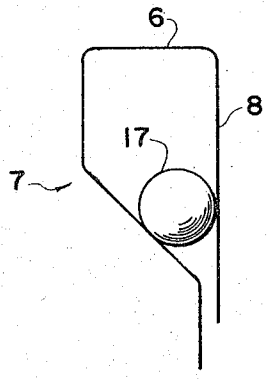
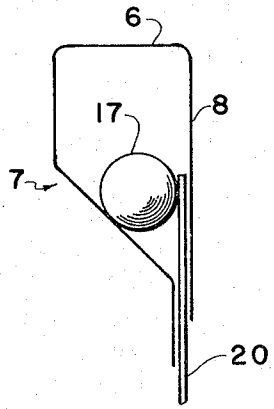



Fig. 1



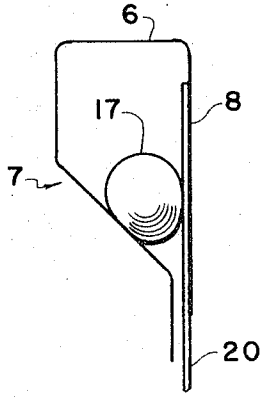




Fig. 4a Fig. 4b Fig. 4c

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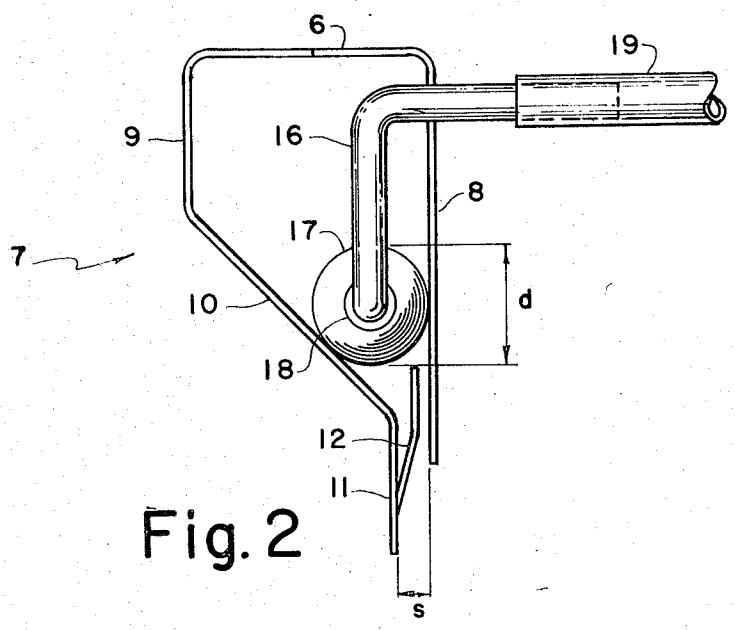



Fig. 2

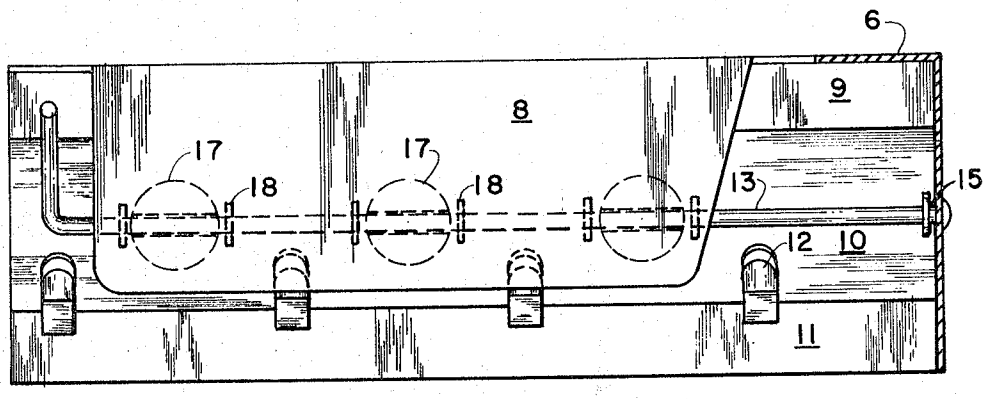



Fig. 3

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3,298,647

# BAG HOLDER

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5 Claims. (Cl. 248—101)

The present invention is directed to a bag holder for supporting a bag with the mouth thereof in a fully opened position.

Bag holders find utility in a variety of environments, such as, for example, supporting disposable refuse bags, supporting mail bags during sorting, or supporting bags during filling thereof with a fluent material. Regardless of the particular end use envisioned however, a bag holder has at least three, prime, functional requirements. These are: the bag must be easily attachable to the bag holder, the holder must provide a firm support for the bag with the mouth thereof in a fully distended position and, the bag must be easily removable from the holder.

To this end, prior art bag holders have usually taken one of two forms. That is, a type that utilized a series of prongs designed to pierce the edge of the bag to hold it in position, or a clamping type, which generally incorporated spring-loaded, lever actuated cams.

In the former, the prongs would tend to tear the disposable type bags and hence, not provide a firm support, and of course, the fact that the bags were pierced, rendered the prong type support entirely unsuitable for reuseable bags, such as mail bags.

The clamping type, on the other hand, while they did not tend to mutilate the bag, were generally expensive to construct and often easily thrown out of adjustment.

It is, therefore, an object of the present invention to provide a bag holder to which a bag may be easily attached, firmly supported in the open position and readily removed, and yet, one which will not mutilate the bag it supports and is of relatively simple construction.

In accordance with these criteria, therefore, the bag holder of the present invention permits a bag to be attached thereto by a single, upward movement of the bag edge.

Further, when attached to the bag holder, the bag is firmly supported with its mouth fully opened in such manner that the force with which the bag is retained in the holder will actually increase with increased downward force on the bag.

Additionally, through the use of a simple release mechanism forming a part of the present invention, the bag may be readily released from the holder when desired, regardless of the load imposed on the bag at the time of release.

It will also be noted that with the bag holder of the present invention the bag is not pierced or mutilated in any way.

As a further feature, the present bag holder is of relatively simple construction, which renders it inexpensive to construct and difficult to throw out of adjustment.

These and other features and advantages of the present invention will be apparent from the following decription wherein:

FIGURE 1 is a perspective view of the bag holder of the present invention;

FIGURE 2 is a sectional view taken on line 2—2 of FIGURE 1;

FIGURE 3 is a sectional view taken on line 3—3 of FIGURE 1; and

FIGURES 4*a*–4*c* are somewhat diagrammatic representations of the manner in which a bag is inserted and attached to the bag holder of the present invention.

Referring now to FIGURES 1–3 of the drawings, it will be seen that the bag holder comprises a pair of channel shaped frame members **1** and **2**, which are shown as rigidly interconnected by an angle shaped member **3**, having key-hole slots **4** formed in its vertical wall **5**, for attachment to a wall bracket or the like. It will be apparent, that although the frame members **1** and **2** are shown as interconnected by an angle member **3**, this feature may be dispensed with and the channel members **1** and **2** provided with brackets at their rear ends in order that they may be directly attached to a wall or other supporting structure at any desired spacing. Alternatively, the channel members **1** and **2** might be incorporated in a cabinet or other supporting structure.



Turning to FIGURE 2 of the drawings, it will be seen that each frame member comprises a top wall portion **6** and a pair of side wall portions **7** and **8**. Side wall portion **7** includes a first downwardly extending portion **9**, extending at right angles to top wall portion **6**, and a second downwardly extending portion **10**, converging toward side wall portion **8** away from top wall portion **6** to a minimum spacing *s*. An extension **11** of side wall portion **7** has struck therefrom a series of tabs **12** which extend in converging relationship to side wall portion **8** toward the top wall portion **6**.

Disposed within each of the frame members **1** and **2**, as seen in FIGURE 1, and extending longitudinally thereof, are substantially L-shaped rod members **13** and **14**, respectively. Each rod member is provided with a loose pivotal support, as at **15**, adjacent the rear end of the corresponding frame member and extends longitudinally through the channel shaped frame member and outwardly thereof as at **16**.

Rotatively mounted on each rod member, as shown in FIGURE 3, at spaced intervals therealong, are a series of resilient balls **17**, which may be maintained in their proper, spaced relationship, by means of spacers **18**. It may also be noted here that the maximum dimension *d*, of the balls **17** is substantially greater than the minimum spacing *s* of the side wall portions **7** and **8**.

If desired, a hollow tube **19** may also be provided, extending across the front of the bag holder, and loosely receiving in each of its ends an extension of each of the rod members **13** and **14** for a dual purpose, which will presently be explained.

Referring now to FIGURES 4*a*–4*c* of the drawings, the principles of operation of the bag holder of the present invention will be explained. As seen in FIGURE 4*a*, prior to the insertion of the edge **20** of the bag into the bag holder, the balls **17** rest in the converging area between the wall portions **7** and **8**. As seen in FIGURE 4*b*, upon insertion of the edge of the bag into the opening formed by the terminal portions of side wall portions **7** and **8**, the balls will ride up on the inclined plane **10** to allow the bag edge **20** to be fully inserted within the channel shaped frame members **1** and **2**. Due to hte fact that the rods **13** and **14**, upon which the balls **17** are mounted, are restrained only by the loose, pivotal connection **15**, the balls **17** move readily upwardly and to the left (as viewed in FIGURES 4*a*–4*c*) and hence, offer only negligible resistance to the insertion of the bag edge into the bag holder.

However, the combined weight of each set of rod and balls and the inclined surface **10** cause the balls to frictionally engage the bag edge. Thus, upon release of the bag, as the weight of the bag tends to withdraw its edge from the frame members, the resilient balls are wedged, as shown in FIGURE 4*c*, between the converging wall portions **7** and **8**. Thereafter, increasing the load carried by the bag only causes the balls and bag edge to become more tightly wedged in the bag holder. By proportioning the dimensions *s* and *d* so that *d* is substantially greater than *s*, the possibility of the balls **17** being pulled com-

pletely out of the channel members can, for all practical purposes, be avoided. It will be apparent, therefore, that the greater the downward force exerted on the side walls of the bag, the greater will be the holding force exerted by the bag holder.

Regardless of this however, it will be seen from an inspection of FIGURES 1 and 3 that the bag edges may be readily released from the channels by simply moving the outwardly extending portions **16** of the rod members upwardly about their pivot points **15**. In this regard, it will be noted that if the tube **19** is provided extending across the front of the bag holder and receiving at each end thereof, the ends of the rod members **13** and **14**, both rod members may be pivoted upwardly simultaneously and both edges of the bag released at the same time. Additionally, where the bag holder is to be used to support refuse bags which function as collection centers for the contents of other, smaller refuse containers, the rod **19** forms a convenient support for supporting the smaller containers while emptying the contents thereof into the larger, central, collection container.

As best seen in FIGURES 1–3, tabs **12** may also be provided extending upwardly towards the top wall portion **6** in converging relationship to side wall portion **8**. These tabs serve as a simple but efficient means for insuring that all portions of the bag edge are secured on the same side of the balls **17** and prevent the crumpling and jamming of the bag edge which might otherwise occur.

From the foregoing will be apparent that applicant has devised a bag holder which is relatively simple in construction and operation, but yet functions efficiently to provide a firm support for a fully opened bag.

While a specific embodiment of the invention has been disclosed for purposes of illustration, it will be understood that variations thereof will readily occur to those skilled in the art within the scope of the appended claims.

I claim:

**1.** Apparatus of the type described comprising:

(a) A pair of frame members of generally channel-shaped cross section extending in spaced, substantially parallel relationship to each other,

(b) each of said frame members including a top wall portion and a pair of opposing side wall portions,

(c) said side wall portions converging toward each other away from said top wall portion for at least a portion of their extent to a point of minimum spacing therebetween,



(d) an elongated rod member disposed within each of said channel shaped frame members and extending longitudinally thereof,

(e) one end of each of said rod members extending outwardly of its corresponding channel shaped frame member,

(f) means providing a pivotal support for the opposite end of each of said rod members adjacent a corresponding end of each of said channel shaped frame members, and

(g) resilient means mounted on each of said rod members,

(h) the maximum cross-sectional dimension of said resilient means being greater than said minimum spacing.

**2.** The apparatus of claim **1** wherein:

(a) Means is provided interconnecting said outwardly extending rod members; whereby said rod members may be simultaneously pivoted about their opposite ends.

**3.** The apparatus of claim **1** wherein said resilient means comprises:

(a) A series of resilient balls mounted on each rod member in spaced relation to each other.

**4.** The apparatus of claim **1** wherein:

(a) Guide means is provided upon each of said frame members adjacent an opening defined by said side wall portions for guiding an edge of a bag between said resilient means and an adjacent wall portion.

**5.** The apparatus of claim **4** wherein said guide means comprises:

(a) A series of tabs extending from one of said wall portions in converging relationship to the other of said side wall portions and toward said top wall portion.


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