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Goines

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[54] **INDUSTRIAL BUCKET IMPROVEMENT**

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[52] **U.S. Cl.** ..... **280/79.2;** 15/264; 16/126; 220/94 R; 220/95; 294/68

[51] **Int. Cl.²** **B62B 5/06;** B65D 25/28

[58] **Field of Search** ..... 294/55, 26.5, 57, 58, 68, 294/69 R, 73; D7/187; 15/264; 16/110.5, 126; 220/69, 72, 85 D, 85 H, 91, 92, 94 R, 94 A, 95, 96; 222/164, 166; 224/45 C; 280/79.2

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[57] **ABSTRACT**

An industrial bucket used for janitorial and similar services featuring an improved construction to facilitate emptying of the contents including a lever arrangement pivotally mounted to the base of the bucket and extending outwardly to be conveniently grasped by the user. A spring attached from lever to bucket base enables the user to maintain control as the bucket is tilted as its contents are emptied.

6 Claims, 3 Drawing Figures

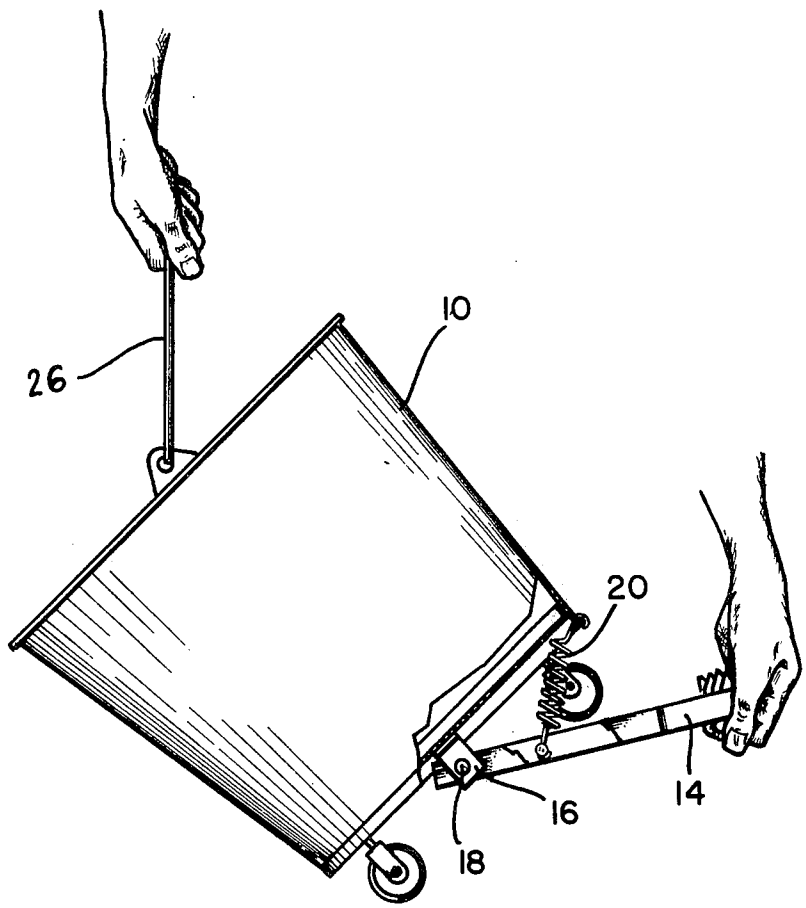
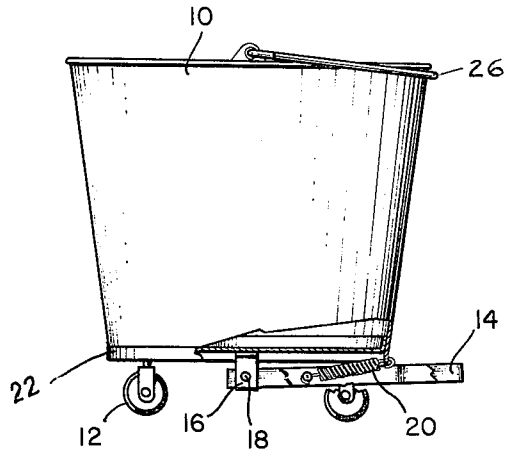


Fig. 1



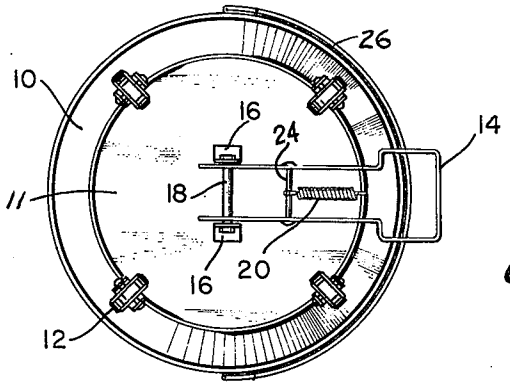


Fig. 2

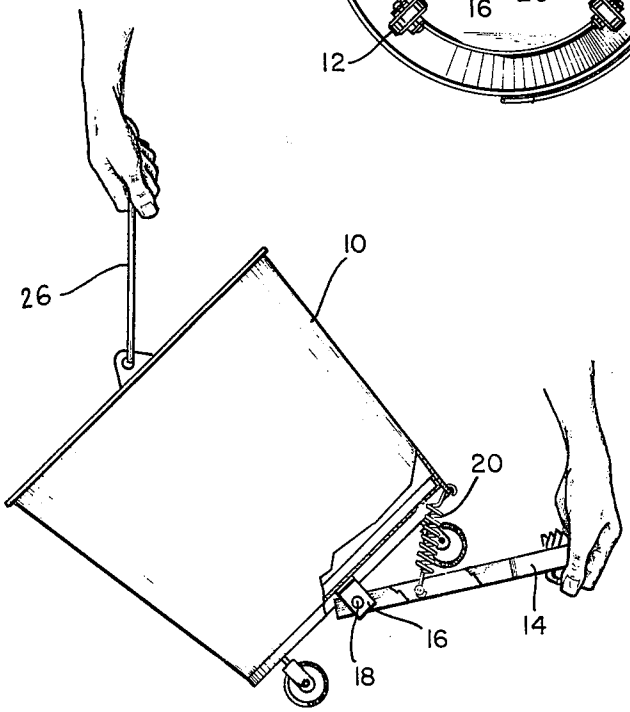


Fig. 3

INDUSTRIAL BUCKET IMPROVEMENT

BACKGROUND OF THE INVENTION

1. Field of the Invention

The subject invention has utility when used with containers generally, and buckets specifically, of many designs. It is particularly advantageous when used with industrial buckets wherein the buckets are maintained on wheels or on a frame with wheels and are of extremely durable construction. When such buckets are filled, their heavy weight makes them burdensome to the user who may be engaged in various types of janitorial services requiring the constant filling and emptying of such buckets over a long continuous period of time.

Most industrial buckets of this description are supplied with wheels or mounted on frames having wheels and the subject invention has particular utility with such structure since the improvement members as will be described may be conveniently placed underneath the bucket without interfering with the use of the bucket as it is pushed or during mopping or scrubbing operations.

2. Prior Art

The industrial buckets now in use are generally equipped with a top handle or bail and have no other means to facilitate lifting and tilting thereof. In practice, to empty a heavy bucket, users are required to lift the bucket by its bail and then grasp a lower flange around the base of the bucket to swing the bucket in an arc as a tilting motion is imparted thereto.

Some buckets are provided with holders that can be secured along both the top and bottom sidewalls such as shown in U.S. Pat. No. 140,527 - Munsen wherein the handles F are shown positioned, one each at metal bands B and C at the top and bottom respectively of the tub.

While such handles provide some measure of control, there is no real advantage over grasping the bucket by the bail and the lower flange except that the lower handle F of Munsen may be somewhat easier to grasp and permit better hand control than the lower flange of a standard bucket. The burdensome weight is still present during emptying operations and the tiring effect to a user's shoulders and back is not relieved.

SUMMARY OF THE INVENTION

Accordingly, it is an object of the subject invention to provide an industrial bucket construction wherein there are improvements to provide the user with leverage advantages to facilitate lifting and tilting the bucket during emptying operations.

It is a further object of the subject invention to provide an industrial bucket with a lower member which by providing a leverage advantage to the user facilitates emptying operations.

It is still a further object of the subject invention to provide leverage advantages in emptying operations to the users of industrial buckets and to provide structure which can be easily adapted to present bucket or pail designs.

It is still one other object of the subject invention to provide an industrial bucket with a lower gripping device which is conveniently located without interfering with any of the other structures necessary for use of the bucket.

It is one more object of the subject invention to provide a container to which there is appended a leverage improving member to facilitate emptying operations.

Accordingly, as set forth in the above objects, industrial bucket construction has been improved upon by the addition of a lower lever type member which is pivotally secured to the base of the bucket in such manner to enable the user of the bucket to grasp the lever in conjunction with grasping the bail to facilitate lifting, tilting and emptying of the bucket. A spring member acts as a restraint between a portion of the bucket body and the lever to provide for a controlled rate of emptying which is advantageous during cleaning operations.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a side elevational view of an industrial cleaning bucket showing the improvement of this invention;

FIG. **2** is a bottom view of the bucket shown in FIG. **1**; and

FIG. **3** shows the bucket of FIG. **1** being emptied as facilitated by the subject invention.

DETAILED DESCRIPTION

As shown in FIGS. **1** and **2**, a standard industrial bucket is shown comprising primarily the side wall portion **10** and the base closure portion **11** which may be secured together by any acceptable way known to the industry. Wheels **12**, of which four are shown in FIG. **2**, are secured in any acceptable manner to the bucket and provide suitable transportation means by which the bucket can conveniently be rolled from one location to another.

It is within the contemplation of the present invention that the above-described bucket and wheel construction may be integral or in the alternative the wheels may be mounted to a lower frame and the bucket secured thereto.

The subject invention comprises a lever member **14** which may be shaped as shown and which may be secured to L-shaped plates **16** mounted to the base of the bucket **11**. A bolt member **18** may be extended through apertures in the lever member **14** and in the mounting members **16** to pivotally secure the lever member **14** to the mounting members **16**. While lever member **14** is shown having a generally U-shape as best seen in FIG. **2**, it will be appreciated that this can as well be formed from a number of shapes such as a single unitary lever bar or can comprise a bifurcated member with the two ends terminating in a stirrup type of shape conveniently forming a handle.

A spring member **20** is shown secured to a lower flange member **22** of the bucket and extends to cross-member **24** which is secured between the arms of the lever member **14**. As shown, the cross member **24** may be a simple bar or bolt member around which the one extremity of spring **20** is secured. The opposite end of the spring **20** may also terminate in a hook member which is secured in an aperture of the flange member **22**. It should be appreciated that the spring **20** may be mounted in a variety of ways and if for example, in place of lever member **14**, a single bar member is used, a screw extension nub-like member can be used as the basis for securing the spring **20** thereto. It should also be noted that the other extremity of the spring **20** which is mounted to a bucket portion can be secured to another part of the bucket, such as a portion of the base **11** and may be secured in a variety of common ways.

Alternate forms of construction may be used to eliminate the spring **20** as shown so long as the construction forms some restraint on the lever member **14** to provide the ability to control the rate of discharge of the contents. Such construction may comprise the manner in which the lever member **14** is pivotally mounted to the bucket to create a firm connection and require at least a fair amount of force to rotate the lever member **14** from its rest position where it lies in juxtaposition to the bucket base **11.** Various means of biasing the lever member **14** to its rest position may be utilized.

While the L-shaped mounting members **16** may be secured to the base **11** of the bucket by welding or soldering, different alternative means of securement may be used. For example, in the design of some commercial bucket types, ribs extend diametrically across the base of the bucket and are used to mount the wheels **12.** The lever member **14** may be secured pivotally to this rib structure by bolt or other means.

As shown in FIG. **3,** the handle or bail **26** of the bucket may be grasped by one hand and the lever member **14** by the other so that the contents may be discharged and emptied under controlled conditions. The spring **20** as shown in FIGS. **1** and **2** is taut enough to keep the handle **14** in a position that is approximately parallel to the floor level and to the base member **11** of the bucket. As the bucket is lifted and tilted, the spring is extended as shown in FIG. **3** and permits leverage advantages while at the same time, maintains the lever member **14** in a semi-restrained position with respect to the bucket bottom to keep the contents from dumping in uncontrolled fashion under the influence of gravity as the bucket is tilted to an advanced position.

Advantages in using the lever member **14** result from the leverage which is provided in combination with the restraint offered by the spring member **20** or other alternate means. This provides the type of controlled emptying which is necessary for reasons such as to prevent flooding a sink by releasing the contents too quickly. By providing the leverage as disclosed herein considerable mechanical advantage is gained to lessen the toil of users during emptying operations.

In place of the bail **26,** an upper flange or the top portion of the side wall **10** of the bucket may be grasped or in the alternative, handles such as disclosed in the Munsen U.S. Pat. No. 140,527 may be mounted in spatial relationship around the upper perimeter of the bucket to be grasped by one hand.

While various embodiments of the invention have been shown and described, it will be understood that various modifications may be made. The appended claims, therefore, are intended to define the true scope of the invention.

I claim:

1. A bucket comprising:

a bucket body including side wall structure and a base member;

upper lift means disposed near the top of the bucket for grasping the bucket;

a lever means extended below said base member when said bucket is in an upright position and secured to said base member at a centrally disposed position and extending outwardly of said side wall structure;

means of pivotally securing said lever member to said base member; and

restraining means for urging said lever member toward a position parallel with said base member so that when said bucket is grasped simultaneously by the upper means and by the lever means and tilted, said restraining means will provide controlled restraint as contents of said buckets are emptied, with said upper lift means and said lever means being able to be grasped, lifted and tilted in one motion.

2. The bucket of claim **1** wherein the restraining means comprises a spring means which is mounted near a point of intersection between said side wall structure and said base member at one end and to said lever means at its second end.

3. The bucket of claim **1** wherein said lever means comprises a substantially U-shaped member including a handle portion extending outwardly below said sidewall structure.

4. The bucket of claim **1** further including wheels mounted around the base of said bucket and in which said lever member is placed in juxtaposition to the base of said bucket in avoidance of interference with rolling action of said wheels.

5. The bucket of claim **1** wherein said means of pivotally securing said lever member includes the use of L-shaped mounting members secured to the base of said bucket and adapted to receive connecting means whereby said lever is connected to said mounting members.

6. The bucket of claim **1** wherein said bucket includes a lower depending flange and said restraining means includes a spring biasing member secured to said depending flange and to said lever member.

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