A funnel for filling sand bags includes a bowl having a reinforced wall and a reinforced lip extending along a perimeter of the bowl. The funnel further includes an elongate section formed integrally with the bowl and defining a flow path from the bowl. The elongate section includes an opening distal to the bowl, and also includes at least one rib formed in the elongate section and extending along at least a portion of the perimeter of the elongate section. A base is formed integrally with the elongate section and is sized and shaped to allow the funnel to be free-standing when receiving sand. A stop integrally formed with the base includes a flange that extends along at least a portion of the interior surface of the base.
FUNNEL FOR FILLING SANDBAGS
RELATED APPLICATIONS
[0001] Not Applicable

BACKGROUND OF THE INVENTION
[0002] 1. Field of the Invention
[0003] The present invention relates generally to a funnel, and more particularly to a funnel for filling sand bags with sand.
[0004] 2. Background
[0005] The use of sand bags is well known in the art. Sand bags are commonly used to control water when rivers overflow, or when dikes or levees become damaged or break. They are also used as fortifications in military applications, for protection of individuals or structures from damage during a military engagement. They may also be used to prevent erosion of soil around a structure or at other locations, or even to provide material for inexpensive, environmentally-sustainable housing.
[0006] Under many circumstances, particularly during emergencies such as during flooding or during military engagements, it is essential that sand bags be filled quickly. Often, there may be few people available to devote to the task of filling sand bags. Filling sand bags can be a cumbersome and time-consuming process, particularly when one person is acting alone.
[0007] What is needed, therefore, is a device to allow one person to more efficiently fill a sand bag with sand.

SUMMARY OF THE INVENTION
[0008] The present invention provides a funnel for filling sand bags. In one aspect of the invention the funnel includes a bowl having a reinforced wall and a reinforced lip extending along a perimeter of the bowl. The funnel further includes an elongate section formed integrally with the bowl and defining a flow path from the bowl. The elongate section includes an opening distal to the bowl, and also includes at least one rib formed in the elongate section and extending along at least a portion of the perimeter of the elongate section. A base is formed integrally with the elongate section and is sized and shaped to allow the funnel to be free-standing when receiving sand. A stop integrally formed with the base includes a flange that extends along at least a portion of the interior surface of the base.
[0009] In another aspect of the invention, the reinforced wall of the bowl includes a scalloped wall.
[0010] In another aspect of the invention, the funnel includes a bowl with a reinforced wall, the bowl having a first opening for receiving material and a second opening. The first opening of the bowl is wider than the second opening to direct material out of the bowl. An elongate section is in fluid communication with the bowl and defines a flow path for material exiting the bowl. A base is in fluid communication with the elongate section and defines a path for the flow of material exiting the elongate section. The base has an opening distal to the elongate section for material to exit the base. The base is sized and shaped to allow the funnel to be free-standing when receiving sand.
[0011] In still another aspect of the invention, the funnel includes a body having a first end and a second end, and a wall extending between the first and second ends and defining a flow path between the ends. The wall tapers between the first and second ends, and at least a portion of the wall is reinforced. A first opening is defined at the first end of the body and a second opening is defined at the second end of the body. The first opening is wider than the second opening, and the second opening is sized and shaped to allow the funnel to be free-standing when receiving sand.

[0012] In still another aspect of the invention, the body includes at least one rib that extends along at least a portion of the perimeter of the body.
[0013] In another aspect of the invention, a stop is formed integrally with the body. The stop includes a flange formed along at least a portion of the interior surface of the body.
[0014] In another aspect of the invention, the body includes a reinforced lip integrally formed with the body at the first opening and extending along a perimeter of the first opening.
[0015] In still another aspect of the invention, the portion of the wall that is reinforced includes a scalloped wall.

BRIEF DESCRIPTION OF THE DRAWINGS
[0016] FIG. 1 is a side perspective view of one embodiment of the present invention, wherein a top opening of the funnel is visible.
[0017] FIG. 2 is a side elevation view of one embodiment of the present invention showing multiple funnels in stacked arrangement.
[0018] FIG. 3 cross-sectional view of one embodiment of the present invention taken along line 3 of FIG. 2.
[0019] FIG. 4 is a magnified view of the area of the device of FIG. 3 indicated by the numeral 4.
[0020] FIG. 5 is a magnified view of the area of the device of FIG. 3 indicated by the numeral 5.

DETAILED DESCRIPTION OF THE INVENTION
[0021] The present invention provides a funnel device for the efficient filling of sand bags by, if necessary, a single individual. Although the funnel of the present invention is preferably integrally formed as a single, unitary device, the following description refers to various sections of the device for purposes of clarity. The present funnel can also be conceptually visualized as a single body with a wide opening at a first end and a narrower opening at a second end, the body being generally tapered between the first and second ends and having other features described below. It is further contemplated that the present device may be constructed from individual pieces that are assembled to produce the final device.
[0022] Turning to the Figures, wherein like numerals indicate like parts, FIG. 1 provides an perspective view of one embodiment of a funnel 10 of the present invention. Funnel 10 includes generally a reinforced bowl 12, an elongate section 14, annular ribs 16, base 18, reinforced lip 20, and stop 22. The present Figures and accompanying description, below, describe exemplary embodiments of the present invention and are not intended to be limiting. For example, while reinforced bowl 12 is shown in the Figures as having a scalloped wall, it is contemplated that any suitable reinforcing structure may be used with reinforced bowl 12. Also, while ribs 16 are referred to herein as “annular” ribs, in accordance with the cylindrical embodiments of the present device shown in the figures, it is to be understood that ribs 16 may be any ribs extending wholly or partially along a perimeter of the present device, and may not be annular in embodiments of the present invention that are wholly or partially non-cylindrical.
Funnel 10 is preferably a free-standing funnel with base 18 sized and shaped such that funnel 10 is available to stand on its own in a sand bag or on another surface while funnel 10 is being filled with sand. Likewise, it is preferred that funnel 10 is constructed of a suitably strong material such that funnel 10 is stable when standing on base 18 and receiving sand. Exemplary materials that may be used in the construction of funnel 10 include polyvinyl chloride, polypropylene, high-density polyethylene, polycarbonates, polystyrene, polyethylene terephthalate, carbon fiber, fiberglass, and combinations of these. It is contemplated, however, that any suitable material may be used for construction of funnel 10, and that the list above is not exhaustive.

Funnel 10 is preferably formed such that it has a unitary or one-piece construction. Bowl 12 is generally wide-mouthed and presents an upward opening when funnel 10 rests on base 18 in its free-standing position. The mouth of bowl 12 receives sand and directs the sand downward, through an opening at the bottom of bowl 12 and into integrally formed elongate section 14. Bowl 12 is preferably reinforced such that it is strengthened to withstand the weight of sand introduced therein. In the embodiment of funnel 10 shown in the Figures, the wall of bowl 12 is scalloped to provide additional strength to the bowl. Bowl 12 also preferably includes a reinforced lip 20, so that funnel 10 is not damaged by the weight of sand entering the funnel, or by a shovel or other tool used to introduce sand into funnel 10.

Elongate section 14 extends from bowl 12 and is preferably formed integrally therewith. As shown in FIGS. 1 through 3, elongate section 14 is preferably tapered, having a wider diameter at the opening to bowl 12 than near base 18. Elongate section 14 defines a flow path from bowl 12 to base 18, along which sand received by bowl 12 and directed into elongate section 14 is able to pass. Elongate section 14 preferably includes one or more annular ribs 16, which are raised along at least a portion of an exterior circumference of elongate section 14. Annular ribs 16 provide increased strength to elongate section 14, and also serve to prevent "sticking" of multiple funnels 10 when funnels 10 are stacked. As shown in FIGS. 3 through 5, the exterior surfaces of annular ribs 16 of a first funnel 10 engage the interior wall of elongate section 14 of a second funnel 10, into which the first funnel 10 has been inserted base-first. This prevents the funnels 10 from sticking to one another and allows convenient storage of multiple funnels 10, and easy removal of stacked funnels 10 when necessary or desired.

Base 18 is preferably integrally formed with elongate section 14 and extends away therefrom at an end of elongate section 14 distal to bowl 12. It is preferred that the portion of base 18 formed immediately adjacent elongate section 14 have an interior circumference less than that of the end of elongate section 14 and base 18. As shown in FIGS. 3 and 5, this creates a flange along an interior circumference of funnel 10, the ridge comprising stop 22. As base 18 extends away from stop 22, base 18 preferably grows larger in circumference, having a size and shape at its terminal edge that allows funnel 10 to stand on its own when funnel 10 is in use and receiving sand.

Methods of manufacturing the present device may vary according to the materials used to produce funnel 10. Such methods of manufacturing are known in the art and will be readily ascertainable to one of ordinary skill in the art upon reading this disclosure. Embodiments of funnel 10 constructed from thermoplastic polymers, for example, funnel 10 may be produced by injection molding, blow molding, extrusion, and the like.

The description provided above is exemplary of certain embodiments of the present invention and is provided for illustration and clarity. It is contemplated that various modifications to the invention will be readily apparent to those of ordinary skill in the art upon reading this disclosure, those such modifications are intended to fall within the spirit and scope of the present invention. For example, while the present device is shown in figures as being generally cylindrical and having a circular cross-section, it is contemplated that any suitable geometric shape may be used for production of the present device, and that various embodiments of the present device may have oval, square, triangular, or rectangular cross-sections, or any other suitable geometric cross-section.

Having thus described the preferred embodiment of the invention, what is claimed as new and desired to be protected by Letters Patent includes the following:

1. A funnel for filling sand bags, the funnel comprising: a bowl for receiving sand, the bowl comprising a reinforced wall and a reinforced lip integrally formed with the bowl and extending along a perimeter thereof; an elongate section formed integrally with the bowl and defining a flow path from the bowl for receiving sand from the bowl, the elongate section defining an opening at an end thereof distal to said bowl, the elongate section further comprising at least one rib formed therein and extending along at least a portion of a perimeter thereof; a base formed integrally with the elongate section distal to said bowl and allowing the movement of sand there through, the base and sized and shaped to allow the funnel to be free-standing when receiving sand; and a stop integrally formed with the base, the stop comprising a flange formed along at least a portion of an interior surface of said base.

2. The funnel of claim 1 wherein the reinforced bowl comprises a scalloped wall.

3. A funnel for filling sand bags, the funnel comprising: a bowl comprising a reinforced wall, the bowl further comprising a first opening for receiving material therein and a second opening, the first opening being wider than the second opening to direct material out of the bowl; an elongate section in fluid communication with the bowl and defining a path for the flow of material exiting the bowl; and a base in fluid communication with the elongate section and defining a path for the flow of material exiting the elongate section, the base having an opening distal to the elongate section for allowing material to exit the base, wherein the base is sized and shaped to allow the funnel to be free-standing when receiving sand.

4. The funnel of claim 3 wherein the elongate section includes at least one rib formed therein and extending along at least a portion of a perimeter thereof.

5. The funnel of claim 3 further comprising a stop integrally formed with the base, the stop comprising a flange formed along at least a portion of an interior surface of said base.

6. The funnel of claim 3 wherein the bowl comprises a reinforced lip integrally formed with said bowl and extending along a perimeter thereof.

7. The funnel of claim 3 wherein the reinforced bowl comprises scalloped edges.
8. A funnel for filling sand bags, the funnel comprising:
   a body comprising a first end, a second end, and a wall extending between the first and second end, the wall tapering between the first and second end and defining a flow path therebetween, at least a portion of the wall being reinforced;
   a first opening defined by the body at the first end; and
   a second opening defined by the body at the second end,
wherein the first opening is wider than the second opening, and further wherein the second opening is sized and shaped to allow the funnel to be free-standing when receiving sand.

9. The funnel of claim 8 wherein the body includes at least one rib formed therein and extending along at least a portion of a perimeter thereof.
10. The funnel of claim 8 further comprising a stop integrally formed with the body, the stop comprising a flange formed along at least a portion of an interior surface of said body.
11. The funnel of claim 8 wherein the first end of the body comprises a reinforced lip integrally formed with said body at the first opening and extending along a perimeter thereof.
12. The funnel of claim 8 wherein the portion of the wall that is reinforced comprises a scalloped wall.

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