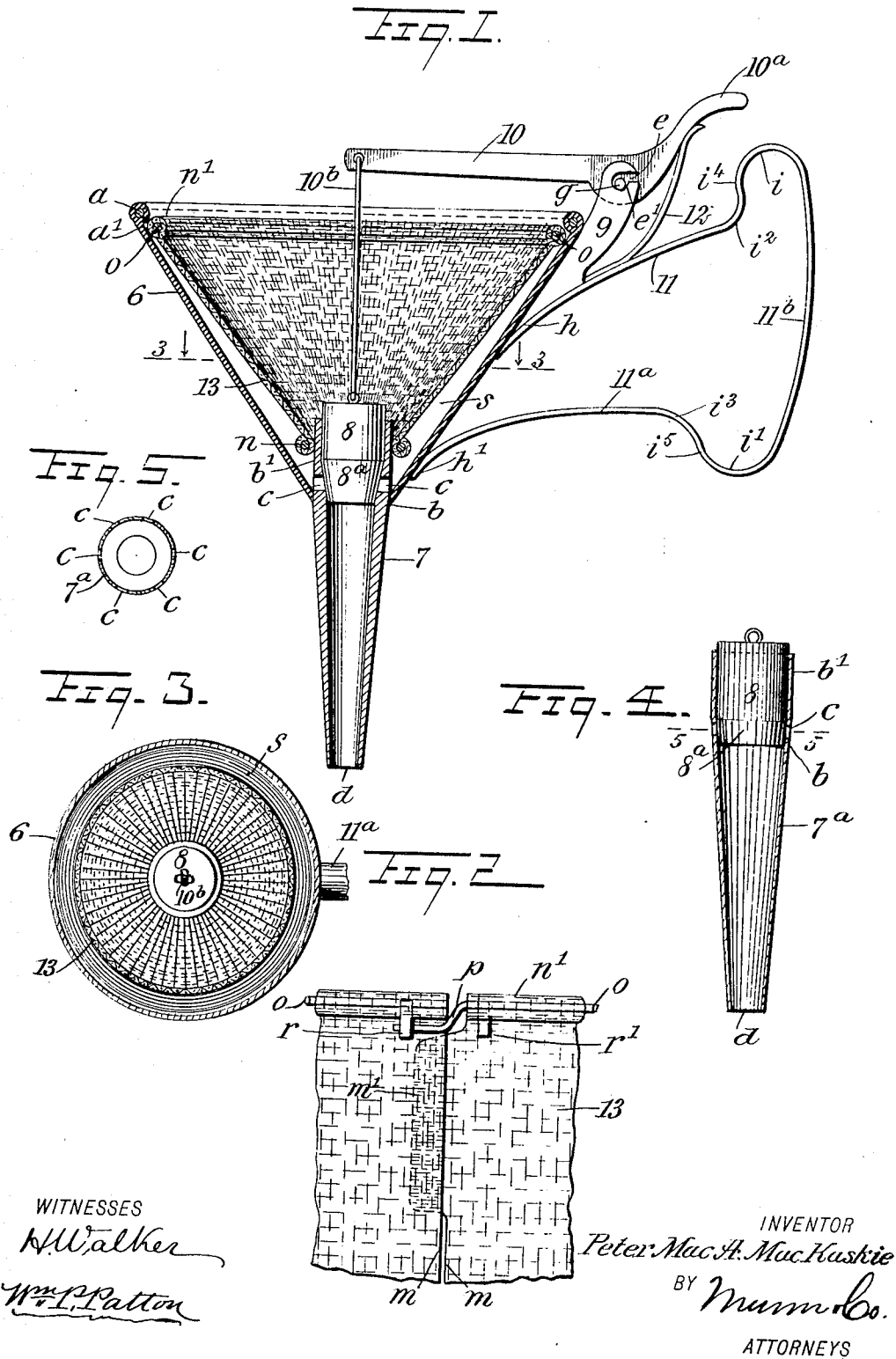


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COMBINED MEASURE, FUNNEL, AND FILTER.
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COMBINED MEASURE, FUNNEL, AND FILTER.

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To all whom it may concern:

Be it known that I, PETER MACALLISTER MACKASKIE, a citizen of the United States; and a resident of Central, in the county of Nye and State of Nevada, have invented a new and Improved Combined Measure, Funnel, and Filter, of which the following is a full, clear, and exact description.

The purpose of this invention is to provide novel details of construction for a funnel, a coniform filter, and a controlling valve for closing the spout of the funnel, whereby the funnel shell is adapted for use as a liquid measure, parts being so arranged that the contents of the funnel must pass through the filter before they are discharged through the funnel spout.

A further object is to provide a combined measure, a funnel and filter which are readily separated for cleaning the same and that may be quickly and reliably assembled for service, means for opening and closing the valve so that the contents of the funnel or part of said contents may be discharged as may be desired, and another object is to so construct the device that it may be readily manufactured with ordinary tinsmith tools, from inexpensive and durable material at a low cost.

The invention consists in the novel construction and combination of parts, as is hereinafter described and defined in the appended claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a vertical sectional view through the axis of the device, showing parts in normal positions for use as a liquid measure; Fig. 2 is an enlarged view of a portion of the filter, showing novel details of construction therefor; Fig. 3 is a sectional plan view substantially on the line 3—3 in Fig. 1; Fig. 4 is a longitudinal sectional view of the funnel spout detached, showing the construction of said spout when sheet metal is used as a material for its manufacture; and Fig. 5 is a transverse sectional view of the funnel spout substantially on the line 5—5 in Fig. 4.

The funnel shell 6 is preferably formed of sheet or plate metal, cut and stamped into form, having a coniform shape; and is of a capacity which will adapt it, when filled with liquid, to serve as a measure, that may be a gallon or any preferred division of such a

liquid measure. The normally upper edge of the funnel shell 6 is hemmed with an inlaid wire *a*, the hem being thus rendered cylindrical in cross section and as shown is turned inward, affording an offset shoulder *a'* thereat. At the converged lower end of the funnel shell, a circular opening of suitable diameter is afforded for reception of the spout 7 that may be cast into form from any preferred metal, as indicated in Fig. 1, or be formed of sheet metal as shown at 7^a in Figs. 4 and 5. In either case, the spout 7 or 7^a, is tapered properly from a point *b* to the lower end *d* of the spout body, the diameter of said body at the point *b* being slightly greater than that of the circular opening at the lower end of the funnel shell, so that the spout will fit liquid tight in the shell 6, if inserted and forced down to the point *b* thereon. Above the point *b*, the spout body extends of a proper length and is rendered cylindrical as shown at *b'*, having a diameter about equal with the portion at *b*; and it will be seen in Fig. 1 that when the spout is in position for service, the cylindrical body portion *b'* thereof will project into the lower portion of the funnel shell 6. The inner surface of the spout body 7 is flared upward from near the point *b*, a short distance, thus forming a coniform valve seat and above said seat the cylindrical extension *b'* has a true cylindrical bore.

Slightly above the point *b* a plurality of spaced apertures *c* for the free passage of the liquid are formed in the side wall of the spout, this being the case whether the spout is formed of cast or sheet metal, said apertures *c* being preferably of equal area and rectangular form. As shown in Fig. 1, the relative position of the apertures is such that they will be disposed just above the point *b* where the funnel shell has contact with the spout, and cut through the coniform valve-seat before mentioned. A plug-valve 8 is provided, that is designed to control the flow of liquid from the funnel 6 or seal the passages therefrom into the spout, said valve having the main portion of its body cylindrical, from which extends downwardly a coniform portion 8^a, fitted liquid-tight within the valve-seat, and when seated therein will obviously seal the discharge apertures *c*.

Upon the side wall of the funnel-shell 6 a bracket arm 9 is secured, that projects above the upper edge of said shell, and near the upper end of the bracket-arm an open slot *e*

is formed therein, which is parallel in its defining walls for a short distance inward, and at the inner end is enlarged so as to produce a curved wall that is lower than the entering slot, thus producing a shoulder at e' . A lever 10, preferably shaped as shown in Fig. 1, has a straight member thereon, a cross pin at g , that engages the slot e , and seats behind the shoulder e' , and an upwardly and outwardly curved handle 10^a , extended outward from the trunnions formed by the pin g . A link rod 10^b extends between the valve 8 and inner end of the lever 10, having its ends loosely connected with said parts respectively, as shown in Fig. 1.

Upon the extension of the funnel shell 6, below the bracket arm 9, a handle piece is secured, this piece being preferably formed of a strip of metal bent between its ends into substantially looped form, thus providing two handle members or limbs 11, 11^a that at their extremities are attached upon the wall of the funnel shell as indicated at h, h' in Fig. 1. The looped or bow portion 11^b of the handle piece is preferably shaped as shown in Fig. 1, being curved at its upper and lower end into segmental form, as is represented at i, i' , these curved integral portions merging into reversed curved portions i^2, i^3 respectively, that are joined to the outer ends of the limbs 11, 11^a .

It will be seen that the peculiar shape given to the handle piece affords a grip portion 11^b , and two hand and finger holds at i^4, i^5 , so that when grasped by the hand of the user of the device, a firm grip may be had, and a tendency to tip downward, due to weight of the device and its contents, will be counteracted. A plate spring 12, preferably bent as shown in Fig. 1, is seated and secured by its lower end upon the upper limb 11 and thence curves upward and outward so as to have contact at the upper end thereof upon the lower edge of the handle 10^a on the lever 10, and as is apparent in Fig. 1, the tension of the lever will co-act with the weight of the valve 8, to normally seat it liquid tight in the valve seat before mentioned.

It will be obvious that pressure on the outer end of the handle 10^a by the thumb of the operator when using the device, will lift the valve 8 and open the holes c for a free downward flow of liquid through the spout 7 or 7^a . The filter which is designed to co-act with the funnel hereinbefore described is in the form of an inverted truncated cone, and while perforated sheet metal may be employed for its construction, it is preferred to make the filter body of woven wire cloth of suitable mesh, this material being indicated in the drawings.

The filter body is cut from one piece of wire woven material, of a shape that when curved into form the material will take the form of an inverted cone 13, flattened on the

normally lower end. The upright meeting edges m of the shaped material are either butted together or may have a portion on one edge thereof lapped over the other edge, as indicated at m' in Fig. 2. The lower edge of the filter material is hemmed, having a wire ring n filling in the hem, and the inner diameter of said small end of the filter is such that it fits neatly over the upper end of the spout 7 or 7^a , the ring and hem serving to hold the lower portions of the side edges m , joined and secured together.

A hem is formed at the upper edge of the filter body and in said hem n' , a resilient wire ring o is embedded, the ends of the ring being separated, but one end portion of the spring ring is offset as at p in Fig. 2, thus disposing the end portions beyond the offset below and near to the other end of the ring, so as to work loosely in a perforated ear r that projects downward from the short end of the wire ring. An ear r' is secured on the other end portion of the ring o so as to depend therefrom, these ears r and r' affording means for contracting the diameter of the upper end of the filter body when the latter is being introduced within the funnel shell, by gripping the ears manually.

The height of the filter body 13 is so proportioned, that when the lower end thereof is slid down over the upper end b' of the spout 7 or 7^a , a contraction of the resilient ring o will adapt it and the hemmed upper edge of the filter body to fit closely beneath and in enforced contact with the shoulder a' on the hem at the upper edge of the funnel shell 6, the release of the spring wire ring o permitting an expansion of said ring and a corresponding increase in the diameter of the upper edge portion of the filter body.

In use, the filter being in position, receives the liquid that is to be measured and as the valve 8 is normally closed and the passages c sealed thereby, the liquid poured into the filter will pass therethrough and fill the annular space s , that intervenes between the filter body and funnel shell. The capacity of the funnel shell being known, a measure is had of the liquid contents thereof and upon applying pressure upon the handle 10^a so as to raise the plug valve 8, the entire contents of the funnel, or any portion thereof, may be discharged from the depending spout 7, into a receiving vessel if this is desired.

It will be apparent that the liquid occupying the filter 13 must pass through its perforate wall to enter the funnel shell and escape therefrom through the discharge holes or passages c , consequently the device as constructed serves the triple purpose of a measure, filter and funnel.

It is to be understood that if preferred the spout 7 or 7^a may be secured firmly upon the funnel-shell 6, and thus afford a complete funnel that may be used without the filter 13.

Having fully described my invention, I claim as new and desire to secure by Letters Patent:

1. The combination with a coniform funnel shell, and a detachable spout depending from said shell, of a perforate filter body having coniform shape, and fitting at its lower end upon the upper end of the spout which projects into the funnel.
2. The combination with a coniform funnel shell having a hemmed upper edge, and a detachable spout depending from said shell, of a perforate coniform filter body, fitting at its lower end on the upper end of the spout which projects into the funnel, and an expanding resilient ring secured on the upper edge of the filter body and having enforced engagement with the hemmed upper edge of the funnel shell.
3. The combination with a funnel shell, and a detachable spout depending therefrom, of a coniform filter body engaging the spout at the lower end of said filter body, and held detachably at its upper edge upon the upper edge of the funnel shell.
4. The combination with a funnel shell, a depending spout thereon having lateral holes in the upper portion of its side wall that are located at the bottom of the funnel shell, of a

valve adapted for closing the lateral holes, a handle on the funnel shell, a spring on said handle, a bracket arm on the handle and funnel shell, said arm having an open slot in its outer side edge, a handle lever detachably pivoted in said slot, and a link rod connecting the inner end of the handle lever with the valve.

5. The combination with a funnel shell open at the lower end, and having an inwardly turned tubular hem at the upper edge thereof, a detachable spout fitted liquid tight in the open lower end of the funnel shell and having a cylindrical wall at its upper end, said wall having lateral discharge holes therein, and means for temporarily sealing the discharge holes, of a coniform filter formed of reticulate material and fitted on the cylindrical wall at its lower end, and a spring ring at the upper edge of the filter body adapted for engagement with the funnel shell beneath the tubular hem thereon.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

PETER MACALLISTER MACKASKIE.

Witnesses:

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GEO. B. THATCHER.