July 4, 1933. A. YURKOVITCH 1,916,456

STRAINING DEVICE

Filed Jan. 11, 1932

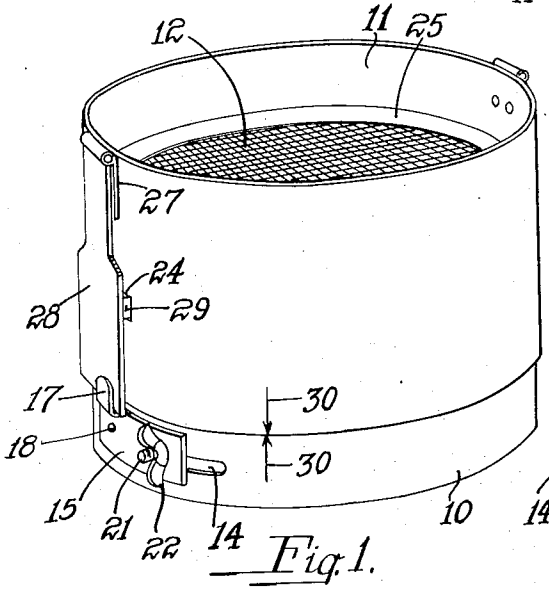


Fig. 1.

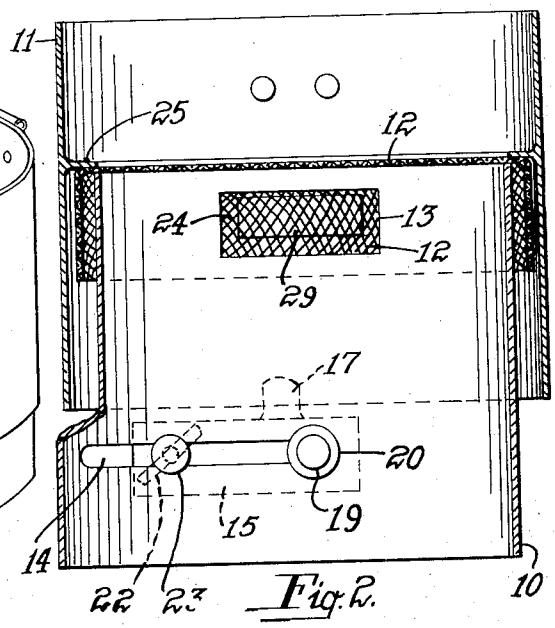


Fig. 2.

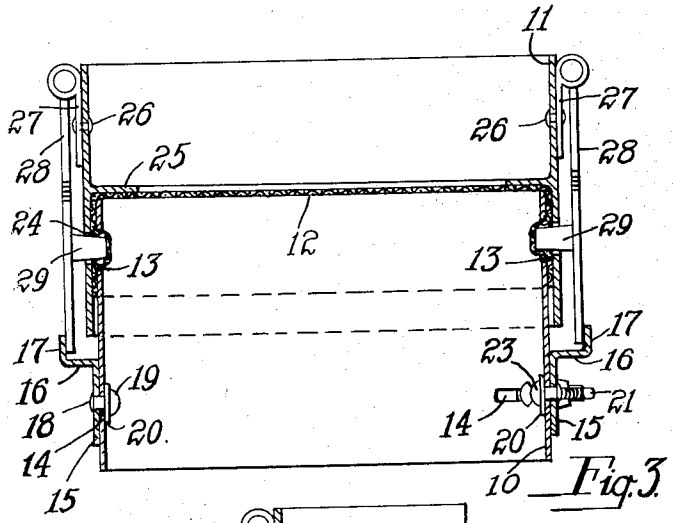


Fig. 3.

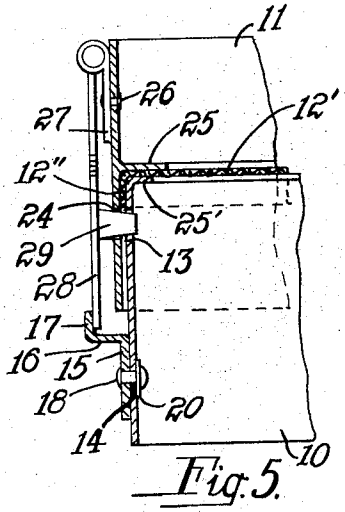


Fig. 5.

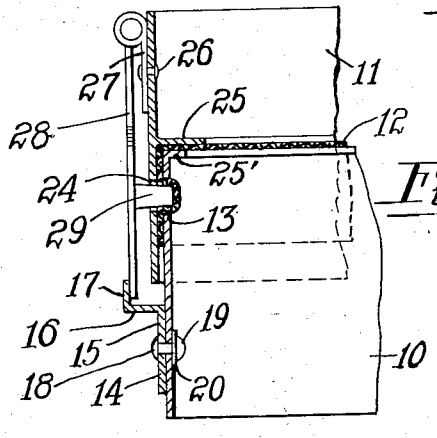


Fig. 4.

INVENTOR
Anton Yurkovitch
BY Green & McCallister
His ATTORNEYS

Patented July 4, 1933

1,916,456

UNITED STATES PATENT OFFICE

ANTON YURKOVITCH, OF PITTSBURGH, PENNSYLVANIA

STRAINING DEVICE

Application filed January 11, 1932. Serial No. 585,834.

This invention relates to a device for straining liquids of various types and is especially adapted for straining paints.

In handling paints, in particular, as is well known, oxidation processes invariably result to a greater or less extent upon exposure of the paints in their containers to the atmosphere either before or during use thereof. As a result the paints develop a more or less lumpy condition and these lumps vary considerably both in size and in hardness. Such oxidized portions of the paints which form these lumps or similar thickened or dried portions cannot readily be dispersed again and hence are a detriment throughout the further use of the paint. Again, if these could be conveniently removed the balance of the point could be restored to usefulness so that waste would be avoided. Insofar as I am aware there is no satisfactory straining device for use in connection with paints which is both simple and effective and which can readily be kept in perfect straining condition.

One of the objects of the present invention is the provision of a straining device for use in straining paints in particular which obviates known and hitherto accepted defects and disadvantages and which provides added advantages peculiar to its own construction.

Another object of the invention is the provision of a straining device particularly adapted for paints which consists of two telescoping sections with a removable straining element therein and which is provided with means for releasably locking all of the parts in secure position during use.

A further object of the invention is the provision of a straining device particularly adapted for paints which comprises two telescoping sections which are adapted to hold a straining element in place therein, the whole being provided with releasable locking means for maintaining the operative association of the various parts during use.

A still further object is the provision of a straining device particularly adapted for paints which is composed of non-combustible material so that it may be readily cleaned by applying thereto a combustible fluid and setting the same on fire to remove the strained portions.

Other and further objects and advantages will either be pointed out hereinafter or will be understood by those skilled in the art.

In the accompanying drawing wherein similar numerals designate corresponding parts throughout the several views:

Figure 1 is a perspective view of a preferred form of my straining device;

Fig. 2 is substantially a vertical section through Figure 1, but partly taken to one side of a diameter of said device;

Fig. 3 is a vertical section taken through the diametrically opposite releasable locking means of Figure 1;

Fig. 4 is a fragmentary vertical section similar to Fig. 3 but illustrating a modified construction; and

Fig. 5 is a view similar to Fig. 4 of a further modification of my device.

Referring now to the drawing in detail, it will be seen that the device is made up of three main parts, one of which is a lower cylindrical section 10, a second of which is an upper cylindrical section 11, which telescopes with said lower cylindrical section, and the third of which is a straining element 12 clamped between the two.

The lower cylindrical section 10 comprises a short section of ring having therein near the top edge thereof the diametrically opposite apertures 13. Near the bottom edge of said section 10 and laterally somewhat displaced from said apertures 13 are the diametrically opposite elongated slots 14. Adapted for sliding movement with respect to said elongated slots are the arcuate plate members 15 which conform to the curvature of the cylindrical section. Each plate is somewhat shorter than the length of the slots and extending from the upper edge of each plate is a clamping element which consists of a short horizontally outwardly extending projection 16 terminating in a vertical lip 17. At one end of each plate is one or more rivets 18, the other end of which is provided with an enlarged or upset portion or head 19 between which head and the inside of the cylindrical section may be a suit-

able washer member 20. At the other end of the plate a screw-threaded shank 21 projects through the slot and plate and is adapted to receive thereon in tightenable manner a wing nut 22, the other end of said screw-threaded shank being provided with an enlarged head 23 and with a washer 20, if desired.

The upper cylindrical section 11 of the straining device is somewhat larger in diameter than the lower cylindrical section 10 and in practice is just enough larger so that the two may telescope partially, as shown in the drawing. This upper cylindrical section 11 is provided with diametrically opposite apertures 24 approximately midway or slightly below the horizontal middle and these apertures are so proportioned with respect to the apertures 13 in the lower section 10 that the horizontal walls defining the upper edges of the apertures in the upper section align substantially with the horizontal walls defining the upper edges of the apertures in the lower section (see Fig. 2). Aside from this the apertures in the upper section do not further register with the apertures in the lower section but on the contrary the apertures in the upper section are shorter and are of less height, so that when the upper and lower sections are assembled, as will be hereinafter more fully explained, the respective apertures take the relative positions clearly shown in Fig. 2.

As will be observed from the drawing the upper cylindrical section 11 is provided with an inwardly extending annular flange 25 which may be, generally speaking, about midway or somewhat above the horizontal middle of the upper section. The function of this flange will be apparent hereinafter. Suitably riveted, welded or the like as at 26 to the walls of the upper section 11 are the hinge plates 27. These may be substantially conventional hinge plates and may or may not be curved to correspond to the curve of the cylindrical section. Hinged in known manner to said stationary hinge plates 27 are the pivotal hinge plates 28 which are suitably longer than the stationary hinge plates aforesaid as will be clear from the drawing. These latter hinge plates 28 may be suitably designed to give an attractive appearance and, as shown, they are further provided with the inward extensions or locking projections 29, which are so arranged that they project through the apertures 13 and 24 in the cylindrical sections 10 and 11, respectively.

The straining element 12 may be a suitable screening member as shown and is preferably of a circular form appreciably larger than the diameter of either of the cylindrical sections. In practice a number of these flat circular screening elements are provided and preferably they may be of different meshes so that the proper straining element may be chosen for a given use. This straining element is of considerable strength and is preferably a metallic screening, but at the same time, is bendable. Such an element has been shown in Figs. 1 to 4, inclusive, but in Fig. 5 I have shown a screening element of somewhat different type and one which is of preformed shape. This screen numbered 12′ has only a short right angled flange 12″ which does not reach as far as the apertures in the sections.

In assembling the straining device, the circular piece of screening 12 is laid over the lower cylindrical section 10 and slidable plates 15 are moved to the extreme right-hand position with respect to their slots. The upper cylindrical section 11 is now placed over said lower cylindrical section 10 in such a way that apertures 24 in upper section 11 will assume the position shown in Fig. 2 with respect to apertures 13 in the lower section 10 and for guiding purposes the guide marks 30 are provided on the sections, as is clearly shown in Fig. 1. Cylindrical section 11 is now forced down over the lower cylindrical section 10 with which it partially telescopes and this automatically bends down the extending portions of the straining element along the sides of section 10 and the sections are limited as to telescoping action when the flange 25 of the upper section abuts the upper edge of the lower section 10 and the straining element thereover. Thereupon pressure is placed manually upon the lower extremities of the pivotable hinge plates 28 so that projections 29 are forced inwardly into the apertures and bend a portion of the straining element around as shown. Then while holding said hinge plate as far in as it will go, slidable plates 15 are slid to the left so that the lip 17 of each plate rides over the lower edge of the hinge plates 28 holding them in their inward position. Wing nuts 22 are then tightened and the device is ready for use.

As shown in Fig. 4 the lower cylindrical section 10 may also be provided at its upper edge with a narrow inturned flange 25′ of less extent than flange 25 of section 11 and it will be clear that the straining element is securely clamped between these two flanges when used and the straining element is additionally locked by the projection 29 in the apertures 13 and 24.

In Fig. 5 the preformed screen is clamped solely between the two flanges 25 and 25′ and in this modification the other locking means do not contact the screen itself which is purposely made with a flange so short that it does not overlie the apertures 13 and 24.

It will thus be clear that I have provided a simple yet unbreakable and effective straining device which comprises two telescoping sections with a straining element held therein in operative position and with means for

locking the sections in position during use but enabling release thereof either to separate the sections merely or to separate them for the purpose of substituting a new straining element when the one in use becomes clogged, for example. By arranging the apertures 13 and 24 as shown, particularly in Fig. 2 I provide also an effective means for locking the screen immovably in position and for keeping it taut. This arrangement of apertures in connection with the tapered protection 29 on each hinge plate 28 provides an unusually effective locking arrangement.

While I have shown the sections 10 and 11 as circular this is for convenience mostly as the device is so dimensioned that it will fit over a paint can, for example. Obviously the device may be made in different sizes to fit over paint cans of different capacities. Furthermore, the device may be made non-round, that is, polygonal if desired and with any preferred number of sides. While the material is preferably all metal any or all of the parts may be made of fibrous materials which are non-combustible since, when it is desired to clean the device, a combustible cleaning fluid which is a solvent for the paint or the like is poured freely over the device which has been removed from the can associated therewith and the combustible cleaning fluid then ignited, thus burning off and effectively cleaning the whole device.

Finally, while the device has been particularly adapted for use in connection with straining paints it is to be understood that it may also be used for straining other materials. Among these are food products such as tomatoes, grapes, which may be crushed directly upon the screen and strained, cranberries, and other food products or the device may also be used for straining any fluids containing solids which are to be separated from the liquid parts thereof. In such cases the material of the device may be so chosen that it does not corrode in use or contaminate the food or other product strained therethrough.

What I claim as new and desire to secure by Letters Patent is:

1. A straining device comprising a lower section having opposite apertures and slots, an upper section telescoping with said lower section and having opposite slots, and a straining element across said sections, said sections being provided with locking means cooperating with said apertures and slots for releasably holding said sections and said straining element in operative association.

2. In combination, a lower section having opposite apertures and slots, plates slidable with respect to said slots, a clamping lip on each plate, an upper section telescoping with said lower section, said upper section having opposite apertures, alignable with the apertures in said lower section, and being provided with hinge plates, one of each set of which fits under a clamping lip and which has a member projecting through said slots a straining element tautly locked in said sections and means for tightening said plates in locking position.

3. A straining device comprising a lower section having opposite apertures and slots, an upper section telescoping with said lower section and having opposite slots, and a straining element across said sections, said sections being provided with locking means cooperating with said apertures and slots for releasably holding said sections and said straining element in operative association, said upper section having a medial annular flange bearing on said straining element.

4. A straining device comprising a lower section having opposite apertures and slots, an upper section telescoping with said lower section and having opposite slots, and a straining element across said sections, said sections being provided with locking means cooperating with said apertures and slots for releasably holding said sections and said straining element in operative association, said upper and lower sections having inwardly extending annular flanges between which fits said straining element.

5. A straining device comprising a lower section having opposite apertures and slots, an upper section telescoping with said lower section and having opposite slots, and a straining element across said sections, said sections being provided with locking means cooperating with said apertures and slots for releasably holding said sections and said straining element in operative association, said upper and lower sections having inwardly extending annular flanges between which fits said straining element, said straining element being preformed and comprising a disk with a short right-angled flange.

6. A straining device of the character disclosed, comprising upper and lower telescoping sections, a strainer element therebetween, said sections extending appreciably above and below said strainer element and cooperating means provided for each such section to releasably and rigidly lock said sections together and to tautly maintain said strainer element in the operative position aforesaid, said means being on the outside of said extensions and having portions projecting therethrough.

7. A straining device of the character disclosed, comprising upper and lower telescoping sections, a strainer element therebetween, said sections extending appreciably above and below said strainer element and cooperating means provided for each such section to releasably and rigidly lock said sections together and to tautly maintain said strainer element in the operative position aforesaid, said means including interengageable ele-

ments on the sections, certain of said elements having portions projecting into apertures in the sections.

8. A straining device of the character disclosed, comprising upper and lower telescoping sections and a strainer element tautly held therebetween, said upper section being provided with hinged locking means extending to said lower section, said lower section being provided with clamping-clip-including means for receiving and holding said hinged locking means in locking position.

9. A straining device of the character disclosed, comprising upper and lower telescoping sections and a strainer element tautly held therebetween, said upper section being provided with hinged locking means extending to said lower section, said lower section being provided with means for receiving and holding said hinged locking means in locking position, said hinged locking means being additionally provided with strainer locking means projecting inwardly therefrom into apertures in said sections adapted therefor.

10. A straining device of the character disclosed, comprising upper and lower telescoping sections and a strainer element tautly held therebetween, said upper section being provided with hinged locking means extending to said lower section, said lower section being provided with means for receiving and holding said hinged locking means in locking position, said hinged locking means being additionally provided with strainer locking means projecting inwardly therefrom into apertures in said sections adapted therefor, and said strainer element having portions overlying said apertures and forced thereinto by the said projecting strainer locking means.

In testimony whereof, I have hereunto subscribed my name this 9th day of January, 1932.

ANTON YURKOVITCH.