June 18, 1940. J. H. HERRERA 2,205,290

INFUSION STRAINER DEVICE

Filed Sept. 29, 1938

Fig. 1

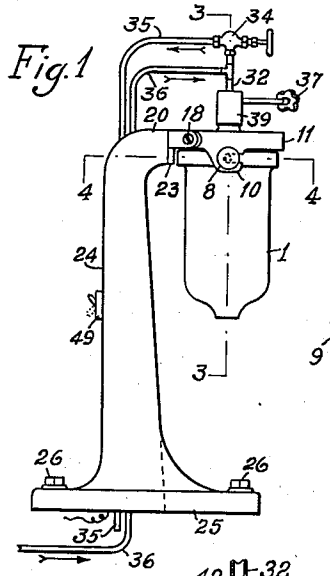


Fig. 2

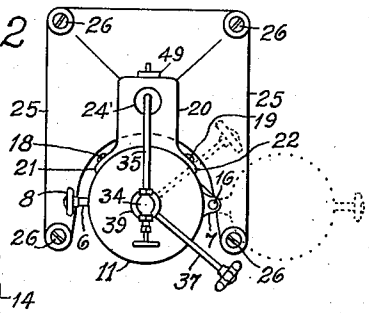


Fig. 7

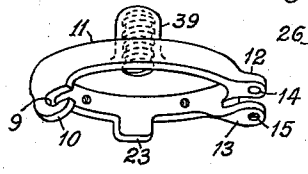


Fig. 6

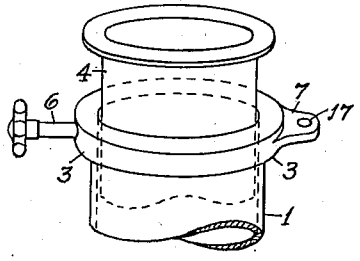


Fig. 3

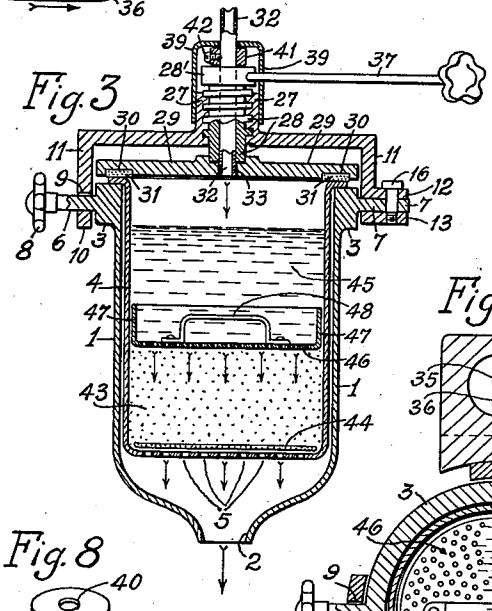


Fig. 5

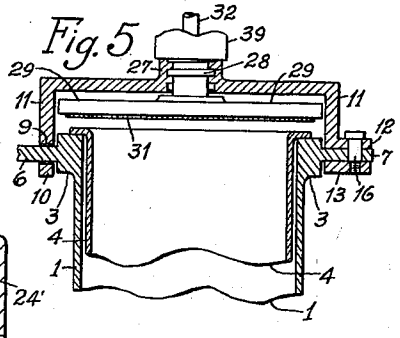


Fig. 4

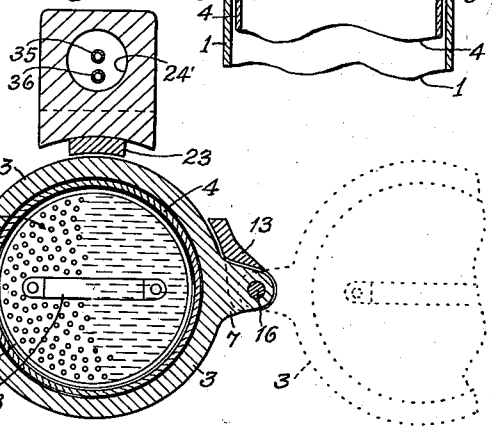
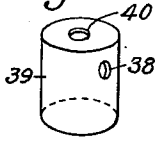


Fig. 8



INVENTOR

Juan Hernandez Herrera

BY B. Singer

ATTORNEY

Patented June 18, 1940 2,205,290

# UNITED STATES PATENT OFFICE

2,205,290

## INFUSION STRAINER DEVICE

Juan Hernández Herrerá, Habana, Cuba

Application September 29, 1938, Serial No. 232,457
In Cuba September 13, 1938

1 Claim. (Cl. 53—3)

This invention relates to strainer-devices for use in preparing leaf, grain, or powder vegetable infusions, and it has for its object to provide an independent strainer-device being supplied with a self-hot water charge and operated by compressed-air pressure, which strainer is very simple, portable, and inexpensive, rapid and efficient in operation.

The invention is described with reference to the figures of the accompanying drawing, of which:

Fig. 1 is a side elevational outer view of the the strainer-device and the support therefor.

Fig. 2 is a top plan view of same.

Fig. 3 is an enlarged sectional view on line 3—3 of Fig. 1, showing the strainer alone.

Fig. 4 is an enlarged horizontal sectional view on line 4—4 of Fig. 1.

Fig. 5 is a partial vertical sectional view similar to that of Fig. 3, showing in raised position the sealing cap for the proper strainer-vessel.

Fig. 6 is a perspective detailed view showing the strainer-vessel in its raised position within the cover enclosing same.

Fig. 7 is a perspective detailed view showing the strainer-holder.

And Fig. 8 is a perspective detailed view showing the cylindrical cap mounted on the strainer-holder and covering the rotatable screw for operating the sealing cap for the proper strainer-vessel.

The strainer-device of this invention is composed of an outer metal cover 1 in the shape of an elongated cup having a discharge orifice 2 at its pointed bottom, the top portion of said cover terminating in a flange ring 3 adapted to receive thereon the horizontal edge of the proper strainer-vessel 4 which is also made of metal and has perforations 5 at its plane bottom. The cover 1, and the strainer-vessel 4 as well, may be of cylindrical shape or square or rectangular cross-section and are concentric and fit one into each other in a manner to facilitate the removal of strainer-vessel 4 from the cover 1.

The cover 1 has diametrally opposed an arm 6 and a horizontal lug 7, of which the arm 6 is adapted to serve as a handle ended in a knob 8 to be received in the inner recess 9 of a hook-shaped lug 10 projecting downward from the lower edge of the cylindrical strainer-holder 11 which is closed at the top and open below, the same carrying at the end diametrally opposed to the lug 10 a double-lug forming a fork member having horizontal branches 12 and 13 projecting outward and respectively having holes 14 and 15 in vertical alignment and adapted to receive therethrough a vertical screw 16 serving to retain the lug 7 of cover 1 inserted between lugs 12 and 13, said screw 16 passing through a hole 17 formed in lug 7 of cover 1. From this construction it will be understood that by means of the knob 8 it will be possible to cause the cover 1 to rotate about the pivot screw 16 by removing the arm 6 from its insertion or rest upon the hook-shaped lug 10, as indicated by dotted lines in Fig. 4 of the drawing.

The strainer-holder 11 is fixed by screws 18 and 19 to the horizontal top head 20 terminated in curved side wings 21 and 22 forming an arched fitting surface to receive a section of the periphery of strainer-holder 11, said strainer-holder 11 carrying intermediate the lugs 10 and 13 a downwardly arched lug 23 serving as an abutment against the head 20, the latter forming part of a support 24 with a base 25 to be fixed on a suitable table or platform (not shown) by means of screws 26, the support 24 having an inner cylindrical hollow 24' for the purpose explained hereinafter.

The strainer-holder 11 carries on its top portion an innerly-threaded central sleeve 27 adapted to rotatably support through the top portion of the strainer-holder 11 a vertical rotatable screw 28 having fixed at its lower end within the strainer-holder 11 a covering horizontal disc 29 provided at its lower face with an annular recess 30 into which is fitted a packing ring 31 to tightly close the strainer-vessel 4 when the disc 29 is descended on the top horizontal edge of the vessel 4 resting on the flange ring 3 of shell 1. A tube 32 passes across the disc 29 and the sleeve 27 and ends in the lower face of disc 29 through an aperture 33 therein, said tube leading upward and ending in a valve 34 to which is connected an air outlet-tube 35 which is bent downward to pass through the inner hollow 24' of support 24 and opening into the atmosphere. The tube 35 has beneath the valve 34 a joint for connection with another tube 36 for injection of compressed air supplied by a compressed-air compressor (not shown), the compressed-air tube 36 passing upward through hollow 24' of support 24. The rotatable screw 28 ends at its top end in a cylindrical head 28' provided with a long horizontal hand-rod 37 passing through a hole 38 formed in the side wall of a cylindrical cap 39 closed above and open below, said cap 39 covering the rotatable screw 28 by fitting outside the sleeve 27 and having a central hole 40 at the top portion

thereof through which passes the tube 32 (Fig. 8), the top portion of cap 39 resting on a collar 41 of compressible material, as rubber, which is fixed by a pressure screw 42 on tube 32 and interposed between said top portion of cap 39 and the cylindrical head 28' of rotatable screw 28.

The capacity of the proper strainer-vessel 4 is such that this can receive therein a lower supply of vegetable material 43, as roasted and ground coffee, on a filtering cloth 44 disposed on the perforated bottom of vessel 4, and also an upper supply 45 of water heated at a suitable temperature below 100° C. outside the strainer. The supply of hot water is not received directly on the vegetable material 43 but through interposition of a perforated plate 46 adapted to rest on the lower supply 43 and provided with an outstanding annular flange 47 serving as a guide for same upon it being introduced or removed from strainer-vessel 4 and a central handle 48 on its upper face for hand operation.

An electric switch 49 is suitably mounted on the support 24 to open and close the electric circuit of an electric motor (not shown) for operating a compressed-air compressor which is not also shown as it does not form an essential part of this invention, compressed air being thereby supplied to the strainer 4 through tube 36.

The operation of this strainer-device is as follows: Once the strainer-vessel 4 charged with both vegetable material and hot water in the manner above explained, the cap 29 is tightly pressed by rotating the rotatable screw 28 about a quarter of a turn by means of the hand 37; then, the valve 34 is opened and the switch 48 is actuated to supply compressed air into the vessel 4 so that hot water 45 may saturate the vegetable mass 43 completely, and the air within the vessel 4 may issue outward through outlet-tube 35. After a while the valve 34 is completely closed and compressed air is allowed to enter at full pressure into the vessel 4 and force the hot water 45 through vegetable mass 43. The infusion obtained will issue through opening 2 of cover 1 and may be collected in a suitable container.

Once the infusion obtained and the vegetable material 43 entirely exhausted, the strainer is discharged, for which purpose the cap 29 will first be raised by rotating the hand 37 in a direction contrary to the one in which it was previously rotated, and by operating the hand 8 the arm 6 will be dismounted from the hook-shaped lug 10 and the cover 1 rotated on the vertical pivot 16 to the position indicated by dotted line in Fig. 4 of the drawing, whereupon the vessel 4 may be raised and the vegetable charge 43 contained therein renewed, whereafter the cover 1 and vessel 4 may be replaced in the retaining position shown in Figure 1 for obtaining a further infusion as above explained.

What I claim is:

A strainer-device for preparing infusions, comprising a proper strainer-vessel having a capacity sufficient to contain a charge of vegetable material on the lower portion thereof and a charge of hot water on the top portion thereof, both charges being separated by a perforated disc, a cover surrounding and holding the strainer-vessel interiorly thereof and having a discharge aperture at its pointed bottom, a strainer-holder on which the cover is so mounted as to move pivotally about a vertical pivot at one of the ends of a diameter and a detachable fastening at the other end of the same diameter, a screw rotatably mounted on the strainer-holder, a tight-sealing cap for the strainer-vessel and which is secured to said rotatably mounted screw, a handle joined to the rotatable screw to operate it, a support on which the strainer-holder is fixed in depending position, a tube mounted across the rotatable screw and the tight-sealing cap, a compressed-air feed-tube connected to the latter tube outside the rotatable screw for injecting compressed air into the strainer-vessel and force the hot water therein contained through the lower vegetable charge thereby effecting the infusion by pressure, and an air outlet-tube which is provided with a valve and connected to the tube mentioned in the first place above the connection of the latter with the compressed-air feed-tube.

JUAN HERNÁNDEZ HERRERÁ.