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F. MERCER.

SPRAYER.

APPLICATION FILED JUNE 13, 1904.

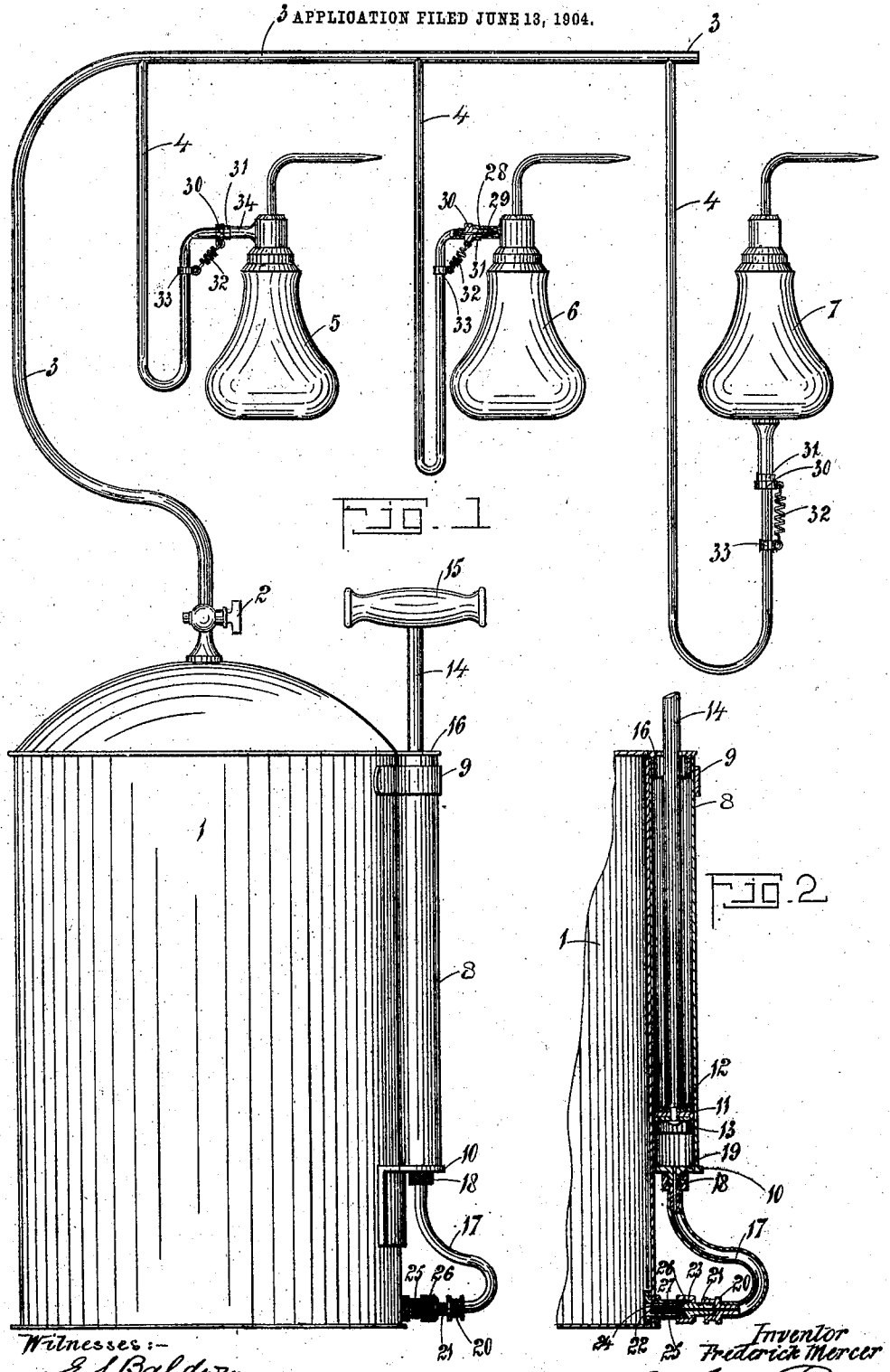

FIG. 1

FIG. 2

Witnesses:-
E. S. Baldwin
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Inventor
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UNITED STATES PATENT OFFICE.

FREDERICK MERCER, OF MARTON, NEW ZEALAND.

SPRAYER.

No. 815,192. Specification of Letters Patent. Patented March 13, 1906.

Application filed June 13, 1904. Serial No. 212,341.

To all whom it may concern:

Be it known that I, FREDERICK MERCER, a subject of His Majesty the King of Great Britain and Ireland, residing at Marton, Rangitikei, in the Colony of New Zealand, have invented a new and useful Improved Sprayer, of which the following is a specification.

The object of the invention is to provide apparatus for spraying liquids and powders and the like by means of a central reservoir of compressed air.

The drawings illustrate the invention.

Figure 1 is a side elevation of the apparatus, and Fig. 2 a sectional elevation of an air-compressor pump.

Describing the invention by the aid of the drawings, 1 is a reservoir for compressed air; 2, a stop-cock; 3, a main pipe leading from the reservoir.

4 represents branch pipes communicating with the main pipe 3.

5 and 6 are sprayers or atomizers for diffusing liquids, and 7 a sprayer for spraying powders. These sprayers are well-known articles of commerce.

8 is an air-pump attached to the reservoir 1 by brackets 9 and 10. The pump-cylinder is fitted with a bucket 11, consisting of a cupped leather washer and metal washers 12 and 13. The bucket is mounted upon a rod 14, provided with an operating-handle 15. The cylinder has a screw-cap 16, through which the rod 14 passes. Communication is established between the pump and the reservoir by a flexible tube 17, which has a socket 18 screwed to the pump-nipple 19. The other end of the tube has another socket 20, screwed to a non-return valve comprising a nipple 21, which has a hollow stem 22 and collar 23, covered with an india-rubber sheath 24. The stem passes into a socket 25 and is secured therein by a screw-cap 26, which also grips the rubber sheath between the collar 23 and the top of the socket to make an air-tight joint. Air passes from the pump through a hole 27 in the hollow stem, lifts the rubber sheath, and passes into the reservoir.

In Fig. 1 means are shown for starting and stopping the operation of spraying. The tube 4 is provided at its end with a nipple 28, which has a hole 29 through its center and a shoulder 30. The tube 4 fits the nipple and against one face of the shoulder 30, and a rubber washer 31 fits the other end of the nipple and against the other face of the shoulder 30. A spiral spring 32 is attached at one end to the nipple and at the other end to a band 33, passed around the tube. The spring is in tension and normally kinks the tube 4 over the end of the nipple 28, and thus stops the flow of compressed air.

The apparatus is operated by working the pump, during the upstroke of which air passes between the washer 11 and the cylinder; but on the downstroke the washer expands, the air is compressed below the plunger and passes into the reservoir, wherein it is confined by the non-return valve. By opening the cock 2 compressed air escapes from the reservoir to the main pipe 3 and the branch pipes 4. Either of the atomizers 6 or the sprayer 7 may be put into operation after being charged with liquid or powder, respectively, by inserting the nipple 28 into the neck 34 of the bottle, a tight joint being made by pressing the end of the said neck against the washer 31. The operator then straightens out the tube 4 by extending the spring 32, as shown in connection with the sprayer 7.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

Apparatus for the purpose indicated comprising a reservoir for containing compressed air, an air-compressor pump attached to the reservoir by brackets, a non-return valve upon the reservoir, a flexible pipe connecting the pump and the reservoir, a stop-cock on the reservoir a main air-pipe connected to the cock, branch pipes upon the main air-pipe, nipples on the branch pipes, spiral springs attached at one end to the nipples at the other end to bands around the pipes, a rubber washer upon the nipples and atomizers having necks to receive the nipples as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

F. MERCER.

Witnesses:
E. S. BALDWIN,
E. P. O'DONNELL.