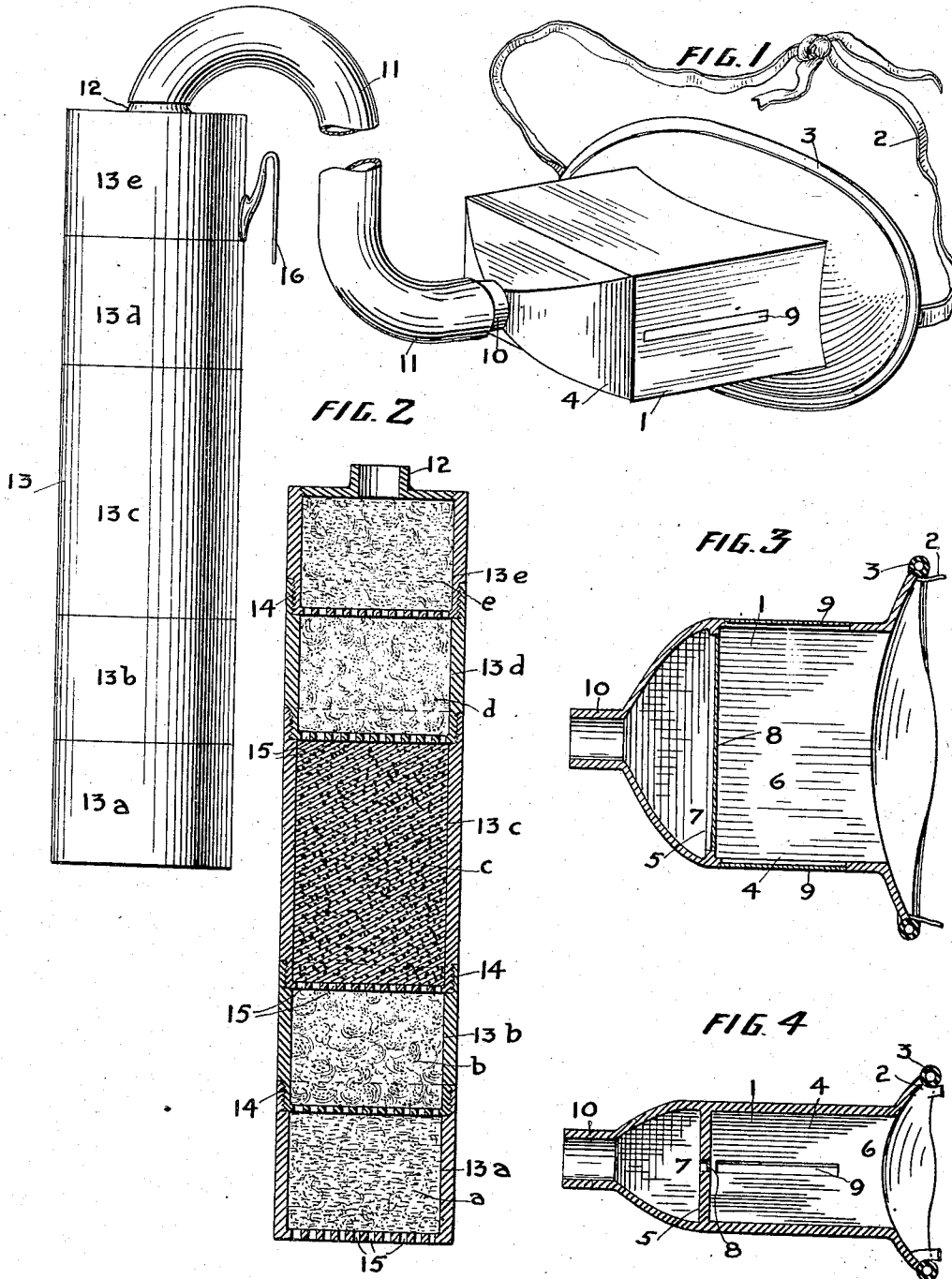


S. DANIELEWICZ.
FILTRATIVE INHALER.
APPLICATION FILED JAN. 4, 1909.

923,776.

Patented June 1, 1909.



WITNESSES:

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SAMUEL DANIELEWICZ, OF SAN FRANCISCO, CALIFORNIA.

FILTRATIVE INHALER.

No. 923,776.

Specification of Letters Patent.

Patented June 1, 1909.

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To all whom it may concern:

Be it known that I, SAMUEL DANIELEWICZ, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented new and useful Improvements in Filtrative Inhalers, of which the following is a specification.

The object of the present invention is to provide an apparatus for protecting the lungs and the bronchial passages from the injurious effects of impurities in the air, especially from smoke, or from dust or powder produced by emery wheels, or in jute or other mills.

In the accompanying drawing, Figure 1 is a broken perspective view of the invention; Fig. 2 is a sectional view of the air purifier; Fig. 3 is a horizontal section of the mouth piece; Fig. 4 is a vertical section thereof.

Referring to the drawing, 1 indicates a mouth piece adapted to be secured by any suitable means, as by bands 2, around the mouth of the user. Said mouth piece is conformed to fit the face of the wearer around the mouth, and around the edge of said mouth piece is secured a rubber tube 3, which, fitting closely against the face, prevents the passage of air to the mouth between the edge of the mouth piece and the face. Extending from said mouth piece is a casing 4, here shown as rectangular, although it may be of any suitable form. Said casing is divided by a transverse partition 5 into a breathing chamber 6, and an outer air reservoir 7, containing only air. In said partition 5 is an inwardly opening valve 8, which permits of air being drawn in from said reservoir 7 into said breathing chamber but prevents the passage of air in the opposite direction, and in the sides of said breathing chamber are valves 9 which permit of air being expelled from the breathing chamber but prevent the entrance therethrough into said breathing chamber. These valves are flap valves similar to those used in accordions.

The air reservoir converges to the front and terminates in a cylindrical neck 10, which is inserted on the end of a rubber tube 11, the other end of which is inserted on to

a neck 12, at the top of a purifier 13. Said purifier 13 consists of a number of cylindrical boxes or compartments 13^a, 13^b, 13^c, 13^d, 13^e, screwed together as shown at 14. Each of these compartments has formed in the bottom perforations 15 permitting the air to pass therethrough. The lowest compartment 13^a is filled, as shown at *a*, with raw cotton saturated with glycerin. The next compartment 13^b, is filled, as shown at *b*, with raw cotton in its natural condition. The next compartment 13^c is filled, as shown at *c*, with pulverized charcoal. The next compartment 14^d is filled, like the compartment 13^b with raw cotton *d* in its natural condition. The next compartment 13^e is filled with cotton *e* saturated with glycerin. Upon the uppermost compartment 13^e is secured a hook 16 by which the device can be secured to the clothing of the wearer. At each inhalation, a considerable part of the air contained in the air reservoir is immediately drawn into the breathing chamber through the valve 8 and thence is inhaled, and, when exhaled passes out from the breathing chamber through the valves 9. The diminution of pressure thus occasioned in the air reservoir produces a suction causing the air to pass almost continuously through the successive compartments of the purifier into the air reservoir.

The device is of great value for many trades, which, at present, are very injurious to health, as in emery grinding, jute mills, and many others, where the air contains large quantities of fine powder. It is also of value for firemen when it is necessary to enter buildings filled with smoke. It should be stated that, for complete protection of the lungs, a nose protector is fitted over the nose of the wearer, but, as this forms no part of the present invention, it is not illustrated herein.

I claim:—

An apparatus of the character described, comprising a mouth piece, means for securing the same to the head of the wearer, a casing on said mouth piece forming an air chamber, inlet and outlet valves for said casing, an air purifier, comprising a series of compart-

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ments removably secured together, each
formed with perforations to permit the air
to pass therethrough and filtering means in
said compartments, a flexible conduit from
5 said air purifier, and a connection between
said conduit and the air chamber through
the inlet valve, substantially as described.

In testimony whereof I have hereunto set
my hand in the presence of two subscribing
witnesses.

SAMUEL DANIELEWICZ.

Witnesses.

FRANCIS M. WRIGHT,
D. B. RICHARDS.