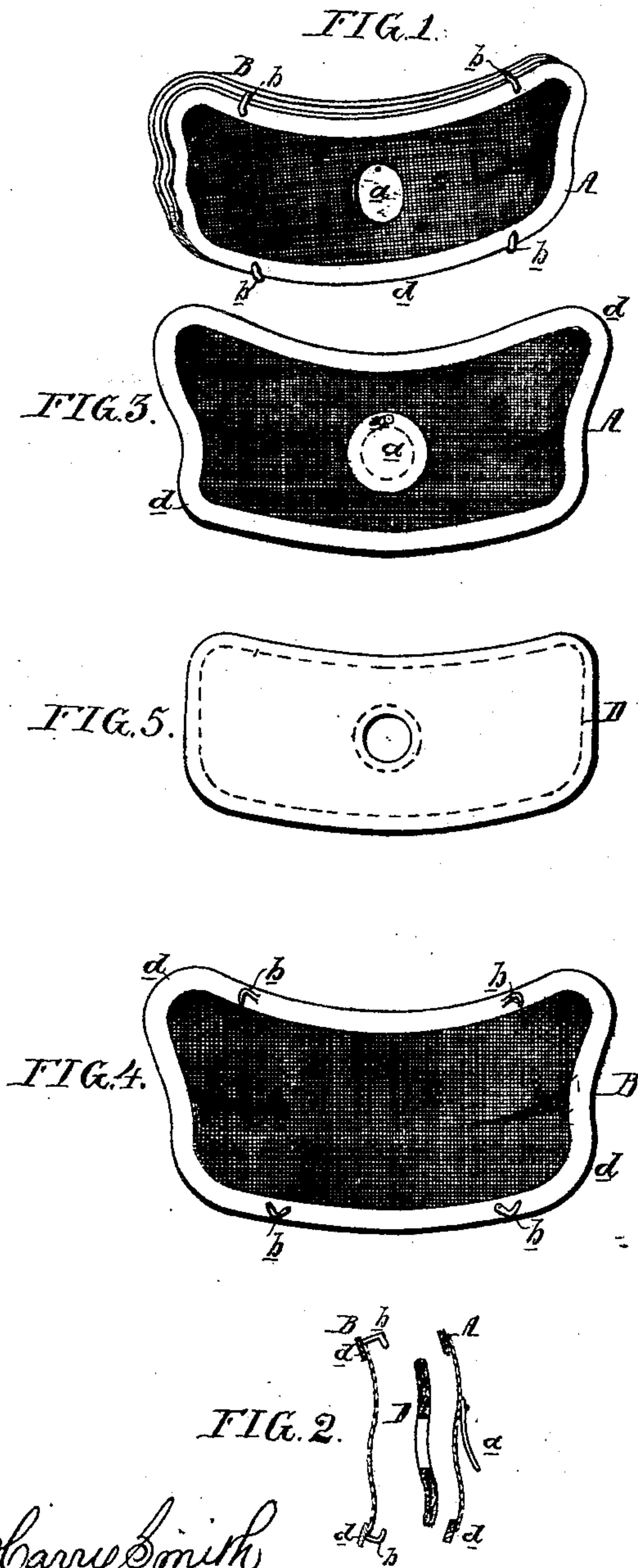


**B. W. JAMES.**  
**Respirators.**

No. 145,874.

Patented Dec. 23, 1873.



Witnesses, *Harry Smith*  
*Thomas McHarris*

*Bushrod W. James, M.D.*  
*by his Atty.*  
*Hewson and Son*

# UNITED STATES PATENT OFFICE.

BUSHROD W. JAMES, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN RESPIRATORS.

Specification forming part of Letters Patent No. **145,874**, dated December 23, 1873; application filed March 8, 1873.

*To all whom it may concern:*

Be it known that I, BUSHROD W. JAMES, M. D., of the city and county of Philadelphia, State of Pennsylvania, have invented an Improved Respirator, of which the following is a specification:

The object of my invention is to provide a more convenient respirator than those heretofore used; and I accomplish this object, first, by constructing the said respirator of two plates or screens, A and B, of wire-gauze, (see Fig. 2,) connected together, and confining between them a filling, D, of fiber or fabric, which will take up the noxious particles from the inhaled air and prevent them from passing into the lungs, and also by providing the respirator with a self-acting valve, *a*, which will remain closed when air is inhaled, but which will open and permit the free outward passage of all exhalations.

The plates A and B are, in the present instance, secured together and clamped upon the filling D by swiveled hooks *b*, attached to the rear plate B, and overlapping the front plate A; but other equivalent fastenings may be substituted for these hooks. The required degree of rigidity is imparted to the plates A and B by providing each of them with an edging or frame, *d*, of silver or other metal not liable to corrode, the wire-gauze portion *e* being soldered or otherwise secured to these frames. (See detached views, Figs. 3 and 4.)

The valve *a* consists, in the present instance, of a simple disk of rubber connected to the plate at one point, *x*, and covering an opening in the said plate and in the filling D, (see

Figs. 3 and 5,) the latter consisting of any suitable open fabric or fiber which will take up the noxious particles from the air which passes through it before entering the mouth and lungs.

The respirator is simply placed against the teeth and gums, to the shape of which it is adapted, and is retained in place by the pressure of the lips, so that it can be readily removed and replaced, and the filling changed after it has become charged with noxious particles. In some instances, the respirator may be so constructed as to be adapted to the interior of the mouth, in which case it would be necessary to retain it in position by means of a suction-plate, similar to those used for artificial teeth.

I claim as my invention—

1. A respirator, consisting of two detachable perforated plates, A B, and intervening strainer D, the whole being constructed as described, so as to be retained between the lips and the teeth.

2. A respirator, constructed as described, so as to be retained between the teeth and the lips, and provided with a strainer, D, and with a valve opening outward and covering an opening in the strainer, as set forth.

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

BUSHROD W. JAMES, M. D.

Witnesses:

WM. A. STEEL,  
JOHN K. RUPERTUS.