(No Model.) 2 Sheets—Sheet 1.

L. CHAPMAN.

INSPIRATOR.

No. 428,592. Patented May 27, 1890.

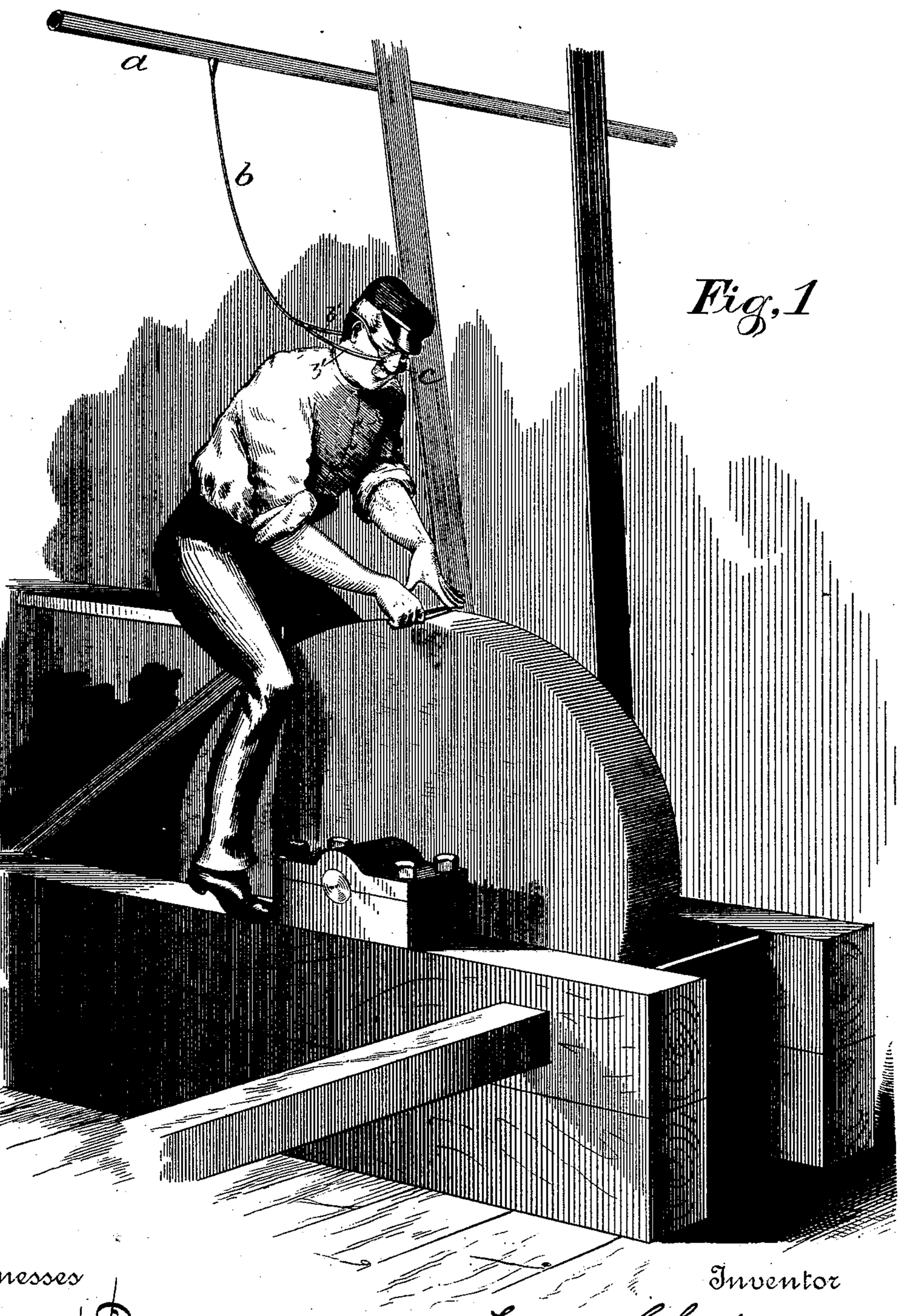

Fig. 1

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 2

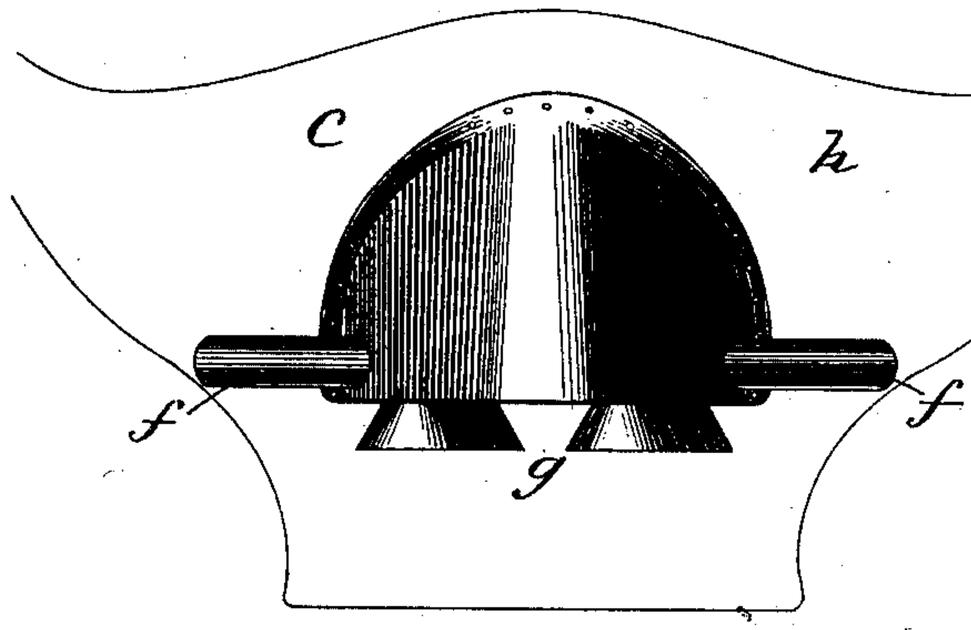


Fig. 3

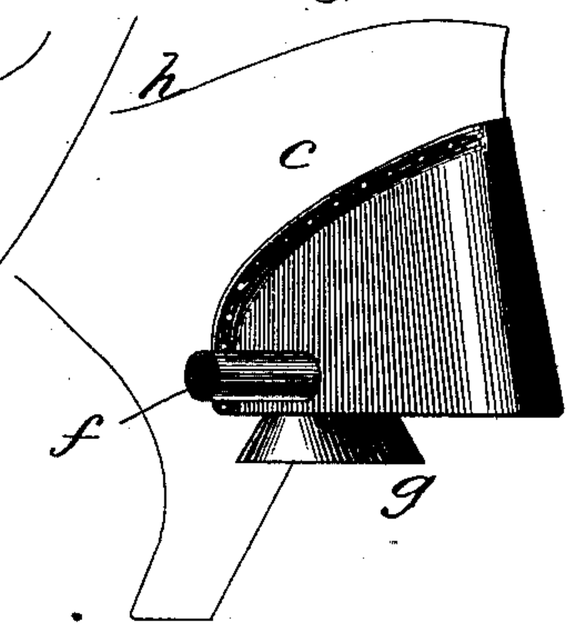


Fig. 4

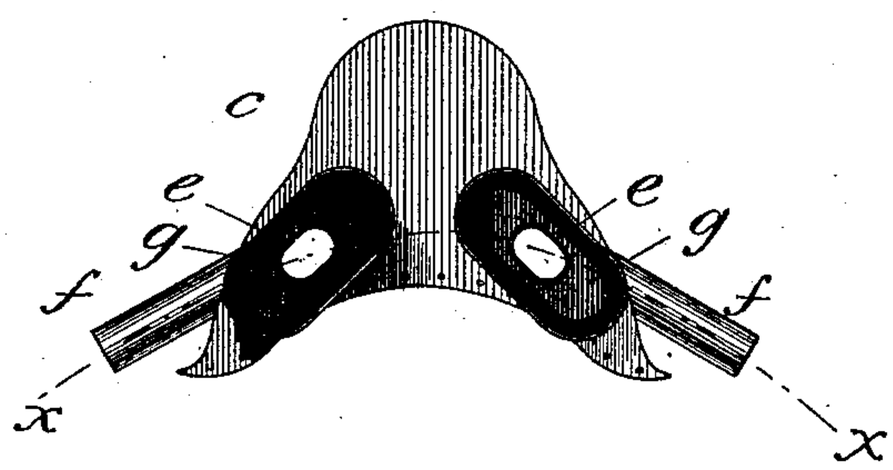
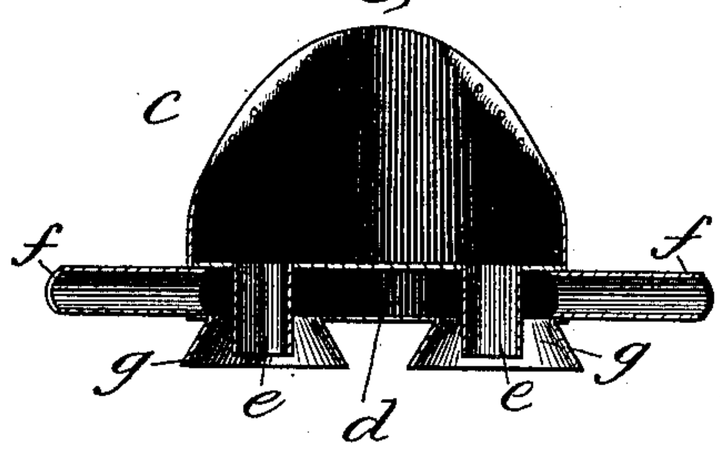


Fig. 5



Witnesses

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UNITED STATES PATENT OFFICE.

LUKE CHAPMAN, OF COLLINSVILLE, CONNECTICUT.

INSPIRATOR.

SPECIFICATION forming part of Letters Patent No. 428,592, dated May 27, 1890.

Application filed May 23, 1887. Serial No. 239,045. (No model.)

To all whom it may concern:

Be it known that I, LUKE CHAPMAN, of Collinsville, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Inspirators, of which the following is a full, clear, and exact description, whereby any one skilled in the art can make and use the same.

The object of my invention is to provide a device adapted to be worn on the face of a person in a position to prevent the inhalation of dust or of obnoxious or injurious odors, such as are encountered by grinders, operatives in silk-mills, and in other places where persons are pursuing some of the industrial arts.

It has been customary prior to my within-described invention to provide the inspirator or guard, so that while covering the nose and mouth, or either, of the wearer, it was so made as to exclude dust by a process of filtering the air by drawing it through a sponge or like strainer that was kept moist, or in some similar manner adapted to catch and hold particles of dust. All such prior devices are, however, open to the objection of becoming foul, retaining odors, and in a short time becoming inoperative through the clogging up of the sieve or valves. My invention differs, broadly, from the prior devices of this class, in that instead of filtering the air it repels all particles of dust, as well as germs or atoms of odorous matter, and provides to the wearer of the inspirator a stream of fresh air drawn from any suitable unpolluted source.

My invention consists in an inspirator adapted to be applied to the face of a person, and having a chamber with inlet tubes or pipes and vents, through which a current of air is driven from any suitable source of power, and one or more tubes extending through the chamber and into the outlet-tubes in such position that an indraft through the said tubes in breathing draws upon the current of air supplied to the guard.

It further consists in details of the several parts of the device and the combination of these parts, as more particularly hereinafter described, and pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective view of a grinder at work over a stone and provided with one form of my improved inspirator. Fig. 2 is a detail front view of the inspirator detached from the supply-tubes. Fig. 3 is a detail side view of the inspirator. Fig. 4 is a detail bottom view of the inspirator. Fig. 5 is a detail view in section on the plane $x\,x$ through the inspirator and the inlet and the breathing tubes.

In the accompanying drawings my invention is illustrated as in use by a grinder, whose trade is of such an objectionable and dangerous nature, owing to the particles of stone and metal thrown off, but principally of the former, that the duration of life is greatly limited, although my inspirator is equally adapted for use in other occupations and trades that are dangerous for like reasons.

The letter *a* denotes a main supply-pipe, through which air is driven, as by means of a blower, from any suitable source; *b*, a branch pipe leading from such main pipe and arranged in such position and being of such length that the inspirator *c*, attached to the lower end of the branch pipe, will be in convenient position to enable the operative to move freely when at work. The inspirator *c* is composed, preferably, of a metallic shell of proper shape to fit the nose of an operative, with a chamber *d* formed in the lower part or at the sides of the inspirator, and extending sufficiently beneath the bottom to enable the breathing-tubes *e* to pass from the nostrils through the chamber.

Inlet-tubes *f* are located in proper position to conduct to the chamber *d* the current of air that is driven through the air-pipes *a* and *b* and the forked parts *b'* of the branch, and from the chamber it passes in a strong current through the vents *g*. These vents are preferably flaring, as shown in the drawings, so that the current of air is of considerable area as it emerges, and this current is of sufficient force to drive away from the face of the wearer all dust, and, in fact, to prevent the entrance of any air from the room to the breathing-tubes *e* as the operative inspires. In breathing, the breath of the operative passes freely through the breathing-tubes *e*, and fresh air is drawn from the current that passes through the inlets *f* and the chamber *d*.

A careful trial of this inspirator has proved that the wearer is unable to detect even as

strong odors as that of oil of peppermint uncovered and held near the person while the current of air was supplied, as in the manner described.

The main peculiarity of my within-described invention lies in the fact that the current of air that is supplied to the wearer operates also as an agent for driving away from him any deleterious or offensive particles that may be in the air surrounding him and in which he is working.

I do not limit myself to the particular construction of the device as within illustrated, as it is evident that the arrangement of the parts may be changed without departing from my invention so long as the features of the dust-repeller instead of a strainer remain in the completed device. This inspirator *c* is usually extended by a flexible shield *h*, that is attached thereto, and this shield has preferably straps, by means of which the whole device may be secured to the head of the wearer, as illustrated in Fig. 1 of the drawings.

I claim as my invention—

1. In combination with an air-supply pipe, an inspirator having an air-chamber, air-inlet tubes opening to said chamber and to which the air-supply tube is adapted to be attached, air-vents from said chamber, and the breathing-tubes projecting through the upper wall of the said air-chamber into the space through which air is driven, all substantially as described.

2. In combination with a main air-supply pipe, a flexible branch pipe leading therefrom, an inspirator connected to said branch pipe, and the said inspirator having an air-chamber with inlet-tubes from the branch pipe, and the vent-tubes leading from the chamber and the breathing-tubes extending through a wall of the chamber and opening into the vent-tubes through which the air flows outwardly from the inspirator, all substantially as described.

3. The improved inspirator consisting of a structure having an air-chamber *d*, with lateral inlet-tubes *f*, and tubular vents *g* and the breathing-tubes *e*, that extend through one wall of the chamber and terminate within the vent-tubes, all substantially as described.

LUKE CHAPMAN.

Witnesses:
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A. B. JENKINS.