

Improvements in respirators / [Julius Wolff].

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PROVISIONAL SPECIFICATION.

Improvements in Respirators.

I, JULIUS WOLFF, of Gross-Gerau, in the Empire of Germany, Factory-Proprietor, do hereby declare the nature of this invention to be as follows:—

- The apparatus forming the subject of this invention serves, firstly, for supplying to grinders, textile operators or other persons working in rooms filled with dust, the requisite amount of air for breathing, in a dust-free condition, without such persons being impeded in their movements and, secondly, for efficiently protecting persons, using this appliance, while moving in the open air, for example cyclists, railway guards and other persons, against the injurious effects of strong head winds and the like.
- 10 The apparatus substantially consists of a hollow body made in T shape of sheet metal, celluloid or other appropriate material. A branch or projection on the apparatus may be either bipartite (bifurcated) or in one piece. In the former case the branch is inserted into the nose and in the latter case into the mouth. In connection with the apparatus a nose pinching or compressing device is also
- 15 used. Finally, the apparatus may be so constructed as to be applicable for both methods of use. The tubular transverse piece to which the branch is connected is attached at each end to a flexible hose, the walls of which serve as an air filter; a valve is provided in or upon the hollow T shaped body and opens outwards. The apparatus is preferably fixed to the face of the wearer by means of
- 20 two elastic loops or the like, which are placed around the ears, whilst the hose is placed around the neck and shoulders.

- The action of the apparatus is such, that during the periods of inhalation the valve closes automatically, while the air penetrates the walls of the hose, which acts as a filter, and passing to the interior is thence drawn through the nose or
- 25 mouth of the wearer into the lungs, the dust and other impurities contained in the outer air being deposited upon the exterior wall of the hose, whence they may be easily removed, by periodically shaking or knocking the apparatus, since the outer wall remains dry.

- When used by persons travelling at a high speed, the injurious pressure, due
- 30 to a strong head wind exerted under ordinary conditions upon the lungs, is obviated owing to the hose which, filters the air and thus reduces its pressure. On the other hand a deficiency of air cannot occur, because the air not only enters from the front of the body but it is also supplied from behind,

- If the above described apparatus is to be applied to the nose, the tight closure
- 35 of the nostrils is preferably ensured and improved by applying an organic or inorganic fat, for example vaseline, either to the inner walls of the nostrils or to the outer surfaces of the bifurcated hollow tubular piece of the apparatus adapted for insertion into the nose, or, for attaining the same object in another manner, the bifurcated tubular piece may be coated with indiarubber or the like.

- 40 The hose serving as an air filter is preferably made of porous gauze or tissue paper of which several sheets are formed into a layer and corrugated. The hose

[Price 8d.]

Wolff's Improvements in Respirators.

may be projected internally and externally by layers of tulle or the like and be stiffened by wire spirals.

Dated this 28th day of November 1896.

HASELTINE, LAKE & Co.,
45 Southampton Buildings, London, W.C., Agents for the Applicant. 5

COMPLETE SPECIFICATION.

Improvements in Respirators.

I, JULIUS WOLFF, of Gross-Gerau, in the Empire of Germany, Factory-Proprietor, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and 10 by the following statement:—

The apparatus forming the subject of this invention serves, firstly, for supplying to grinders, textile operators or other persons working in rooms filled with dust, the requisite amount of air for breathing, in a dust-free condition, without such persons being impeded in their movements and, secondly, for efficiently protecting 15 persons, using this appliance, while moving in the open air, for example cyclists, railway guards and other persons, against the injurious effects of strong head winds and the like.

The apparatus illustrated in the accompanying drawing substantially consists of a hollow body made of sheet metal, celluloid or other appropriate material 20 in T shape, a branch or projection *a* of which may be either bipartite (bifurcated) or in one piece. In the former case the branch *a* is inserted into the nose as in Figure 1 and in the latter case into the mouth. In connection with the apparatus a nose pinching or compressing device is also used. Finally, the apparatus may be so constructed as to be applicable for both methods of use. The tubular trans- 25 verse piece *b* to which the branch is connected is attached at each end to a flexible hose *c* Figures 2 and 3, the walls of which serve as an air filter; *d* is a valve provided in or upon the hollow T shaped body *a b* and opens outwardly. The apparatus is preferably fixed to the face of the wearer by means of two elastic loops or the like, see Figure 1, which are placed around the ears, whilst the hose *c* 30 is placed around the neck and shoulders.

The action of the apparatus is such, that during the periods of inhalation the valve *d* closes automatically, while the air penetrates the walls of the hose *c*, acts as a filter, and passing to the interior is thence drawn through the nose or mouth of the wearer into the lungs, the dust and other impurities contained in the outer 35 air being deposited upon the exterior wall of the hose *c*, whence they may be easily removed, by periodically shaking or knocking the apparatus, since the outer wall remains dry.

When used by persons travelling at a high speed, the injurious pressure, due to a strong head wind, exerted under ordinary conditions upon the lungs is 40 obviated owing to the hose which filters the air and thus reduces its pressure. On the other hand a deficiency of air cannot occur, because the air not only enters from the front of the body but it is also supplied from behind.

If the above described apparatus is to be applied to the nose, the tight closure of the nostrils is preferably ensured and improved by applying an organic or 45 inorganic fat, for example vaseline, either to the inner walls of the nostrils or to the outer surfaces of the bifurcated hollow tubular piece of the apparatus adapted for insertion into the nose, or, for attaining the same object in another manner, the bifurcated tubular piece may be coated with indiarubber or the like.

Wolff's Improvements in Respirators.

The hose serving as an air filter is preferably made of porous gauze or tissue paper of which several sheets are formed into a layer and corrugated. The hose may be protected internally and externally by layers of tulle or the like and be stiffened by wire spirals.

5 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:—

1. In respiratory apparatus the combination of a hollow part (*a b*) adapted for respiration through either the nose or mouth and provided with a valve (*d*), with
10 body (*c*) permeable by air connected therewith, the walls of such body serving as a filtering medium for the air inspired.

2. In respiratory apparatus the combination of a hollow part (*a, b*) adapted for respiration through either the nose or mouth and provided with a valve (*d*), with
15 a body (*c*) permeable by air connected therewith in the form of a corrugated pipe, the walls of which upon the whole of their surface serving as a filtering medium for the air inspired.

Dated this 26th day of August 1897.

HASELTINE, LAKE & Co.,
45 Southampton Buildings, London, W.C., Agents for the Applicant.

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Noble's Improvements in Respirators.

The hose serving as an air filter is preferably made of porous gases or tissue paper of which several sheets are turned into a layer and compressed. The hose may be protected internally and externally by layers of cloth or the like and be stiffened by wire spirals.

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:—

1. In respiratory apparatus the combination of a hollow part (a) adapted for respiration through either the nose or mouth and provided with a valve (b) with a body (c) permeable by air connected therewith the walls of such body serving as a filtering medium for the air inspired.
2. In respiratory apparatus the combination of a hollow part (a) adapted for respiration through either the nose or mouth and provided with a valve (b) with a body (c) permeable by air connected therewith in the form of a corrugated pipe, the walls of which upon the whole of their surface serving as a filtering medium for the air inspired.

Dated this 26th day of August 1895.

HARVEY LARKIN & Co.,

45 Southampton Buildings, London, W.C., Agents for the Applicant.

Printed by the Stationer, 10, Abchurch Lane, London, E.C. 4.

Fig. 2.

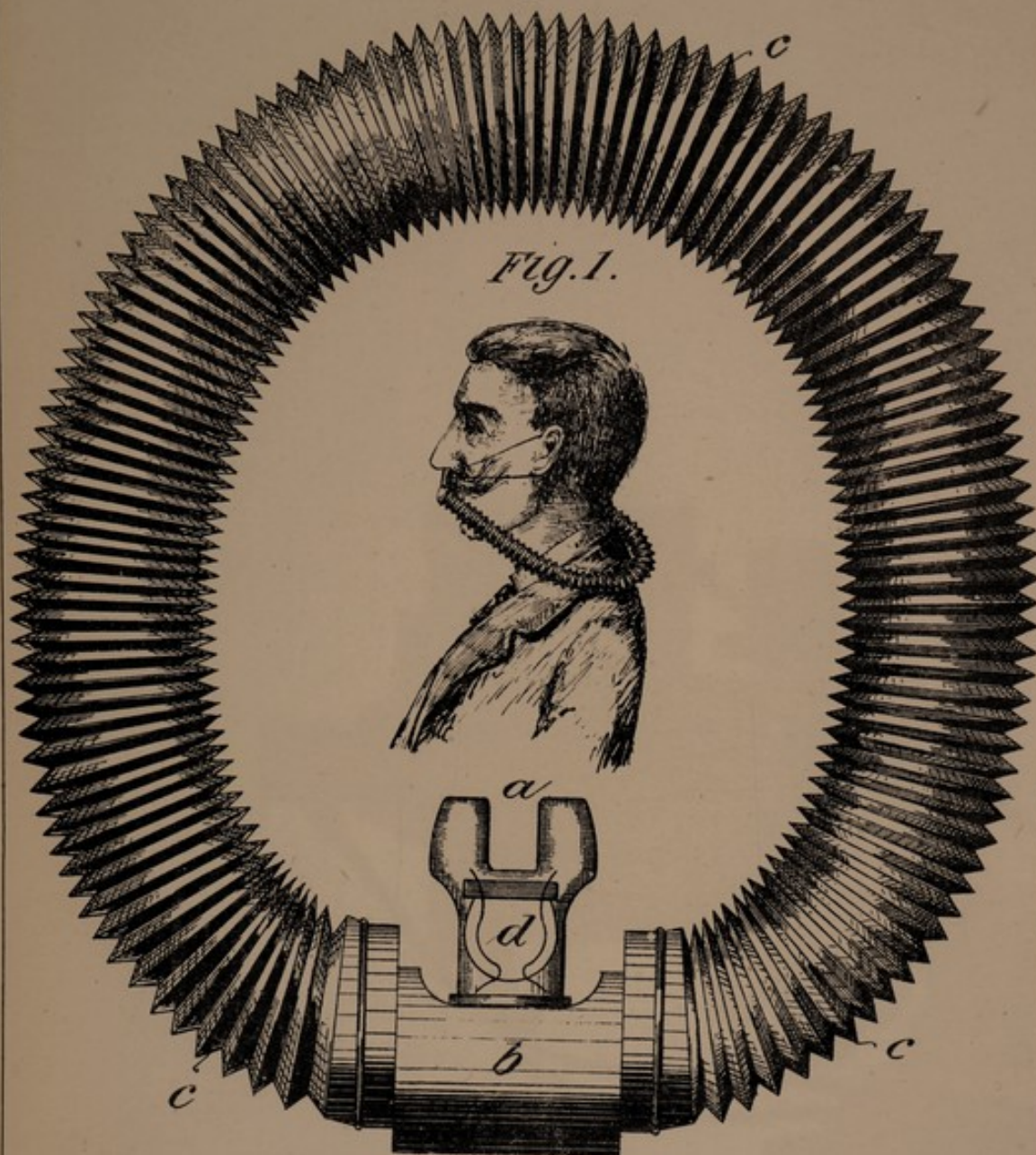
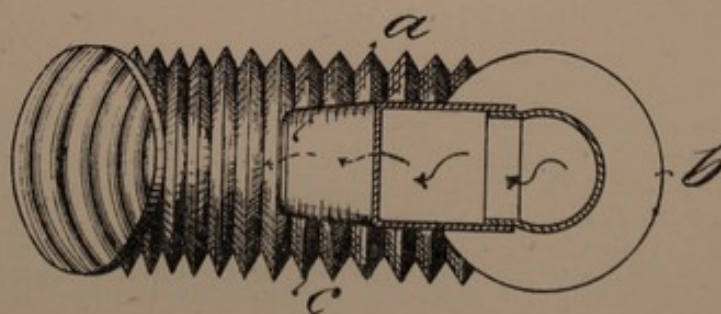


Fig. 3.



[This Drawing is a reproduction of the Original on a reduced scale]

