

Aug. 5, 1924.

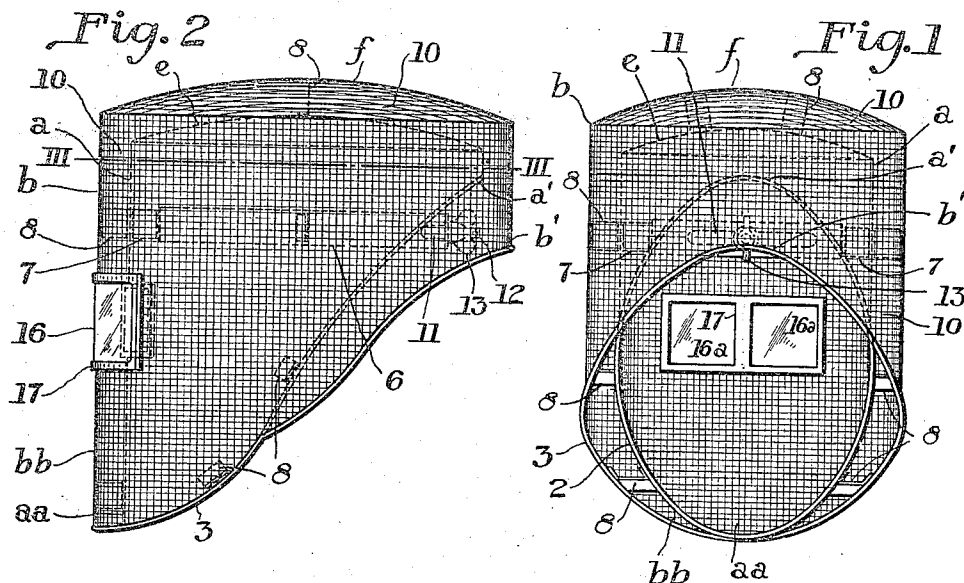
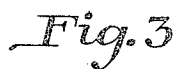
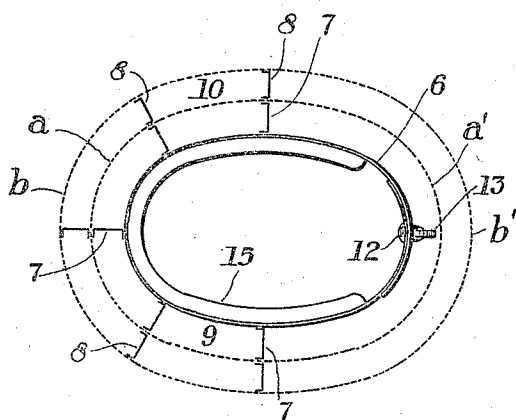
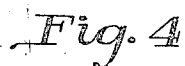
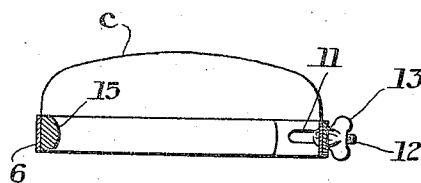
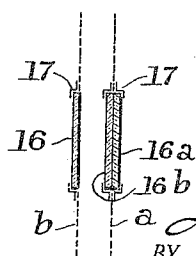
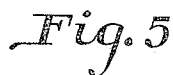
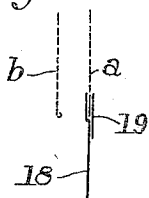
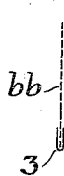
D. DE ROSIER

1,504,029

FACE MASK

Filed March 29, 1921

3 Sheets-Sheet 1



INVENTOR.

BY *David DeRosier*
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BY_

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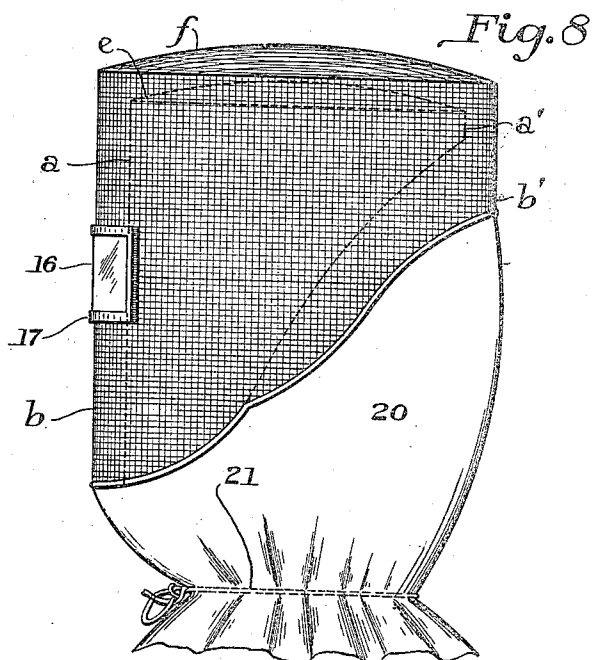
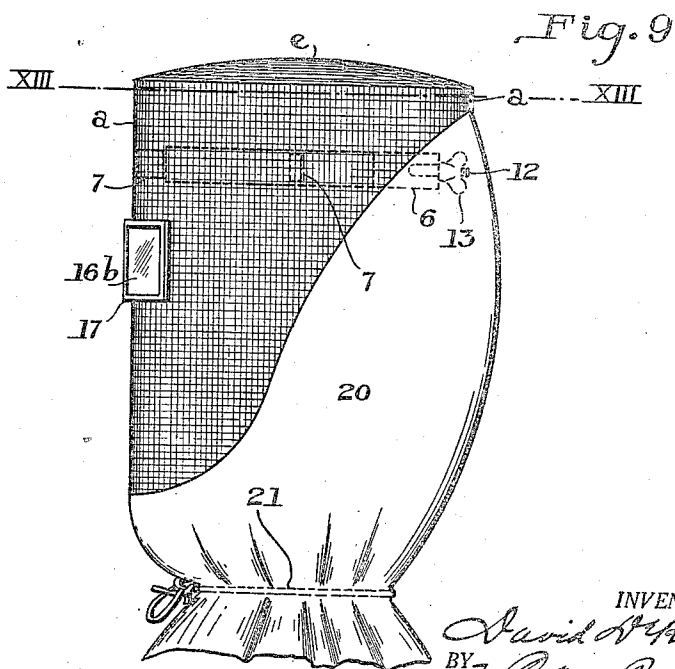
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FACE MASK

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3 Sheets-Sheet 2



INVENTOR.

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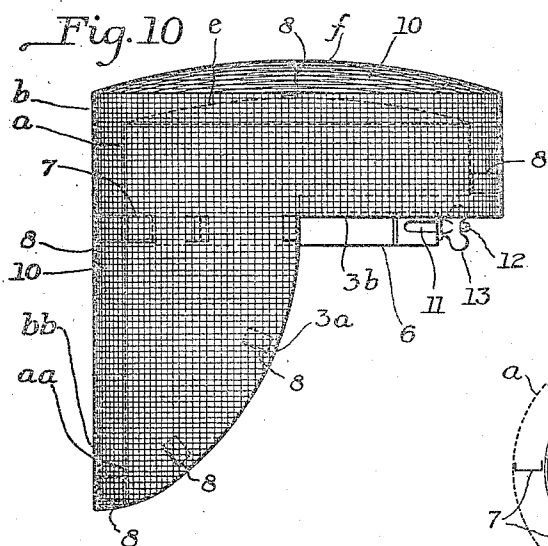
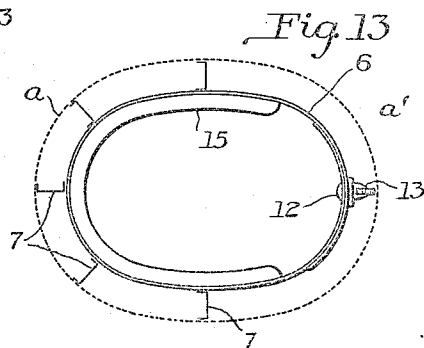
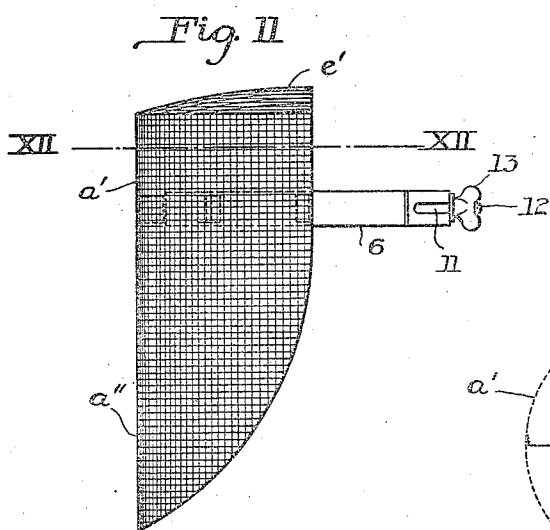
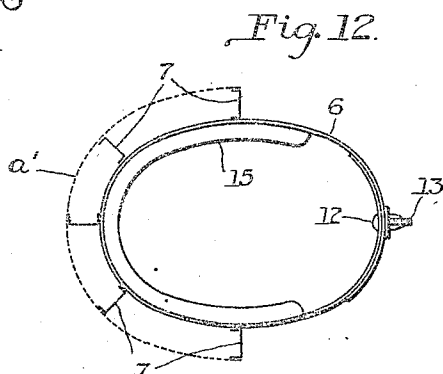
D. DE ROSIER

1,504,029

FACE MASK

Filed March 29 1921

3 Sheets-Sheet 3



INVENTOR.

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UNITED STATES PATENT OFFICE.

DAVID DE ROSIER, OF BRADDOCK, PENNSYLVANIA.

FACE MASK.

Application filed March 29, 1921. Serial No. 456,539.

To all whom it may concern:

Be it known that I, DAVID DE ROSIER, a citizen of the United States, residing at Braddock, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Face Masks, of which the following is a specification.

My invention is an improvement in face masks for protecting the face and the front and upper portions of the head of the wearer from excessive heat, for the use of furnacemen, foundrymen, mill workers, or others, whose employment is in close proximity to heat of high temperatures.

The present invention is an improvement in that class of masks disclosed in my prior Patent No. 1,342,898 issued June 8, 1920. I have therein fully disclosed the construction and advantages arising from the provision of an air space between the face of the user and the adjacent wire screen, and also between the inner and outer wire screens of a double wall mask. I have also shown the mask as extended backwardly partway over the top of the head protecting portion, as well as the use of sight glasses with the inner wall portion.

The improvements present in the invention herein involved relate to certain additional features of construction providing for further protection and utility. These consist, generally stated, in annular extensions of the upper portion of one or both protecting walls so as to entirely surround the upper portion of the head; a completely enclosing hood extension for covering all exposed portions above the shoulders; a flexible apron extension depending from one of the protecting wall members; an edge binding of suitable material, as asbestos; combination sight glasses; a skull cap extending upwardly above the supporting ring; and various other features of construction and advantage as shall be more fully hereinafter set forth.

Referring to the drawings:

Fig. 1 is a view of the mask in rear elevation;

Fig. 2 is a side elevation;

Fig. 3 is a cross section on the line III—III of Fig. 1;

Fig. 4 is a sectional detail showing the supporting head band provided with a covering cap;

Fig. 5 is a sectional detail showing an apron depending from one of the screen member;

Fig. 6 is a detail showing an edge binding around the screen member;

Fig. 7 is a sectional detail showing a plurality of sight glasses incorporated with both the inner and outer screen members;

Fig. 8 is a view in side elevation showing the mask provided with a depending hood connected with the outer mask and extending downwardly for close engagement with the neck;

Fig. 9 is a similar view showing the hood as applied to a single wall mask;

Fig. 10 is a view similar to Fig. 2 showing a modified construction;

Fig. 11 is a similar view showing a single section mask;

Fig. 12 is a cross section on the line XII—XII of Fig. 11; and

Fig. 13 is a cross section on the line XIII—XIII of Fig. 9.

In the present construction, the upper portion of the mask entirely surrounds the head cavity above the securing or holding band, so as to completely protect the entire upper portion of the head.

The inner mask portion *a* extends entirely around the back by means of a rear annular extension *a'*, and the outer portion *b* is continued by a similar extension *b'*. As shown, the rear upper portion *a'* arches upwardly beyond the thumb nut 13 of holding bolt 12 which extends through the slot 11 of the overlapping ends of holding band 6. Said band, as in the patent referred to, supports the entire mask on the head of the wearer, and is connected with the inner mask by spacing connections 7 of any suitable form located at intervals and providing the surrounding annular air space 9. Similar additional spacing connections 8 located at suitable intervals between the inner and outer mask portions provide the continuous intervening air space 10, so that in the case of a double mask, the parts are all mounted on and carried by the head band 6. Said band, as shown, is of light thin material, as strip metal, and is preferably provided with an inner cushioning pad 15 for engagement against the head of the user.

Each mask member is provided with a completely covering inner top coping por-

tion *e* and outer top coping portion *f* respectively, and the entire outer member is separated from the inner member by the continuous intervening side and top space

10. These shield portions, of fine wire netting, extend downwardly at the front, as shown by lower extensions *aa* and *bb* respectively, of sufficient length to completely protect the face and neck of the user, and are rounded upwardly and backwardly, and reinforced by a surrounding securing and finishing band or border 2 and 3 respectively.

The rear portion *a'* of the inner mask arches upwardly above the back of the holding band 6 sufficiently far to provide ample clearance for the hand in adjusting the thumb nut 13, in either the double or single form. The outer rear portion *b'* preferably extends downwardly over and is spaced backwardly beyond the thumb nut sufficiently far to also ensure clearance for the same purpose. This part of the outer mask is sufficiently low to provide for additional protection of the back of the head, as will be readily understood.

While any suitable material may be used for binding the edges, I prefer to use an edging of asbestos braid, doubled around and secured by stitching to the edge of the wire netting, as clearly shown in detail, Fig. 6. I have found in practice that the several sections of the wire netting members may be continuous throughout without any intervening transverse reinforcing portions, although they may be used if desired, as shown in my prior patent. The inner and outer wall members *a* and *b* and the inner ring member 6 are connected at somewhat closely adjacent intervals by spacing connections 7 and 8, secured to these portions in any suitable way, and holding them in their desired relative position.

The holding band 6 is preferably provided with a skull cap attachment *c* extending upwardly around the band, as shown in Fig. 4, of suitable flexible material adapted to fit over the head of the user and assist in supporting the mask in position.

When desired, a depending apron or bib shield 18 of suitable flexible material, as canvas, may be attached to the front and side edges of either mask member *a* or *b*, by stitching or otherwise, as indicated at 19. Such attachment may be of any suitable length and lateral extension so as to cover the neck and shoulders, and in some cases forms a useful attachment for the mask.

One or both of the mask walls *a* and *b* may be provided with sight openings covered by lenses or panes of glass or other suitable transparent material, at positions opposite the eyes of the user. These are of

advantage in assisting the vision, especially where the wire netting is of close mesh, for one or both of the shields. In the drawings I show an outer pane 16 mounted in the outer wall and an inner pane 16^a in the inner wall. These are inserted over suitable openings cut away in the wire netting wall, and are secured thereto in any convenient manner, as by surrounding frames 17 secured to the netting and with flange or lip engagement with the panes, or otherwise, as desired. By this means, the full protecting advantage of the outer screen *b* is maintained with the vision obstructing tendency of the netting reduced to a minimum.

In Fig. 7 I show in section a detail view in which two panes 16^a and 16^b are inserted together in the inner mask member, allowing for the use of colored glasses for one or both. By this construction, any desired combinations of colors are provided for, so as to modify the effect of glaring or dazzling light, and it will be understood that the frames 17 may be suitably shaped to allow of the easy removal or insertion of the glasses, in making any change in the combination.

A further advantage of considerable value is in providing a completely enclosing hood extension 20 secured to the annular lower edge of either mask member. This is shown in Fig. 8, as attached to the bottom edge of outer member *b* extending downwardly in skirt form, with an intervening neck band 21 for drawing the material closely around the neck. Band 21 may be an ordinary tying string incorporated in any suitable way, or it may be a rubber band sufficiently flexible to allow for stretching over the head in putting on the mask.

The front or back of the hood 20 may also be vertically divided, if desired, with suitable buttons or other convenient attaching devices, for readily opening or closing in applying the mask to position.

In Fig. 9 I show a similar arrangement in which the hood is used with a single wall mask only, utilizing the inner wall *a*—*a'* and top coping *e* with the inner supporting ring 6 and its attachments, as already described. With either form, the hood may be made of any suitable light flexible material, preferably permeable to air, for good ventilation. Very fine flexible wire netting cloth is particularly adaptable to such use, allowing for easy adaptation around the neck and also for free circulation of air. With either form, the entire head and neck are completely covered and protected, while allowing for free ventilation and circulation of air between the face and head and the outwardly spaced mask wall. In the single form, the mask is especially useful as a protection against insects or bees, as

in apiary work, or in harvesting or threshing, or other occupations where the user needs protection from dust, etc.

In Fig. 10 I show a continuous double wall mask similar to Fig. 2, except as to the side portions, in which the rear edges 3^a meet the horizontal lower edges 3^b of the rear upper coping portion at a substantially right angle. This arrangement provides for additional clearance for the ears and more open ventilation to the interior. The several other parts are as already described, and with similar numerals, except as to the sight glasses, which are omitted in this form.

Figs. 11 and 12 show a single thickness front mask composed of an upper section *a'* and a lower section *a''*, of half cylinder form, and having the top coping *e'* also extending back to the middle, mounted upon and outwardly spaced beyond the supporting band.

It will be understood that the mask as a whole may be made in any suitable sizes, proportions, or variations in design, and that the invention may be variously changed or modified in different details by the skilled mechanic, but all such changes are to be considered as within the scope of the following claims.

What I claim is:

1. A protecting mask of suitable perforate material having an inner mask member composed of a continuously annular upper portion and a continuous coping at its top, an outer mask member composed of a continuously annular upper portion and a continuous coping at its top, both of said members sloping downwardly from the back along the sides to front bottom portions with continuous intervening air circulation spaces, and an inner spaced attaching band.

2. A protecting mask of suitable perforate material having an inner mask member

composed of a continuously annular upper portion and a continuous coping at its top, an outer mask member composed of a continuously annular upper portion and a continuous coping at its top, both of said members sloping downwardly from the back along the sides to front bottom portions with continuous intervening air circulation spaces, and an inner spaced attaching band having a rear adjusting connecting device located below the rear lower edge of the inner member and above the rear lower edge of the outer member and inwardly of each member.

3. In combination, an inner continuously annular mask member and an outer continuously annular mask member of suitable perforate material each having a coping portion and continuously spaced from each other throughout with intervening connecting braces, the front portion of each member extending downwardly for the greatest depth and sloping upwardly at each side and rounded into rear portions of least depth, and an inwardly spaced attaching band secured to the inner member.

4. In combination, an inner continuously annular mask member and an outer continuously annular mask member of suitable perforate material each having a coping portion and continuously spaced from each other throughout with intervening connecting braces, the front portion of each member extending downwardly for the greatest depth and sloping upwardly at each side and rounded into rear portions of least depth, and an inwardly spaced attaching band secured to the inner member and having a rear adjusting device below the rear lower edge of the inner member.

In testimony whereof I hereunto affix my signature.

DAVID DE ROSIER.