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2,324,568

PAINT MASK STRUCTURE

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FIG. 1.

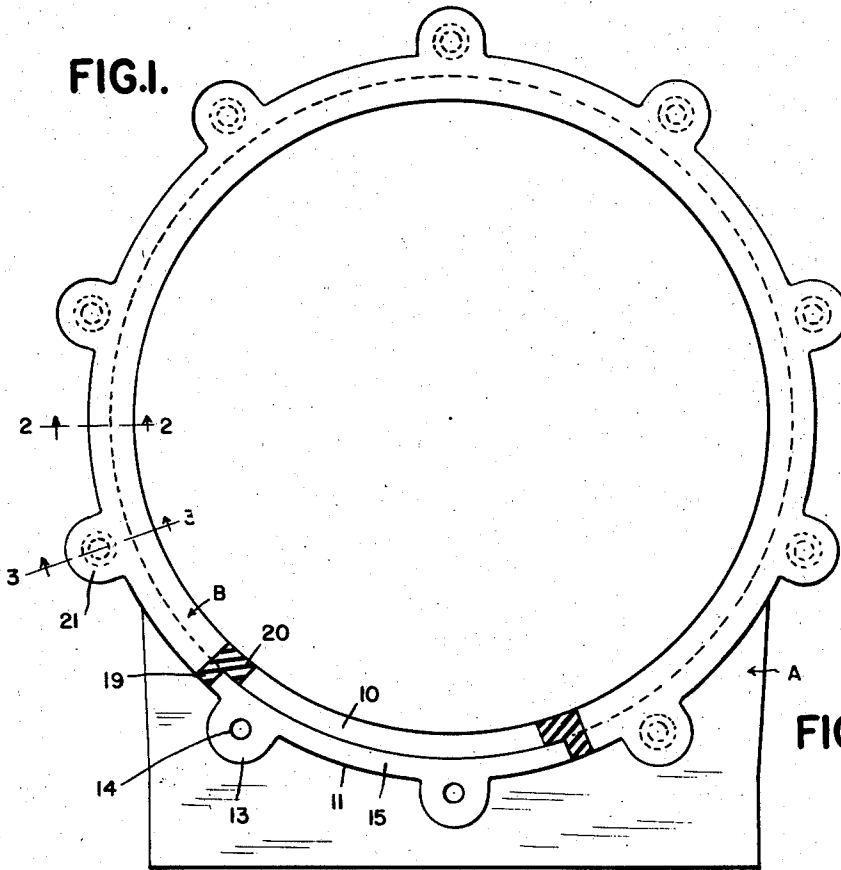


FIG. 6.

FIG. 5.

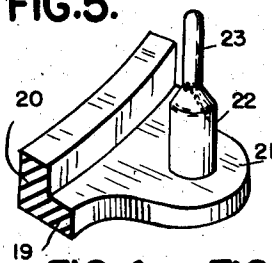
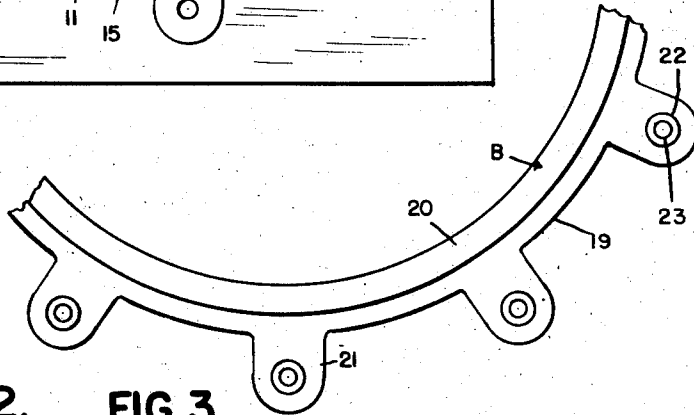


FIG. 4.

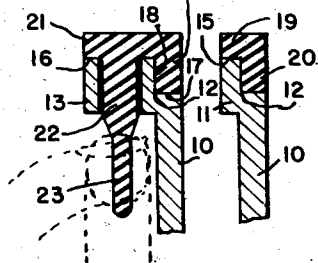
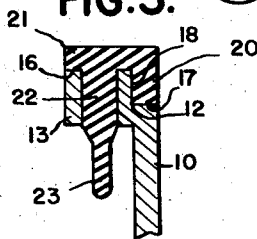


FIG. 3.



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PAINT MASK STRUCTURE

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10 Claims. (Cl. 91—65)

This invention relates generally to devices that are used to protect one or more surfaces or portions of articles from paint or a plating substance applied to adjacent surfaces or portions thereof, and refers more particularly to a mask structure applicable to the articles to be painted or plated.

One of the essential objects of the invention is to provide a mask structure that is shaped to conform to the surfaces or portions to be protected and that has its own fastening means.

Another object is to provide a mask structure wherein the masking portion thereof and the fastening means are integral and are preferably made from resilient material such as rubber or rubber composition.

Another object is to provide a durable mask structure that will stand repeated handling and use and that may be easily and quickly applied to or removed from the article to be painted without marring the same.

Another object is to provide a mask structure that is simple in construction and economical to manufacture.

Other objects, advantages and novel details of construction of this invention will be made more apparent as this description proceeds, especially when considered in connection with the accompanying drawing, wherein:

Figure 1 is an elevational view of a section of an electric motor housing, with parts broken away and in section;

Figure 2 is a sectional view taken on the line 2—2 of Figure 1;

Figure 3 is a sectional view taken on the line 3—3 of Figure 1;

Figure 4 is a view similar to Figure 3 but showing one of the projections and extension thereof in stretched position;

Figure 5 is a fragmentary bottom perspective view of the masking structure;

Figure 6 is a fragmentary bottom plan view of the mask.

Referring now to the drawing, A is a section of an electric motor housing that is preferably intended for use upon an airplane propeller hub, and B is a mask embodying my invention for protecting certain surfaces or portions of said housing from paint or plating material applied to the adjacent portions thereof.

As shown, the housing A is a metal casting having a circular portion 10 provided at one end with an annular flange 11. At the inner side of this flange is a rabbet 12 for receiving an edge of another section (not shown) of the housing, while at circumferentially spaced points of the outer side of said flange are laterally projecting lugs 13 for attachment to the second mentioned section of the housing. Any suitable means such as bolts (not shown) may be en-

gaged with holes 14 in the lugs 13 to secure the sections together.

In the present instance the outer surfaces 15 and 16, respectively, of the flange 11 and lugs 13 and the surfaces 17 and 18, respectively, of the rabbet are highly finished in accordance with government specifications, hence the mask B has been provided to prevent paint or plating material applied to the exterior or interior of the section A from reaching such surfaces. Preferably this mask B is in the form of an annulus having a horizontal portion 19 for covering the outer surface 15 of the annular flange and having a depending portion 20 for covering the surfaces 17 and 18 of the rabbet. The horizontal portion 19 of the annulus also has at spaced points circumferentially thereof laterally projecting lugs 21 that substantially conform in shape to and cover the lugs 13. Thus, when the annulus B is applied to the annular flange 11 of the housing, the surfaces 15 to 18, inclusive, are effectively covered and protected from paint or plating material that may be applied in any suitable manner to either the exterior or interior of the housing.

Preferably the mask B has its own fastening or anchorage means which preferably is in the form of substantially cylindrical projections 22 on the undersides of the lugs 21 for engagement with the holes 14 in the lugs 13 of the housing. Normally, the cross sectional area of the projections 22 is slightly larger than the cross sectional area of the holes 14 so that said projections are unable to enter the holes 14 by merely inserting them into the holes, however when they have been inserted as hereinafter described they will fit snugly in and frictionally engage the walls of said holes to maintain the annulus in proper engagement with the surfaces 15 to 18, inclusive, to be protected.

In the present instance the insertion of the projections 22 into the holes 14 is accomplished by the provision at the lower ends of said projections of endwise substantially cylindrical extensions 23 of reduced cross section that serve as finger pieces. Thus, when it is desired to insert the projections 22 into the holes 14 the extensions 23 are inserted first into the holes so that they project below the lugs 13. Such extensions 23 are then pulled downwardly as indicated in Figure 4 to stretch the projections 22 downward into the holes 14. As they are stretched the projections 22 contract sufficiently to enter the holes freely but when the extensions 23 are released after the mask B is in its proper masking position, the extensions 23 expand to substantially their normal size, and in doing so, they will fit snugly in and frictionally engage the walls of said holes to maintain the parts in assembled relation.

Thus, from the foregoing it will be apparent that the mask B will effectively cover and pro-

tect the surfaces 15 to 18, inclusive, from paint or plating material applied to the housing, that the mask B and fastening means 22 are formed from resilient material and constitute a one piece structure, and that the fastening means 22 may easily be manipulated by the finger pieces 23 to anchor the mask in place. In fact, the extensions or finger pieces 23 also serve as pilots for the projections 22 and assist in locating properly the mask B upon the housing. It will also be apparent that the one piece structure mentioned may be applied to or moved from the article to be painted or plated without marring the same.

What I claim as my invention is:

1. A mask structure formed from resilient material and having a masking element shaped to conform to angularly disposed surfaces or portions of an article, said masking element having projections engageable with holes in said article to fasten the element thereto, said projections normally being slightly larger than the holes, and means to stretch the projections to contract them within said holes, said projections being adapted when the stretching means is released to expand within and frictionally engage the walls of said holes to maintain the parts in assembled relation.

2. A mask structure formed from resilient material and having a masking element shaped to conform to angularly disposed surfaces or portions of an article, said masking element having integral projections engageable with holes in said article to fasten the element thereto, and said projections having extensions serving as pilots in said holes for the projections and as finger pieces, said projections normally being slightly larger than the holes but being adapted to be stretched into said holes by said extensions.

3. A mask structure of the class described comprising an annulus having a horizontal portion and a depending portion, the horizontal portion being provided at circumferentially spaced points with laterally projecting lugs provided on the underside thereof with depending substantially cylindrical projections having reduced endwise extensions constituting finger pieces.

4. A mask structure of the class described comprising a masking body having a horizontal portion and a depending portion, the horizontal portion being provided at spaced points thereof with laterally projecting lugs provided on the underside thereof with depending substantially cylindrical projections.

5. A one piece mask structure formed from resilient material comprising an annulus having a horizontal portion and a depending portion, the horizontal portion being provided at circumferentially spaced points with laterally projecting lugs provided on the underside thereof with depending substantially cylindrical projections having reduced endwise extensions constituting finger pieces.

6. A one piece mask structure formed from resilient material comprising a masking body having a horizontal portion and a depending portion, the horizontal portion being provided at spaced points thereof with laterally projecting lugs provided on the underside thereof with depending substantially cylindrical projections having reduced endwise extensions constituting finger pieces.

7. A masking device for protecting a portion of an article from paint or plating material applied

to an adjacent portion of said article, comprising a masking element shaped to cover the portion to be protected and having stretchable projections frictionally engageable with holes in said portion to maintain the masking element in operative masking position, said projections normally being slightly larger than said holes, and means extending endwise from said projections operable initially in the holes as pilots for the projections and operable thereafter as finger pieces whereby the projections may be stretched and thereby contracted within the holes, said projections being adapted when the finger pieces are released to expand within and frictionally engage the walls of said holes to maintain the masking element in operative masking position as aforesaid.

8. A masking device for protecting a portion of an article from paint or plating material applied to an adjacent portion of said article, comprising a masking element shaped to cover the portion to be protected and having on the underside thereof stretchable projections frictionally engageable with holes in said portion to maintain the masking element in operative masking position, said projections normally being slightly larger than said holes and having endwise extensions operable initially in the holes as pilots for the projections and operable thereafter as finger pieces whereby the projections may be stretched and thereby contracted within the holes, said projections being adapted when the finger pieces are released to expand within and frictionally engage the walls of said holes to maintain the masking element in operative masking position as aforesaid.

9. A one piece masking device for protecting a portion of an article from paint or plating material applied to an adjacent portion of said article, comprising a masking element shaped to cover the portion to be protected and having projections of resilient material frictionally engageable with holes in said portion to maintain the masking element in operative masking position, said resilient projections normally being slightly larger than said holes but adapted to be stretched and thereby contracted within said holes, and means constituting finger pieces connected to the projections and operable to stretch the same so that they will be contracted within said holes, said projections being adapted when the finger pieces are released to expand within and frictionally engage the walls of said holes to maintain the masking element in operative masking position as aforesaid.

10. A one piece mask structure formed from resilient material and having a masking element shaped to conform to angularly disposed surfaces or portions of an article, and projections on the underside of and substantially at right angles to the masking element engageable with holes in said article to hold the masking element in an operative masking position, said projections normally being slightly larger than the holes, and means to stretch the projections to contract them within said holes, said projections being adapted when the stretching means is released to expand within and frictionally engage the walls of said holes to maintain the masking element in operative masking position.

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