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WORK SUPPORT FOR DIPPING MACHINERY.

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1,354,930.

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Fig. 1

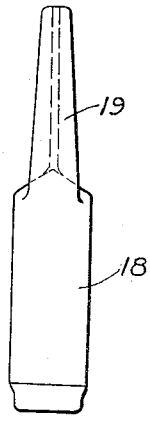


Fig. 2

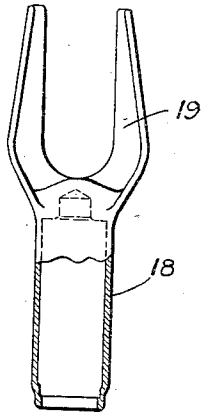
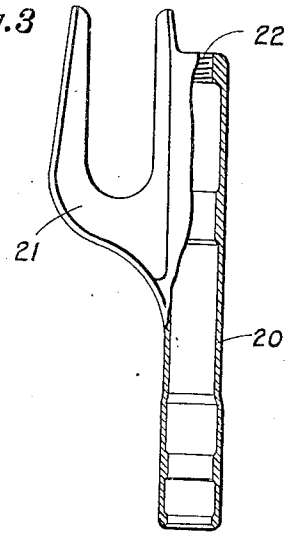


Fig. 3



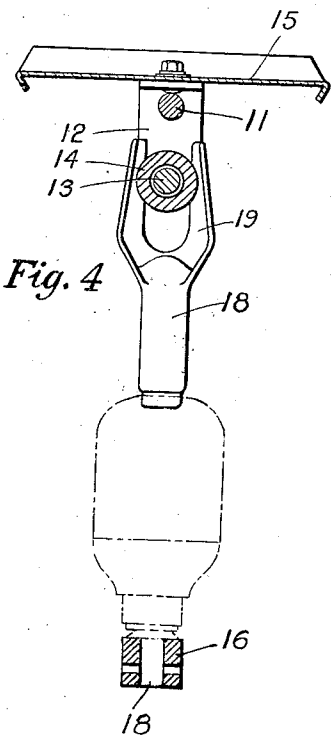


Fig. 4

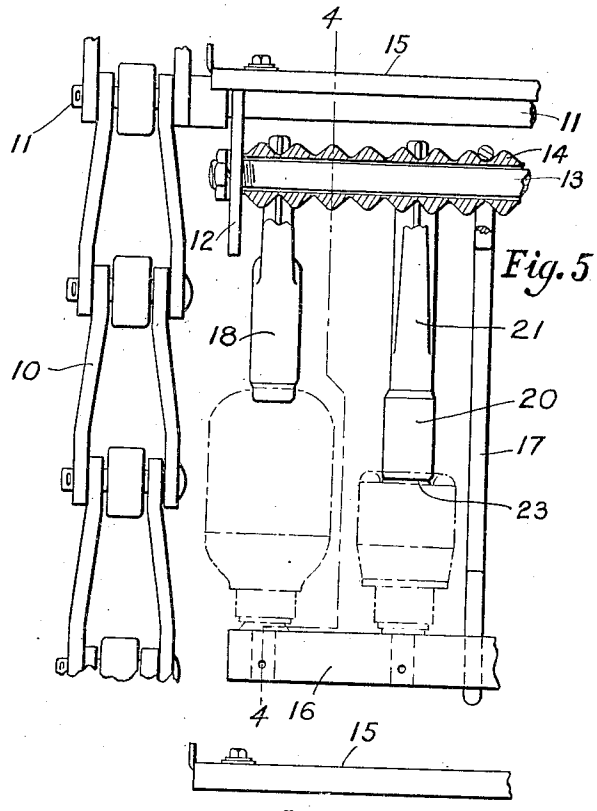


Fig. 5

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WORK-SUPPORT FOR DIPPING MACHINERY.

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To all whom it may concern:

Be it known that I, ANTHONY F. WILLIAMS, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Work-Supports for Dipping Machinery; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to means for supporting the work in machines by which articles such as the armatures of electric motors and generators are dipped in varnish or impregnating compounds, or the like.

The object of the invention is to produce work-supporting devices, for machines of the kind in question, which will be convenient in use, and which will protect certain portions of the work such, for example, as the shafts of armatures, from contact with the material in which the work is immersed, while at the same time securely supporting and retaining the work.

To the foregoing ends the invention resides in various features, hereinafter pointed out, of the mechanism illustrated in the accompanying drawings, and particularly in the use of a removable cap which cooperates with an upper supporting member and serves both to retain the work in upright position and to protect a portion of it from the material in which it is dipped.

In the accompanying drawings Figures 1 and 2 are a front-elevation and a side-elevation, respectively, of a cap embodying the present invention. Fig. 3 is a side-elevation of a cap of modified form. Figs. 4 and 5 are a side-elevation and a front-elevation, respectively, of portions of an apparatus embodying the present invention, Fig. 4 being in section on the line 4—4 in Fig. 5.

In machines of the kind in question it is common to employ conveyer-chains carrying a series of transverse rods or supporting members from which the articles which are to be dipped are suspended. These chains are guided over pulleys so as to cause the articles to be lowered into and raised from a tank containing the varnish or impregnating material, and are then caused to pass through a drying oven in which the material is dried and hardened. In the accompanying drawings Fig. 5 shows a portion of one of such conveyer-chains, comprising links 10 connected together by pivot-pins in the usual manner. One of the pivot-pins is elongated in the form of a transverse rod 11, which carries the work-supporting devices constituting the present invention.

Brackets 12 are pivoted upon the rod 11, and support a second transverse rod 13, which is shown as provided with a sleeve 14 having a series of annular grooves. It will be understood that the chain and the bracket 12, shown in Fig. 5, are duplicated at the other side of the machine, and that the rods 11 extend between the two chains at suitable intervals. These features are not shown more fully herein as they are not in themselves novel.

As is usual in such machines each cross-rod 11 carries also a drip-pan 15, which serves to connect the brackets 12 and also to prevent material which drips from one row of objects from falling upon the objects below.

In machines of the kind in question, where armatures are to be impregnated, it has been common to suspend the armatures from the rod 13, or its equivalent, by means of various devices, and the present invention resides particularly in the means for that purpose herein disclosed. As shown in Figs. 4 and 5, the armatures are sustained at their lower ends by means of a cross-bar 16, which is suspended by means of links 17 engaging the grooved sleeve 18. The cross-bar 16, which constitutes the lower supporting member, is perforated at intervals to receive the lower ends of the armature-shafts. The upper portions of the shafts are received in caps which constitute a particular feature of the invention. In the more usual form one of these caps, as shown in Figs. 1 and 2, comprises a hollow body 18, adapted to receive loosely the upper portion of the armature-shaft, and a forked upper extremity 19, which loosely straddles the grooved sleeve 14. The body 18 extends downwardly substantially into engagement with the core of the armature or the windings thereon. When an armature is to be inserted in the machine one of the caps is dropped over the armature-shaft, the forked extremity is engaged with one of the grooves in the sleeve 14, and the lower end of the armature-shaft

is then slipped into the corresponding perforation or socket in the bar 16. The armature is then securely retained in place during the operation of the machine. When the armature is dipped the varnish or impregnating material is prevented from entering the cap by means of the air retained therein, so that the armature-shaft is effectually protected and in most cases this is accomplished without the necessity of any close fitting between the parts.

In some instances, where the armature is small and the shaft comparatively long, a modified form of cap is used, as shown in Fig. 3. In this case the cap 20 extends upwardly alongside the forked portion 21. In such a case, owing to the depth to which the small armature is immersed, it is found desirable to make a tight joint between the sleeve and the armature, and for this purpose the sleeve is provided, at its upper end, with a screw-threaded aperture 22 into which the threaded end of the shaft is screwed, and in this manner the cap may be drawn tightly against a gasket 23, by which means a fluid-tight joint is produced between the armature and the cap.

While the invention has been described as applied particularly to a machine in which armatures are dipped, it will be apparent that it is not limited to this particular use and that, in general, the invention is not limited to the embodiment thereof herein described and illustrated in the accompanying drawings, but is susceptible to various modifications within the scope of the following claims.

The invention claimed is:

1. In a machine of the class described, the combination, with a conveyer, of a support for the lower end of an article to be dipped; a cap for covering the upper part of the article; and an upper supporting-member loosely engaged by the cap and serving, through such engagement, to maintain the article substantially upright.

2. In a machine of the class described, the combination, with a conveyer, of two supports, in the form of parallel bars, carried by the conveyer, one of said supports being provided with seats for the lower ends of armature-shafts; and caps, for covering the upper ends of the armature shafts, having forked extremities adapted to embrace the other of said supports, whereby to maintain the armature-shafts in substantially upright position.

3. In a machine of the class described, a cap, adapted to cover loosely the end of an armature-shaft, provided with a forked extremity adapted to embrace a supporting-member.

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