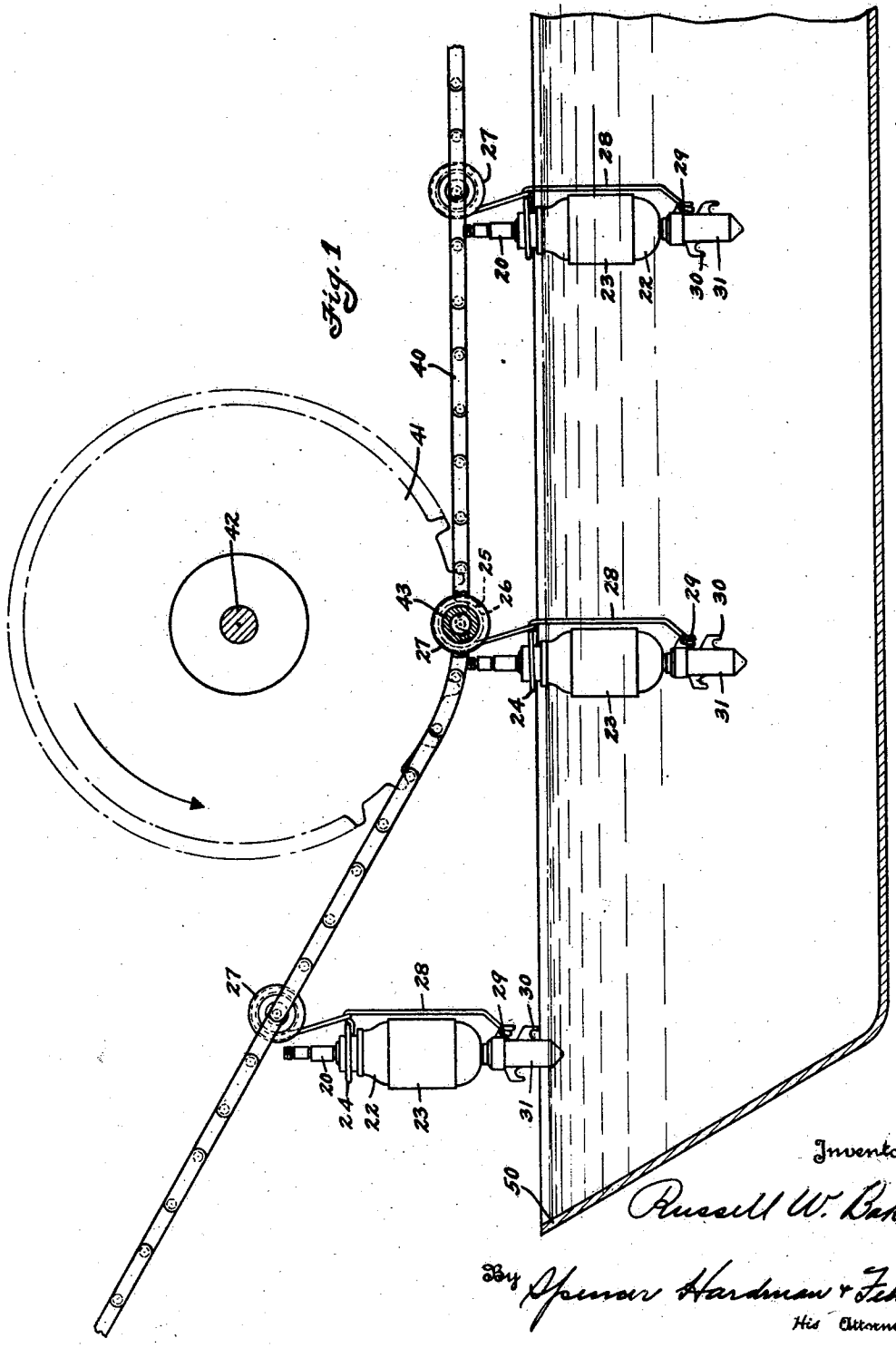
April 8, 1930. R. W. BAKER 1,753,640

ARMATURE CONVEYING APPARATUS

Filed June 29, 1928 2 Sheets-Sheet 1

Fig. 1



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ARMATURE CONVEYING APPARATUS

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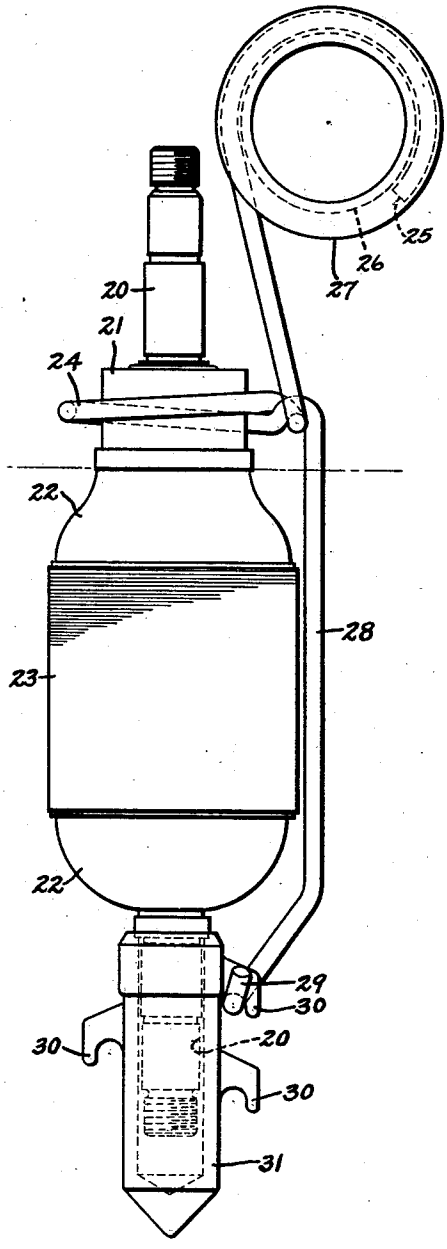

Fig. 2

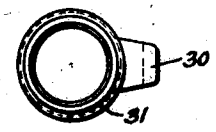

Fig. 3

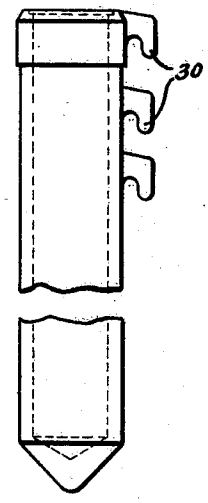

Fig. 4

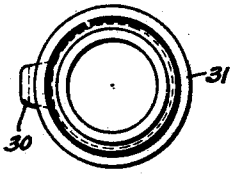

Fig. 5

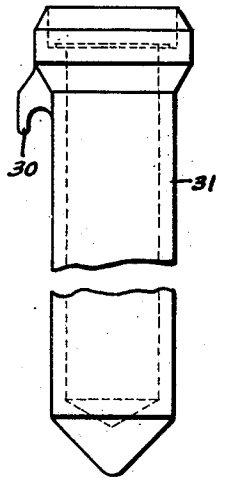

Fig. 6

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UNITED STATES PATENT OFFICE

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ARMATURE-CONVEYING APPARATUS

Application filed June 29, 1928. Serial No. 289,261.

This invention relates to apparatus for conveying articles through a liquid bath and particularly for conveying the armatures of dynamo electric machines through a bath of varnish used to coat the armature windings.

One object of the present invention is to provide a simple and durable apparatus which will convey dynamo armatures through a varnish bath and which will protect the ends of the armature shafts from the varnish.

Further objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawings, wherein a preferred form of embodiment of the present invention is clearly shown.

In the drawings:

Fig. 1 is a fragmentary diagrammatic view of the conveying apparatus embodying the present invention.

Fig. 2 is a view on an enlarged scale of an armature suspended from one of the hangers of the conveyor shown in Fig. 1.

Figs. 3 and 4 are plan and side views respectively of a modified form of hanger sleeve.

Figs. 5 and 6 are plan and side views respectively of a still further modified form of hanger sleeve.

The particular form of armature to which the present invention is adapted to be used is one comprising a shaft 20 carrying a commutator 21 connected with armature windings 22 wound upon a core 23 also attached to the shaft 20. Referring to Fig. 2, the armature hanger is provided by bending a piece of wire so as to provide an intermediate loop 24 which surrounds the commutator 21 and which has a hook 25 received by an annular groove 26 in a ring or collar 27 and with a portion 28 adapted to extend alongside the armature core 23 and terminating in a hook 29 adapted to engage any of a plurality of hooks 30 integral with a hanger cup or sleeve 31 providing a central socket for receiving the lower end of the armature shaft 20.

The armature hanger conveyor is provided by a pair of spaced conveyor chains arranged to move in parallel paths. One of these chains is indicated at 40 in Fig. 1 and passes around a sprocket 41 supported by a shaft 42. It will be understood that the shaft 42 supports a similar sprocket 41 for supporting another chain 40 parallel to the one shown in the drawing. The two chains 40 support between them a plurality of rods or tubes 43 each carrying a plurality of collars 27 and hangers having commutator embracing loops 24 and hooks 29.

Before the armature is supported on the conveyor for movement into the bath of varnish supported in a vat 50, the end of the armature shaft which is emerged is coated with oil before the protecting sleeve 31 is placed upon it. Then the assembled sleeve and armature are assembled with the hanger as shown in Figs. 1 and 2. The hook 29 cooperates with the sleeve 31 to support the armature shaft by its lower end portion and the loop 24 cooperates with the commutator 21 so as to maintain the armature in substantially vertical position. The hangers are pivotally supported upon the cross tubes 43 so that they will remain upright as they pass into and out of the varnish vat 50. It has been the practice to convey the armatures from the varnish vat into a varnish drying oven. After being conveyed from the drying oven, the armatures are removed from the hangers and the protecting sleeves 31 are removed from the armatures.

As armatures may vary in length of the armature core, the sleeve 31 may be provided with a plurality of hooks 30 so that the sleeve 31 may be adapted to support the armature at the proper distance so as to locate the commutator 21 within the loop 24 and at such a distance below the conveyor that all portions of the armature windings will be submerged into the varnish bath. Figs. 4 and 6 show other forms of hanger sleeves which may be used with the same hangers which support the sleeves 31 shown in Figs. 1 and 2. The hanger sleeve is constructed so as to be adapted to support armatures having shafts varying in length and in diameter as

well as to be adapted to support armature cores varying in length.

While the form of embodiment of the present invention as herein disclosed, constitutes a preferred form, it is to be understood that other forms might be adopted, all coming within the scope of the claims which follow.

What is claimed is as follows:

1. Apparatus for conveying dynamo armatures comprising in combination, a travelling support, and means pivotally attached to the support for holding substantially vertically an armature comprising an assembly of shaft, core and windings and having a part for directly receiving one end of the armature shaft.

2. Apparatus according to claim 1 in which the holding means includes a device for protecting a portion of the armature shaft.

3. Apparatus according to claim 1 in which the holding means includes a device for enclosing the lower end of the armature shaft.

4. Apparatus for conveying dynamo armatures comprising in combination, a travelling support and means pivotally attached to the support for supporting the armature by the lower end portion of its shaft and including provisions for maintaining the armature in upright position.

5. Apparatus for conveying dynamo armatures comprising in combination, a travelling support, and means pivotally attached to the support for supporting the armature by the lower end portion of its shaft and including a band encircling the commutator in order to maintain the armature in upright position.

6. Apparatus for conveying dynamo armatures comprising, in combination, a travelling support, a sleeve for receiving one end portion of the armature shaft and for supporting the armature in an upright position by its lower end and a hanger connecting the sleeve with the support.

7. Apparatus according to claim 6 in which the hanger includes a band portion for encircling a portion of the armature spaced from that end of its shaft which is received by the sleeve.

8. Apparatus for conveying dynamo armatures comprising, in combination, a travelling support, and means attached to the support for holding an armature comprising an assembly of shaft, core and windings so that one end of the shaft is uppermost, and having means for enclosing the lower end portion of the shaft.

In testimony whereof I hereto affix my signature.

RUSSELL W. BAKER.