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SPINNING BOX

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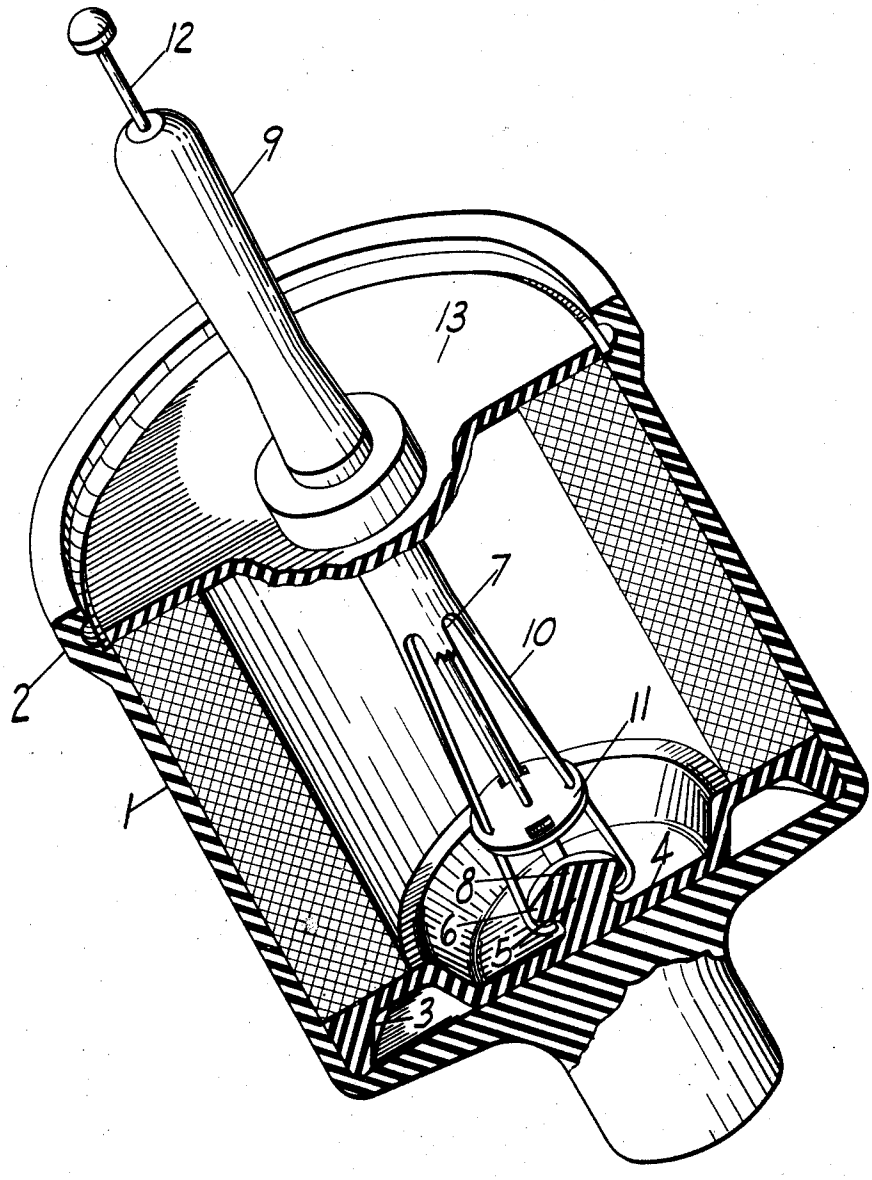


INVENTOR.
HENRY JAMES McDERMOTT.
BY Thomas R O'Malley
ATTORNEY.

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## SPINNING BOX

Henry J. McDermott, Prospect Park, Pa., assignor to American Viscose Corporation, Wilmington, Del., a corporation of Delaware

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14 Claims. (Cl. 57—76)

This invention relates to improvements in spinning boxes used in the production of rayon. More particularly the invention relates to improvements in means for removing a rayon cake from a spinning box.

It is the customary practice in the manufacture of rayon to remove a rayon cake from a spinning box by removing the box from its drive spindle and inverting it to cause the cake to drop out. Means have been suggested whereby the cake could be removed from its box without first removing the box from its spindle. However, as the spinning box is usually set back from the working face of the spinning machine, it was difficult to use these means and they were found to be unsatisfactory.

The invention has for its principle object to provide an improved rayon spinning box which facilitates the removal of the rayon cake.

The invention has for a further object to provide improved means for removing a rayon cake from a spinning box.

Other objects and advantages of the invention will be apparent from the following description and accompanying drawing.

In the drawing is shown a view with parts in section of a preferred embodiment of the invention.

Referring to the drawing, reference character 1 indicates a spinning box having a rim portion 2 adjacent its open end. The box is provided with a closely fitting removable bottom member 3. The bottom member has a depressed central portion 4 in the center of which is positioned an upright portion 5. The upright portion is undercut forming a ledge 6 which may be gripped by a tool generally indicated by reference character 7. The upper portion 8 of the upright is tapered or convex. The tool for removing the bottom member comprises a handle portion 9 to which are secured the gripping members 10. The gripping members are actuated by the disk 11 carried by the plunger 12 which extends through the handle and which is mounted to slide on the gripping members. The tool is provided with a disk-like guiding means 13 positioned below the handle which is slightly smaller than the inside diameter of the open end of the spinning box.

In the operation of the device the rayon cake is spun with the removable bottom member in the spinning box. When it is desired to remove the cake the cover of the box is removed and the tool is inserted. The guide member below the handle is guided by the walls of the box to center the tool. The tapered or convex portion of the upright guides the gripping members so that by pressing down on the tool the gripping members pass over the top of the upright and engage the ledge. By depressing the plunger through the handle the gripping members tightly engage the upright so that the cake and the bottom member may be lifted out of the box. The guiding means on the tool and the upright enable the upright to be quickly gripped by the tool and prevent damage to the rayon cake. With this device it is not necessary to remove the spinning box from the spindle in order to remove the cake. Also the device can be readily used where the spinning box is set back from the working face of the machine.

While a preferred embodiment of the invention has been shown, it is to be understood that changes and variations may be made without departing from the spirit and scope of the invention as defined by the appended claims.

What I claim is:

1. A spinning box for collecting yarn or the like having a removable bottom member closely fitting the inner wall of the spinning box, means by which the bottom member may be removed from the spinning box with a tool comprising an upright portion on the bottom member having means for guiding the tool into engagement therewith.

2. A spinning box for collecting yarn or the like having a removable bottom member closely fitting the inner wall of the spinning box, means by which the bottom member may be removed from the spinning box with a tool comprising a centrally positioned upright portion on the bottom member having means for guiding the tool into engagement therewith.

3. A spinning box for collecting yarn or the like having a removable bottom member closely fitting the inner wall of the spinning box, means by which the bottom member may be removed from the spinning box with a tool comprising an upright portion on the bottom member which is undercut to form a ledge which may be engaged by a tool, said upright portion having means for guiding the tool into engagement therewith.

4. A spinning box for collecting yarn or the like having a removable bottom member closely fitting the inner wall of the spinning box, means on the bottom member by which the bottom member may be removed from the spinning box with a tool, including means for guiding the tool into engagement therewith, a tool for removing the bottom member comprising gripping means

and means for guiding the tool into engagement with the bottom member.

5. A spinning box for collecting yarn or the like having a removable bottom member closely fitting the inner wall of the spinning box, means by which the bottom member may be removed from the spinning box with a tool comprising an upright portion on the bottom member having means for guiding the tool into engagement therewith, a tool for removing the bottom member comprising gripping means and means for guiding the tool into engagement with the bottom member.

6. A spinning box for collecting yarn or the like having a removable bottom member closely fitting the inner wall of the spinning box, means by which the bottom member may be removed from the spinning box with a tool comprising an upright portion on the bottom member which is undercut to form a ledge which may be engaged by a tool, said upright portion having means for guiding the tool into engagement therewith, a tool for removing the bottom member comprising gripping means and means for guiding the tool into engagement with the bottom member.

7. A spinning box for collecting yarn or the like having a removable bottom member closely fitting the inner wall of the spinning box, means by which the bottom member may be removed from the spinning box with a tool, including means for guiding the tool into engagement therewith, a tool for removing the bottom member comprising gripping means and means for contacting the inside of the rim portion of the spinning box for guiding the tool into engagement with the bottom member.

8. A tool for removing a bottom member from a spinning box comprising members for gripping the bottom member, means for actuating the gripping members and means for guiding the tool into engagement with the bottom member.

9. A tool for removing a bottom member from a spinning box comprising members for gripping the bottom member, means for actuating the gripping members, means for contacting the inside of the rim portion of the spinning box for guiding the tool into engagement with the bottom member.

10. A spinning box for collecting yarn or the like having a removable bottom member closely fitting the inner wall of the spinning box, means on the bottom member by which the bottom member may be removed from the spinning box with a tool, a tool for removing the bottom member comprising gripping means and disk-like means carried by the tool for guiding the tool into engagement with the bottom member.

11. A tool for removing a bottom member from a spinning box comprising means for gripping the bottom member and means carried by the tool above the gripping means for guiding the tool into engagement with the bottom member.

12. A tool for removing a bottom member from a spinning box comprising means for gripping the bottom member and disk-like means carried by the tool for guiding the tool into engagement with the bottom member.

13. A spinning box for collecting yarn or the like having a removable cake supporting member closely fitting the inner wall of the spinning box, the cake supporting member having an annular surface which may be engaged by a tool for removing the cake supporting member from the spinning box, and a substantially continuous inclined surface for guiding the tool into engagement with the cake supporting member.

14. A spinning box for collecting yarn or the like having a removable bottom member closely fitting the inner wall of the spinning box, the bottom member having a substantially continuous annular surface which may be engaged by a tool for removing the bottom member from the spinning box, and a substantially continuous inclined surface for guiding the tool into engagement with the bottom member.

HENRY J. McDERMOTT.