

[54] PAINT ROLLER CORE
[75] Inventor: John A. Pharris, Brookfield, Wis.
[73] Assignee: E Z Painter Corporation
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[58] Field of Search 15/230.11; 29/110, 110.5, 29/116 R

[56] References Cited

UNITED STATES PATENTS			
2,747,210	5/1956	Canning et al.	15/230.11
2,794,202	6/1957	Schueler	15/230.11
2,891,301	6/1959	Conklin	29/116 R
2,982,010	5/1961	Johns	15/230.11
3,119,137	1/1964	Schueler	15/230.11
3,425,086	2/1969	Ball	15/230.11
3,638,271	2/1972	Pharris	15/230.11

3,774,278 11/1973 Ashton 29/116 R
Primary Examiner—Alfred R. Guest
Attorney, Agent, or Firm—Coffee and Sweeney

[57] ABSTRACT

A unitary molded core structure, such as of plastic or the like, for use in a paint roller. The core structure is rotatably mounted on an axle of the paint roller and receives a cylindrical paint applying sleeve. The core has a pair of parallel plates equally spaced from the axle along with supporting ribs therealong, with the edges of the plates and ribs rigidly supporting the paint applying sleeve in the planes thereof, but the plates having a degree of flexing to facilitate mounting various sleeves thereon. Journal defining webs are molded integrally with and extend between the parallel plates. Integrally molded end discs are provided at the ends of the plates, with a removable cap disposed on the one end disc at the free end of the axle.

11 Claims, 4 Drawing Figures

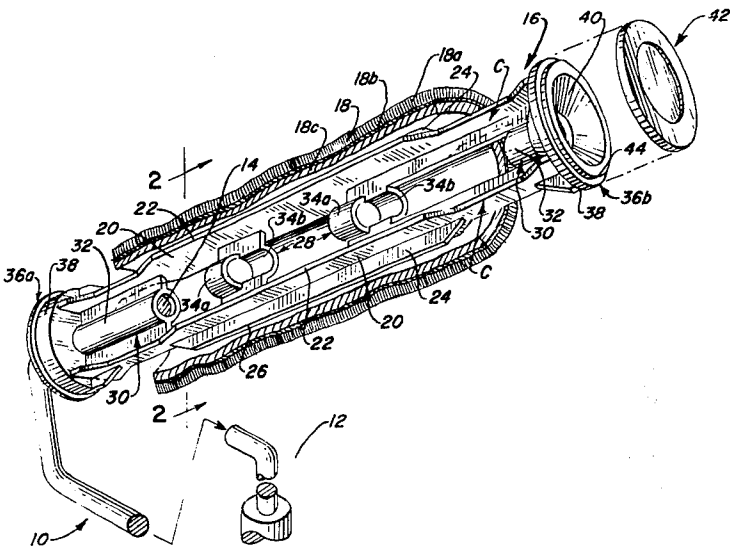


FIG. 1

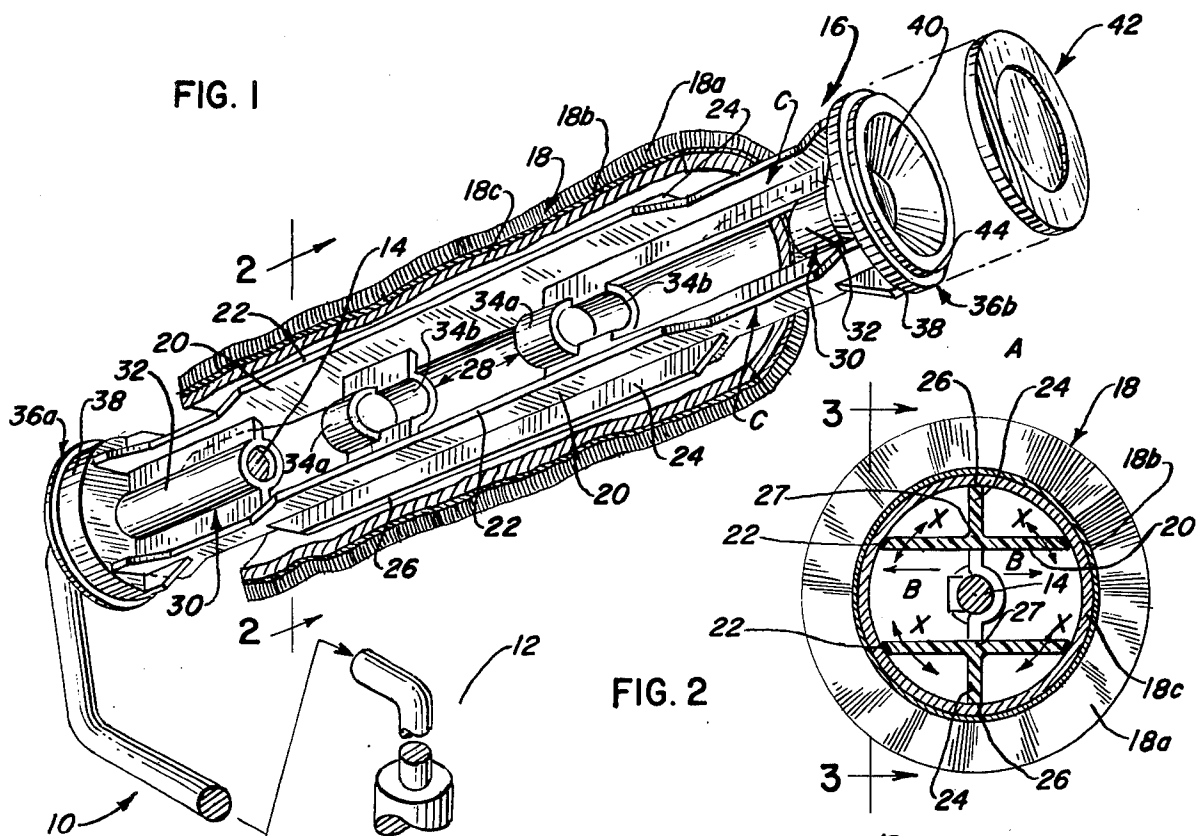


FIG. 2

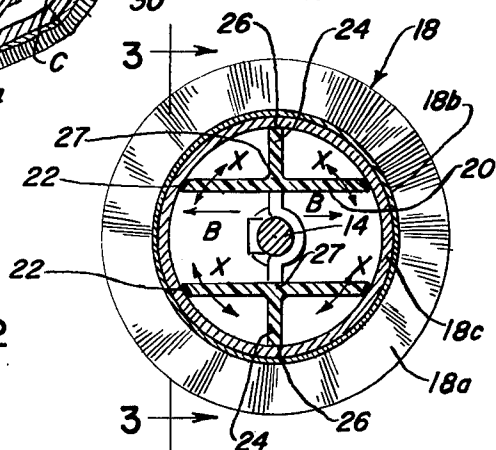


FIG. 3

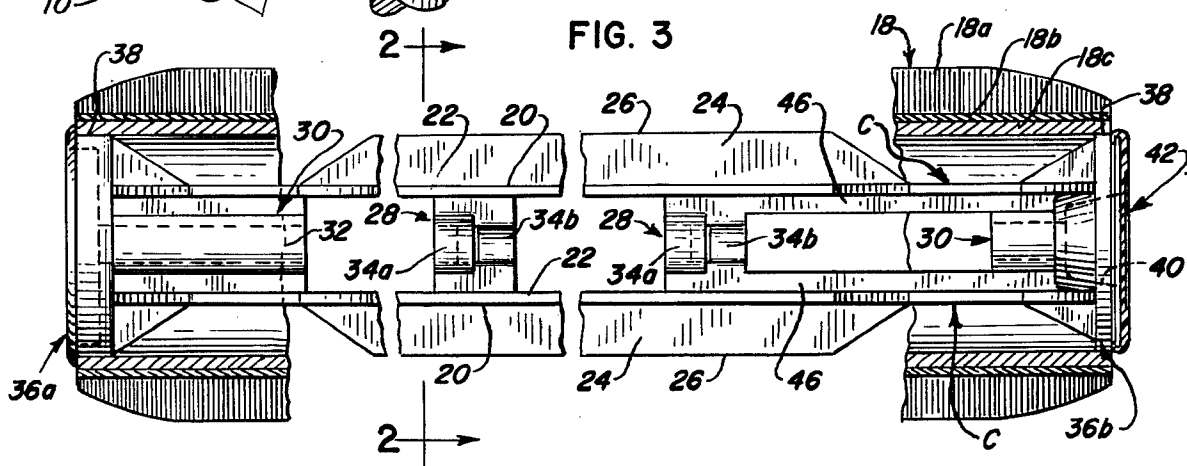
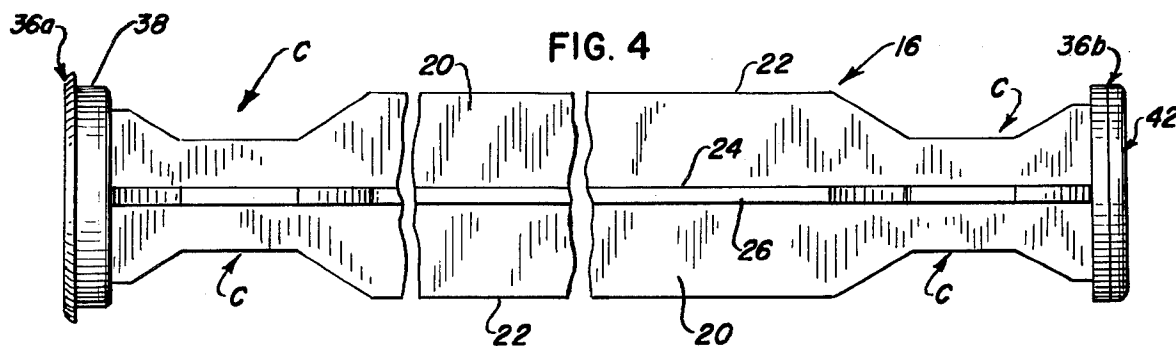


FIG. 4



PAINT ROLLER CORE

BACKGROUND AND SUMMARY OF THE INVENTION

This invention relates to paint rollers and, particularly, a new and improved core structure for rotatably mounting on the axle of a paint roller for receiving and rigidly supporting a cylindrical paint applying sleeve.

Heretofore, most cores for paint applying sleeves on a paint roller have been fabricated of a plurality of parts which must be assembled either during manufacture or use, many of the parts being fabricated of permanently deformable material, such as metal or rod stock, which, when deformed, cease to provide their rigid supporting function for removable, replaceable paint applying sleeves. This invention is directed to providing a new and improved core structure for a paint roller, the core structure being substantially completely unitarily molded of plastic or the like and providing improved rigid support for the interior of paint applying sleeves.

The principal object, therefore, of the present invention is to provide a new and improved core structure for a paint roller.

In the exemplary embodiment of the invention, the core structure is rotatably mountable on the axle of a paint roller wherein the axle normally is disposed at generally right angles with respect to a handle. The core structure axially receives a cylindrical paint applying sleeve. The core structure is integrally molded and includes a pair of substantially identical, generally parallel longitudinal plates spaced equidistant from, on opposite sides of and generally parallel to the axis of the roller axle. A longitudinal rib is molded integrally with the plates and extend generally parallel to the axle. The ribs protrude generally radially outwardly from the axle and the plates a distance sufficient to engage the interior of the paint applying sleeve whereby the longitudinal edges of the ribs and plates provide rigid support for the sleeve but the plates having sufficient flexibility to accommodate slight variances in the inside diameter of the sleeve. Journals are formed on a plurality of longitudinally spaced webs extending between and molded integrally with the plates. A pair of end discs are molded integrally with and at the ends of the plates, the end discs having diameters to provide peripheral circular support with the interior of the paint applying sleeve generally at the ends thereof.

An additional feature is providing a recess in the end disc disposed at the free end of the roller axle to provide an interior area for accommodating appropriate securing means between the core and axle. A removable cap is provided for covering the end recess to keep paint therefrom.

Other objects, features and advantages of the invention will be apparent from the following detailed description taken in connection with the accompanying drawings.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view, partially cut away and in section of a paint roller embodying the core structure of the present invention;

FIG. 2 is a vertical section taken generally along the line 2—2 in FIGS. 1 and 3;

FIG. 3 is a fragmented vertical section taken generally along the line 3—3 of FIG. 2; and

FIG. 4 is a side elevational view of the core structure taken generally in the direction of arrow A (FIG. 2).

DETAILED DESCRIPTION OF THE INVENTION

Referring to the drawings in greater detail, the core structure of the present invention is particularly adapted for use in a paint roller, generally designated 10, having a handle 12 and an axle 14 disposed at generally right angles with respect to the handle 12. Although the handle and axle are shown fragmented in FIG. 1, they are of generally conventional configuration. The core structure, generally designated 16, of the present invention is rotatably mounted on the axle 14 for axially receiving a cylindrical paint applying sleeve, generally designated 18. The sleeve is of substantially conventional form including a paint applying matting 18a backed by a layer 18b and a relatively rigid support backing layer 18c.

The core structure of the present invention includes a pair of substantially identical generally parallel longitudinal plates 20 which are spaced from, on opposite sides of and generally parallel to the axis of the axle 14. The plates have longitudinal edge portions 22 engageable with the interior of the paint applying sleeve 18 for rigidly supporting the sleeve generally in the planes of the plates. A longitudinal rib 24 is molded integrally with the plates 20 and are disposed on the outsides thereof generally parallel to the axle 14. The ribs 24 protrude generally radially outwardly from the axle and plates a distance sufficient to provide longitudinal edges 26 providing rigid edge support for the interior of the paint applying sleeve 18 generally in the plane of the ribs 24, at right angles to the plates 20. Thus, it can be seen that the plates 20 and ribs 24 provide longitudinal edge supports for the paint applying sleeve. However the plates 20 can flex toward and away from each other generally about the edge junctures 27 with the ribs 24 generally in the directions of arrows X (FIG. 2).

The edge portions 22 of the plates and the edge portions 26 of the ribs are slightly curved or chamfered as seen best in FIG. 2. The core structure 16 is journaled on the axle 14 by means of a pair of interior webs, generally designated 28, and a pair of end webs, generally designated 30, all of which are molded integrally with and extending between the plates 20. The webs 30 are provided with full cylindrical journal portions 32 for embracing the axle 14. The webs 28 are provided with offset pairs of semi-cylindrical portions 34a and 34b for disposition about the axle 14. Either one of the configurations of webs 28 or 30 provide configurations to permit molding dies to be separated in the direction of arrows B (FIG. 2).

A pair of end discs, generally designated 36a and 36b, are molded integrally with and at the ends of the plates 20. The end discs 36a, 36b have diameters to provide peripheral circular support for the interior of the paint applying sleeve 18, as at 38 in FIG. 3. The end discs facilitate sealing the interior of the core from the seepage thereinto of paint.

The end disc 37b which is disposed at the free end of the axle 14 is recessed, as at 40, to provide an interior area for accommodating appropriate securing means between the core and axle. A removable end cap, generally designated 42, is provided to cover the recess 40 by snapping over a shoulder 44 of the end disc 36b, to prevent the seepage into the recess of paint.

The ribs 24 are interrupted and the plates 20 are reduced in size generally in the areas designated by arrows C. This permits limited inward flexing of the plates in the plane of the ribs 24. The plates are reduced in size at areas C, but they remain higher than the interior webs 28.

The foregoing detailed description has been given for clearness of understanding only and no unnecessary limitations should be understood therefrom as some modifications will be obvious to those skilled in the art.

I claim:

1. In a paint roller having a handle and an axle disposed at generally right angles with respect to the handle, a core structure rotatably mounted on said axle for axially receiving a cylindrical paint applying sleeve, said core structure being integrally molded and including a pair of generally parallel longitudinal plates spaced from, on opposite sides of and generally parallel to the axis of said axle, said plates being engageable along the edges thereof with the interior of said paint applying sleeve for rigidly supporting the sleeve generally in the planes of said plates but having flexibility at least at their edges generally in a direction transverse to said planes, and journal means between said plates for rotatably mounting the core on said axle.

2. The paint roller of claim 1 wherein said journal means is formed on a plurality of longitudinally spaced webs extending between and molded integrally with said plates.

3. The paint roller of claim 1 including a longitudinal rib molded integrally with and protruding generally transversely of the plane of each of said plates.

4. The paint roller of claim 3 wherein said longitudinal ribs extend generally parallel to said axle and protrude generally radially outwardly therefrom and from said plates a distance sufficient to engage and provide rigid edge support for the interior of said paint applying sleeve generally in the planes of said ribs.

5. The paint roller of claim 3 wherein said journal means is formed on a plurality of longitudinally spaced webs extending between and molded integrally with said plates.

6. The paint roller of claim 1 including a pair of end discs molded integrally with and at the ends of said plates, said end discs having a diameter to provide pe-

ripheral circular support with the interior of said paint applying sleeve generally at the ends thereof.

7. The paint roller of claim 6 wherein the end disc at the free end of said axle is recessed to provide an interior area for accommodating appropriate securing means between the core and axle, and including a removable cap for covering said end recess.

8. The paint roller of claim 1 wherein said generally parallel plates are generally of the same width and are disposed in planes generally equidistant from the axis of said axle.

9. In a paint roller having a handle and an axle disposed at generally right angles with respect to the handle, a core structure rotatably mounted on said axle for axially receiving a cylindrical paint applying sleeve, said core structure being integrally molded and including a pair of generally parallel plates spaced equidistant from, on opposite sides of and generally parallel to the axis of said axle, said plates being of substantially the same width and engageable along the edges thereof with the interior of said paint applying sleeve for rigidly supporting the sleeve generally in the planes of said plates, a longitudinal rib molded integrally with each of said plates and protruding generally radially outwardly therefrom a distance sufficient to engage and provide rigid edge support for the interior of said paint applying sleeve, with said plates having flexibility at least at their edges generally about the juncture of the plates and ribs, and journal means between said plates for rotatably mounting the core on said axle, said journal means being formed on a plurality of longitudinally spaced webs extending between and molded integrally with said plates.

10. The paint roller of claim 9 including a pair of end discs molded integrally with and at the ends of said plates, said end discs having a diameter to provide peripheral circular support with the interior of said paint applying sleeve generally at the ends thereof.

11. The paint roller of claim 10 wherein the end disc at the free end of said axle is recessed to provide an interior area for accommodating appropriate securing means between the core and axle, and including a removable cap for covering said end recess.

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