

Oct. 14, 1969

D. D. SLOAN

3,472,364

CONTAINER FOR ROLL OF SHEET MATERIAL

Filed Dec. 21, 1966

2 Sheets-Sheet 1

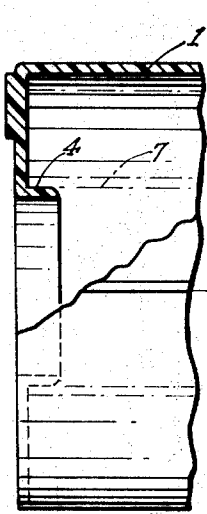


Fig. 1

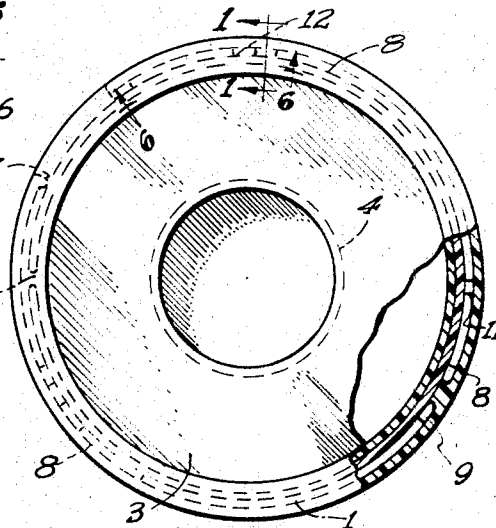
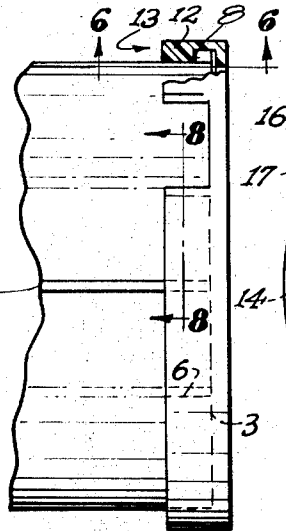


Fig. 2

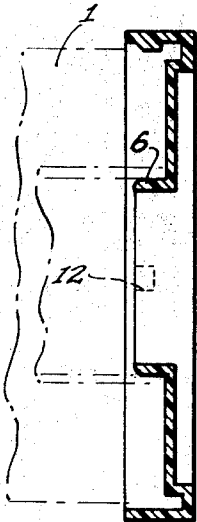


Fig. 5

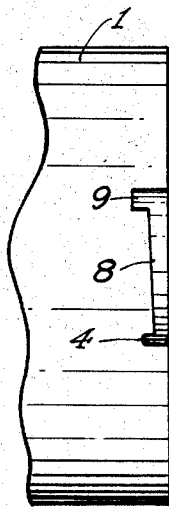


Fig. 4

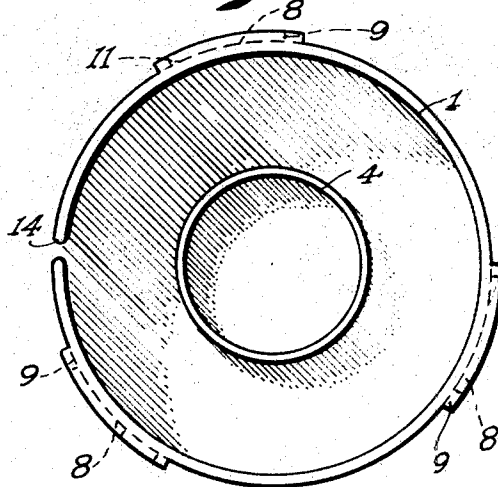


Fig. 3

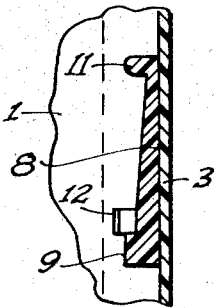


Fig. 6

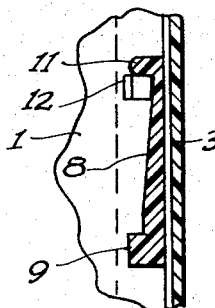


Fig. 7

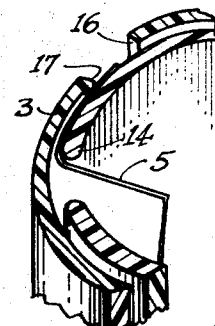


Fig. 8

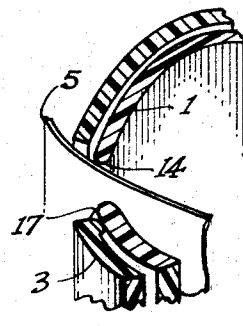


Fig. 9

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2 Sheets-Sheet 2

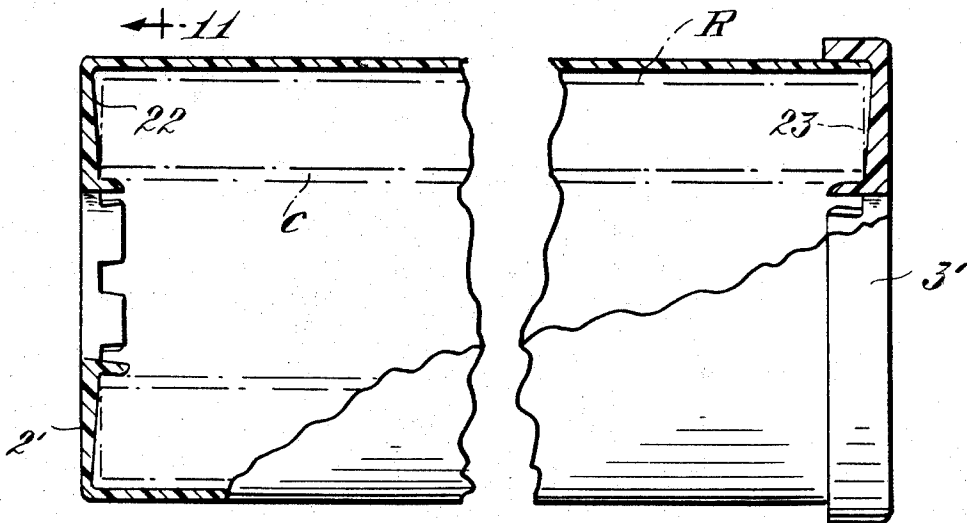


Fig. 10

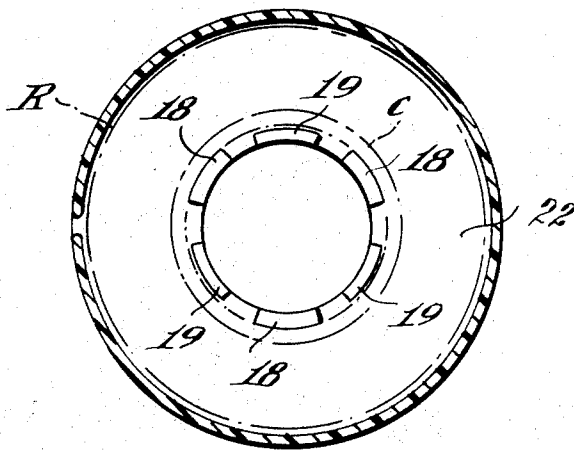


Fig. 11

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**CONTAINER FOR ROLL OF SHEET MATERIAL**  
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Continuation-in-part of application Ser. No. 586,145, Oct. 12, 1966. This application Dec. 21, 1966, Ser. No. 609,983

Int. Cl. B65d 85/67; B65h 75/02, 19/00

U.S. Cl. 206—52

3 Claims

### ABSTRACT OF THE DISCLOSURE

A cylindrical container for a roll of sheet material having a slot in its periphery through which the material may be dispensed and comprising means for locking the roll against endwise movement in the container, means for preventing the end of the material projecting through the slot from accidentally withdrawing into the container, and means for frictionally retarding rotation of the roll.

This is a continuation-in-part of application Ser. No. 586,145, filed Oct. 12, 1966, now abandoned.

This invention relates to containers for rolls of sheet material such as paper coated for electrostatic recording and other heavy material which might damage the containers if free to shift back and forth in shipment, and particularly to a container in which the outer end of the roll projects through a slot in the periphery of the container for ready withdrawal of lengths of the material as needed.

Objects of the invention are to provide a container in which the roll can be clamped in place during shipment and then unclamped for use, in which the projecting end of the material can be held against accidental withdrawal into the container, and to provide a container which is simple and economical to produce, durable and reliable in use, in which the roll can be clamped and unclamped quickly and easily, and in which the projecting end is held as aforesaid when the roll is clamped in fixed position.

In one aspect this invention involves a container having a cylindrical wall and two ends, one end comprising a cap telescoping with said wall, a hub on each of said ends fitting in said opening, and cam means on said cap and wall for clamping the roll between said ends by turning the cap from unclamped to clamped position. Preferably said means comprises cams distributor around said wall and cam followers on said cap, the cap is flexible so that said followers can snap over the said cams, the container has means to stop turning of the cap when it reaches said unclamped position and means to stop turning of the cap when turned toward clamped position. In the preferred embodiment the roll extends into the cap and said wall and cap have longitudinal slots which register when the cap is in unclamped position so that the material may be pulled out through the slots but do not register when the cap is turned to clamped position, the clearance between cap and wall being small so that the end of the material projecting through the slots is held between cap and wall when the cap is turned to clamped position.

In another aspect at least one of the hubs comprises an elastic part which is expandable against the inner periphery of the roll, which may comprise a cylindrical core, to brake rotation of the roll. Preferably the hub comprises one or more elastic fingers extending axially of the container and in the preferred embodiment recurrent fingers have their outer surfaces disposed farther from the axis of the container than the outer surfaces of intermediate fingers so that the outer fingers are flexed more than the inner fingers.

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In still another aspect the inner surfaces of the aforesaid ends flare outwardly to provide increased clearance for the edge of the sheet material from the hubs outwardly.

5 For the purpose of illustration a typical embodiment is shown in the accompanying drawings in which:

FIG. 1 is a side view with parts broken away;

FIG. 2 is an end view with parts broken away;

10 FIG. 3 is an end view of the container with cap removed;

FIG. 4 is a side view of the open end of the container;

FIG. 5 is a section of the cap with the container and roll core shown in broken lines;

15 FIG. 6 is a section on line 6—6 of FIGS. 1 and 2 showing the cap in clamped position;

FIG. 7 is a similar view showing the cap in unclamped position;

20 FIG. 8 is an isometric section on line 8—8 of FIG. 1 showing the cap in clamped position;

FIG. 9 is a similar view showing the cap in unclamped position;

FIG. 10 is a side elevation partly broken away showing a modification; and

25 FIG. 11 is a section on line 11—11 of FIG. 10.

The particular embodiment of the invention shown for the purpose of illustration comprises a cylindrical wall 1 having an integral end 2 and an open end closed by a cap 3 which telescopes over the cylindrical wall. The end 2 and cap 3 have hubs 4 and 6 fitting into a core 7 of a roll of sheet material. At its open end the container has three cams 8 on its periphery with stops 9 and 11 at the opposite ends of each cam. The cap 3 has three cam followers 12 slidable over cams 8 between the stops 9 and 11. The cap 3 is made of flexible material so that the followers can snap over the cams when the cap is telescoped over the container and as shown in FIG. 1 the inner sides 13 of the followers are beveled to facilitate telescoping. The container 1 has a longitudinal slot 14 and the cap has a slot 16 through which the outer end of the roll of sheet material may be pulled.

After the cap is snapped on the container it may be turned from the unclamped position in which the followers 12 engage the stops 11 to the clamped position in which the roll of sheet material is clamped between the two ends of the container so that it cannot unroll accidentally and so that it cannot shift in shipment.

In the unclamped position of the cap the slots 14 and 16 register so that the sheet material may be pulled out of the container, but in the clamped position the slots do not register. The clearance between the inner periphery of the caps and the outer periphery of the container is less than the thickness of the sheet material so that, in the clamped position of the cap, the projecting end of the sheet material is pinched between cap and container so that it cannot withdraw accidentally into the container. As shown in FIGS. 2, 8 and 9 the cap may have a rib 17 along one edge of the slot 16 to pinch the sheet material more securely.

The modification shown in FIGS. 10 and 11 is like the embodiment shown in FIGS. 1 to 9 except in the following respects. The hubs corresponding to 4 and 6 are bifurcated to provide fingers 18 and 19 which are staggered radially so that the outer fingers 18 are flexed more than the inner fingers by the core C of the roll R of paper or other material. By making the container and cap of resilient material, such as polystyrene for example, the fingers are elastic, and by making the radii of the outer surfaces of the fingers 18 slightly greater than the radius of the core C, the fingers yieldingly engage the core and brake the rotation of the roll while unwinding. Also the

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inner surfaces 22 and 23 of the end 2' and cap 3' flare outwardly to provide increased clearance for the edges of the paper from the hubs outwardly. Thus if the paper shifts edgewise more at the outer periphery of the roll than at the inner periphery, as it tends to do, there is less tendency for the edges to rub on the ends of the container.

I claim:

1. For holding a roll of sheet material having an axial opening, a container having a cylindrical wall and two ends, one end comprising a cap telescoping with said wall, a hub on each of said ends fitting in said opening, and cam means on said cap and wall for clamping the roll between said ends, said cam means having a surface which inclines axially of the roll to draw said ends together by turning the cap from unclamped to clamped position, said means comprises cams distributed around said wall and cam followers on said cap, the cap being flexible so that said followers can snap over the said cams.

2. A container according to claim 1 characterized by means to stop turning of the cap when it reaches said unclamped position.

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3. A container according to claim 2 further characterized by means to stop turning of the cap when turned toward said clamped position.

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GEORGE F. MAUTZ, Primary Examiner

U.S. Cl. X.R.

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