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H. C. METTER

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CORD TAKE-UP REEL

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Fig. 1.

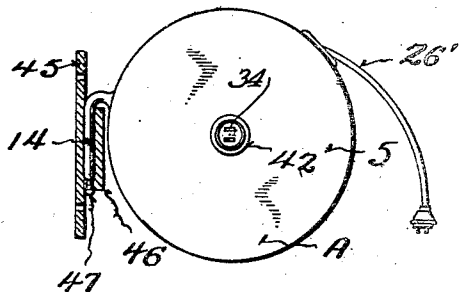


Fig. 2.

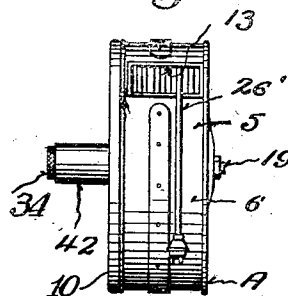


Fig. 3.

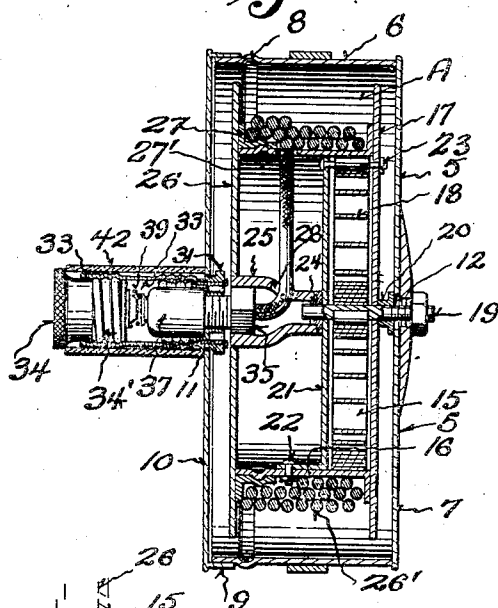
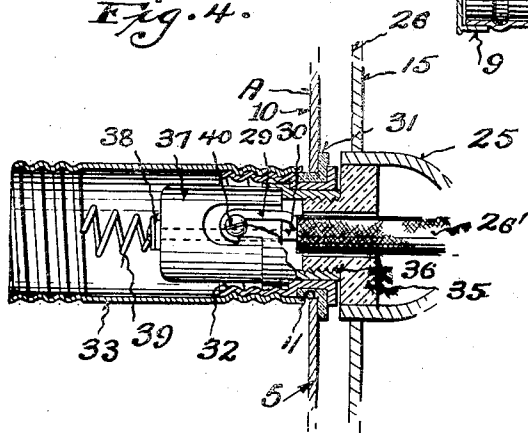


Fig. 4.



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CORD TAKE-UP REEL

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2 Claims. (Cl. 173-367)

This invention pertains to electrical appliances, and more particularly to an electric cord take-up for general usage, but particularly susceptible for use in connection with the cords of vacuum cleaners.

Considerable difficulty is experienced by housewives during the use of vacuum cleaners, in view of the fact that a long length of cord is necessary to reach from the outlet to the cleaner. This cord not only tends to kink, but also obstructs the movement of the cleaner.

It is therefore one of the primary objects of my invention to provide a novel cord take-up reel, which can be detachably connected with a wall or other support adjacent to the outlet, and which will effectively function to automatically take up any slack in the cord during the movement of the cleaner over a room.

Another salient object of my invention is to provide novel means for constructing the cord take-up, whereby the same will effectively function under all conditions, and which is practically fool-proof, thereby rendering the same particularly adaptable for housework.

A further object of my invention is the provision of means for constructing the take-up reel so that the same can be readily and easily taken apart to permit replacement of any worn or broken parts, such as the main take-up spring.

A further object of my invention is the provision of novel means of transmitting the current from the house outlet plug to the cord of the vacuum cleaner, whereby all complicated brushes and the like will be eliminated, and whereby the current is effectively conducted through the bearing of the reel itself.

A still further object of my invention is to provide an automatic cord take-up of the above character, which will be durable and efficient in use, one that will be simple and easy to manufacture, and one which can be placed upon the market at an exceptionally low cost.

With these and other objects in view, the invention consists in the novel construction, arrangement, and formation of parts, as will be hereinafter more specifically described, claimed, and illustrated in the accompanying drawing, in which drawing:—

Figure 1 is a side elevation of my improved take-up reel, showing the same attached to a wall bracket, the wall bracket being shown in section.

Figure 2 is an end elevation of my improved cord take-up reel.

Figure 3 is a diametric section through the complete cord take-up, the view being taken on an enlarged scale.

Figure 4 is an enlarged detail sectional view, illustrating the construction of the novel bearing

for the drum, and also illustrating the current transmission means carried thereby.

Referring to the drawing in detail, wherein similar reference characters designate corresponding parts throughout the several views, the letter A generally indicates my improved automatic electric cord take-up, which comprises a stationary casing 5 and a rotatable drum 15. The casing 5 includes a cylindrical side wall 6 and a stationary end plate 7. This end plate 7 can be formed on, or secured to, the side wall 6 in any desired manner. Adjacent to the free edge of the side wall 6 the same is provided with an out-struck reinforcing and stop bead 8, against which is adapted to fit the flange 9 of the removable end wall 10. This removable end wall 10 is provided with an enlarged axial bearing opening 11, for a purpose which will be later set forth. The end wall 7 can also be provided with an axial opening 12. The removable end wall 10 can be detachably secured to the side wall 6 in any preferred manner.

Rigidly secured to the side wall 6 is a supporting hook 14, the purpose of which will also be later set forth. This hook can be connected to the side wall in any desired manner, and if preferred the same can be carried by a reinforcing metallic strap, which can partially encircle the said side wall and thus act as a reinforcing therefor.

The rotatable reel or drum 15 is of novel construction, and the same includes an annular body 16 rigidly connected with a disc-shaped end plate 17. The interior of the drum forms a housing for the main take-up spring 18. This spring is fitted against the end plate 17 and has its inner end anchored to a stationary supporting stub shaft 19. This stub shaft 19 is rigidly anchored to the side wall 7, and is held against turning movement thereby in any preferred manner. As shown, the shaft 19 carries a bearing 20, which is fitted within a bearing opening formed in the axial center of the end plate 17.

Fitted within the drum 15 is a supporting plate 21, and this plate is detachably held in position by the use of fastening screws 22 and 23. The fastening screw 23 is also employed for rigidly securing the outer end of the spring 18 to the reel. Consequently turning movement of the reel or drum in one direction is resisted by said spring. The plate 21 is provided with an axial bearing opening for receiving the inner end of the stub shaft 19, and this stub shaft can carry a second bearing 24 for reception within a bearing sleeve 25. The bearing sleeve 25 is rigidly carried by the end plate 26 of the reel or drum. This end plate 26 is detachably connected with the body portion 16 of the drum so that access can be had to the interior of the drum when it is necessary to replace the spring. Any desired

means can be employed for detachably securing the end plate 26 in place, and, as shown, the inner face of this plate 26 carries a flange 27 which is adapted to be connected with the body 16 through the medium of relatively short, coarse threads.

From the description so far, it can be seen that the reel is freely supported by the stub shaft for rotation within the casing. Wound upon the reel or drum 15 is the desired length of cord 26' for the vacuum cleaner, or other electrical appliance. The outer end of the cord is fed through a transversely extending opening 13 formed in the cylindrical side wall 6 of the casing. The inner end of the cord is fed through the opening 27' formed in the body portion of the drum, and through an opening 28 formed in the bearing sleeve 25.

The feed and return wires 29 and 30 of said cord are connected in a novel manner to an outlet plug, as will be later set forth.

The sleeve 25 is rigidly anchored to the axial center of the removable end plate 26 of the drum and opens outwardly through said end plate and axially aligns with the opening 11 in the removable end wall 10 of the casing. Fitted within the opening 11 against turning movement is an annular, flanged ring 31. This ring 31 is formed of insulation material and rigidly supports the electric contact shell 32. The shell 32 has formed therein the usual threads for receiving the threaded connecting shell 33. As clearly shown in Figure 4, both ends of the shell 33 are provided with threads so that an ordinary electric socket 34 can be threaded into the outer end thereof.

Detachably anchored in the bearing sleeve 25 is a plug of insulation 35. This plug of insulation is connected by means of threads to an electric conducting metallic sleeve 36. This sleeve 36 is in turn anchored to and carries the porcelain body 37 of the plug. The wire 30 extends through the porcelain body 37 and is anchored to a conductor bolt 38, and this bolt 38 also supports an electrical conducting expansion spring 39. The wire 29 is anchored to the metallic sleeve 36 through the medium of a screw 40. By referring to Figure 4 of the drawing it can be seen that the conductor sleeve 36 rotatably supports the contact shell 32, and thus the sleeve 36 is freely rotatable within the shell and makes electrical contact therewith. When the socket 34 is threaded into the connector shell 33, this central contact engages the spring 39 while the connector shell 33 electrically contacts with the usual conductor shell 34' of the socket 34.

In use of my improved device, as the cord 26' is fed off of the drum, the drum is turned against the tension of the spring 18, as heretofore described, and the conductor sleeve 36 rotates within the shell 32. Due to the construction of the spring 39, the spring readily turns on the socket 34. Consequently, electrical connection is assured with the contacts of the said socket. When tension is released on the cord 26', the spring functions to automatically take up the cord and rotate the drum in a retrograde direction.

The connector shell 33 is preferably housed within a sleeve 42 formed of insulating material for safety purposes.

The cord 26' is adapted to be connected to the

vacuum cleaner, or other electrical appliance, while the socket 34 is connected with the house outlet. Preferably a short length of electric cable is employed for this purpose (not shown), and the opposite ends of the cable can be provided respectively with suitable plug connections for fitting within the house outlet and the socket 34.

To relieve the reel from strain, a wall bracket 45 can be provided. This wall bracket can be secured at a convenient point adjacent to the desired house outlet, and the same is provided with a socket 46 for receiving the hook 14 on the casing of the reel. To prevent accidental displacement of the hook 14 from this socket 46, the socket can be provided with an adjusting screw 47, which is adapted to be threaded into the lower end of the hook.

From the foregoing description, it can be seen that I have provided an exceptionally simple and durable take-up reel for electric cords of various kinds of electric appliances. Changes in details may be made without departing from the spirit or scope of this invention, but what I claim as new is:—

1. A take-up reel for electric cords comprising a casing, a spring-controlled drum rotatably mounted within the casing, an electric cord wound upon said drum and having its outer end disposed exteriorly of its casing and its inner end disposed interiorly of the drum, an electric fitting carried by the axial center of the casing, said fitting including a stationary connector shell secured to the casing for the reception of an electric socket, a conductor sleeve rotatably fitted within the connector shell and having electrical contact therewith and rotatable with the reel, a porcelain body secured to the conductor sleeve having an axially disposed spring contact for engaging the center contact of the socket fitted in the connector shell, the wires of said electric cord being connected respectively to the contact sleeve and to the axially disposed spring contact.

2. A take-up reel for electric cords comprising a casing, means for suspending the casing from a support, a spring-controlled drum rotatably mounted within said casing, an electric cord wound upon said drum having its outer end disposed exteriorly of the drum and casing and its inner end disposed interiorly of said drum, an electric fitting carried by the axial center of the casing including an insulator ring non-rotatably secured to the casing, an electric contact shell non-rotatably secured to said insulator ring, a connector shell detachably fitted on the contact shell and having electrical contact therewith, an electric socket threaded into said connecting shell having a center contact and a side connector shell electrically engaging the first-mentioned connector shell, an insulator body carried by the axial center of said drum and rotatable therewith, a conducting sleeve fitted upon the insulator body and rotatably mounted within the contact shell and having electric contact therewith, a resilient electrical contact carried by the insulator body and engaging the center contact of the socket, the feed and return wires of the inner end of said cord being electrically connected respectively to the resilient contact of the insulator and to said conductor sleeve.

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