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APPLIANCE FOR UNWINDING PACK THREAD OR THE LIKE

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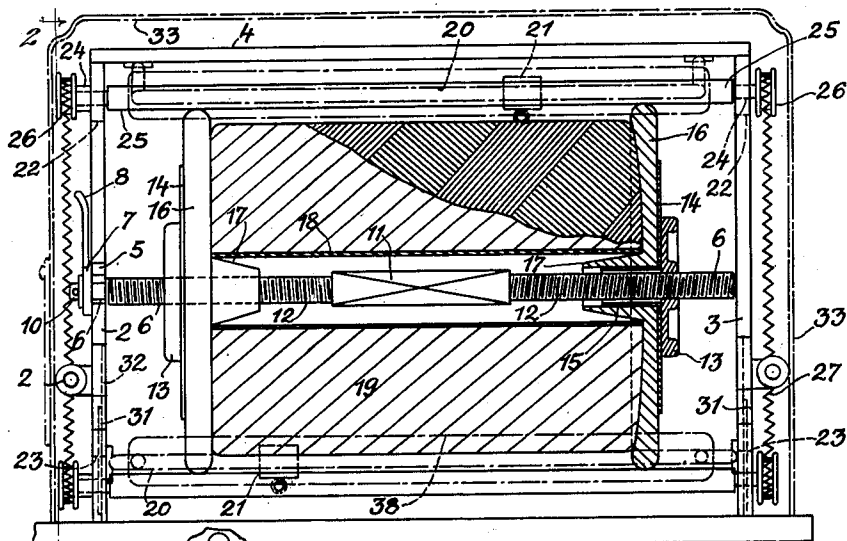


Fig. 1.

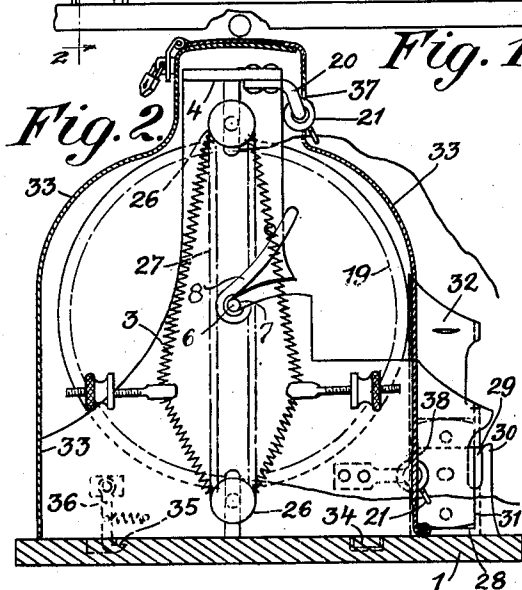


Fig. 2.

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APPLIANCE FOR UNWINDING PACK
THREAD OR THE LIKE

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2 Claims. (Cl. 242—146)

This invention relates to an appliance for unwinding pack thread, by means of which rolls or spools of pack thread of different lengths can easily be unwound from the beginning right to the end, and can be braked with a constant braking force. According to the invention the appliance comprises a frame, a shaft rotatably supported in the frame and adapted to hold the spool of pack thread, two discs mounted on the said shaft, a pair of rotatably mounted cylinders bearing upon the peripheries of the discs, a pulley at each end of each of the cylinders, two endless helical springs, each passing around the two pulleys at one end of the cylinders, the said springs pressing the cylinders into contact with the peripheries of the discs and being adapted to exert thereby a constant braking pressure to prevent excessive unwinding of the pack thread, and means for adjusting the stress in the said springs.

The apparatus is preferably so constructed that it can be used either as a table appliance, a suspended appliance or an appliance fitted to a wall, and will work equally well in any of these positions.

In the drawing—

Figure 1 is a longitudinal sectional elevation of the first constructional form,

Figure 2 is a section on the line 2—2 of Figure 1.

To a base board 1 is secured a supporting frame 2 consisting of two side members 2 and 3 and a top bar 4. The side member 2 is formed with a slot 5 open in the front for the suspension of one end of a carrying shaft 6, the other end of which is inserted in a hole in the side member 3. In a cylindrical expansion of the slot 5 is rotatably supported a sleeve 7 provided with a longitudinal slot 6' and with a hand lever 8. By rotating the sleeves 7 into the position shown in dot and dash lines in Figure 3 the slot 5 in the side member 2 can be closed, and the shaft 6 thereby prevented from dropping out in any position of the apparatus. Pins 9 limit the deflection of the hand lever 8. A split pin 10 at the left hand end and a stepped portion at the right hand end of the carrying shaft 6 prevent lateral displacement of the latter.

The shaft 6 has a prismatic centre portion 11, and its outer portions 12 are provided with right-handed and left-handed screw-threads, upon which there are screwed wing nuts 13. Between these nuts pressure discs 16, which are formed with axial apertures and each equipped with a metal plate 14 provided with a hub 15, are mounted loose upon the shaft 6. The discs 16 have concave internal surfaces and may be of wood. Upon

each hub 15 is mounted loose an exchangeable cone 17, over which the central sleeve 18 of a spool of pack thread 19 fits. By tightening the nuts 13, the sleeve 18 is forced on to the cones 17, and the spool 19 is pressed between the discs 16, as a result of which, during the unwinding of the pack thread, the latter is prevented from slipping in between the spool and the discs.

The cones 17 enable spools with sleeves 18 of different diameters to be gripped. It is also possible, by adjusting the discs 16, the cones 17 and the nuts 13, to grip spools of different lengths.

To the top bar 4 is secured a guiding wire 20 for a thread guide 21, through the eye of which the pack thread leaving the spool runs. A similar thread guide wire 20 and thread guide 21 are also secured to the lower parts of the frame members 2 and 3, in order also to enable the pack thread to be unwound from the under side of the spool if desired.

Each side member 2 and 3 is formed with two vertical slots 22 and 23 in the same plane, in which the journals 24 of two loose brake cylinders 25 bearing upon the peripheries of the discs 16 are adjustably guided. The ends of the cylinder spindles 24 carry rollers or pulleys 26. Round the pulleys on the same side is passed an endless helical spring 27, by which the cylinders 25 are pressed against the peripheries of the discs 16 and thus exert a braking action upon the discs 16 as the pack thread is being pulled off, so that the unwinding of an excess of pack thread is prevented. Since the cylinders 25 rotate, the unwinding of the pack thread takes place quite easily. It is obvious that the braking effect will always be the same, whether the spool diameter is great or small. Since the braking acts with considerable leverage it is very effective so that no excess pack thread comes unwound. If desired, the spring tension may be made adjustable.

Each of the frame side members 2 and 3 has on the inner side a recess 28 for the reception of a razor blade 29 for cutting off the unwound pack thread. The edge of this blade projects somewhat beyond an open marginal slot 30 in the side member, so that the pack thread introduced into the slot 30 can easily be cut off by pressing it against the razor blade. In a guide 31 on each of the side members 2 and 3 is slidably mounted a member 32 which holds the blade fast and which is provided with a marginal notch.

The apparatus as a whole is preferably covered with a two-part protective hood or cover 33, the two parts being adapted to be fastened to one another and to the base plate 1 by means of a

lug 34 and a spring pawl 36 which engages in a recess 35 in the base board 1, is supported on the cover, and can be actuated from the outside. The cover is provided with slots 37 and 38 for the passage of the thread guide rods 20, and leaves the parts of the side members 2 and 3 that receive the cutting blades 29 exposed.

The pressure discs 16 may alternatively be provided directly with screw threads, in which case special wing nuts 13 are omitted.

The lower thread guide wire may if desired be secured to the base board.

What I claim is:—

1. In a device for unwinding thread from a spool the combination of a frame, a shaft rotatably supported by the frame, two pressure discs rotatably mounted on the shaft at each end of

the spool, means to press the pressure discs against the spool, two cylinders rotatably and slidably supported by the frame bearing on the periphery of the pressure discs, pulleys at the ends of the two cylinders, endless helical springs trained around the pulleys to yieldably hold the cylinders in position against the pressure discs to prevent excessive unwinding of the pack thread.

2. A device as claimed in claim 1. in which the means for pressing the pressure discs against the spool is provided for by a shaft having right-handed and left-handed screw threads, two wing nuts which are screwed onto the shaft, and two pressure discs provided with hubs in order to grip the spool when the wing nuts are screwed toward the spool.

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