Oct. 28, 1952 C. P. DYKEN 2,615,290

CORD INSERTING DEVICE

Filed May 2, 1950 2 SHEETS—SHEET 1

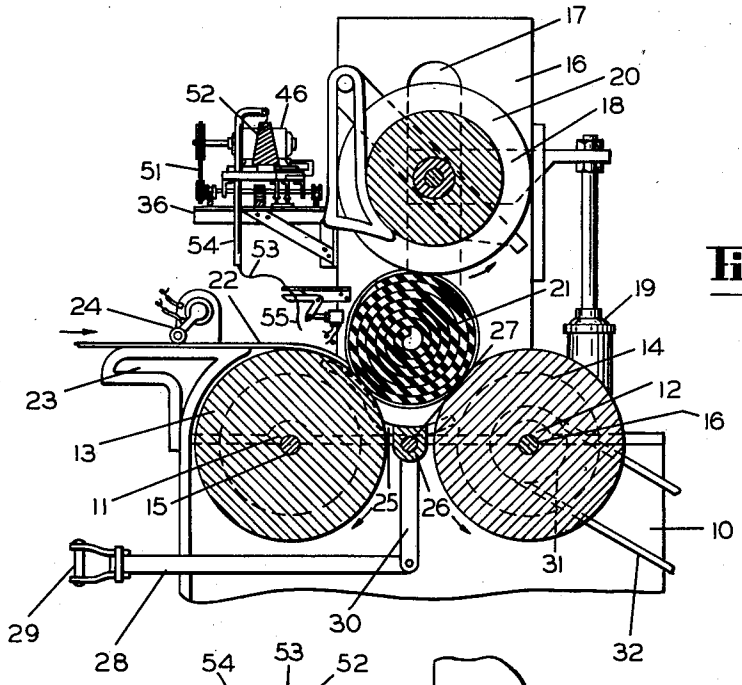


Fig. 1

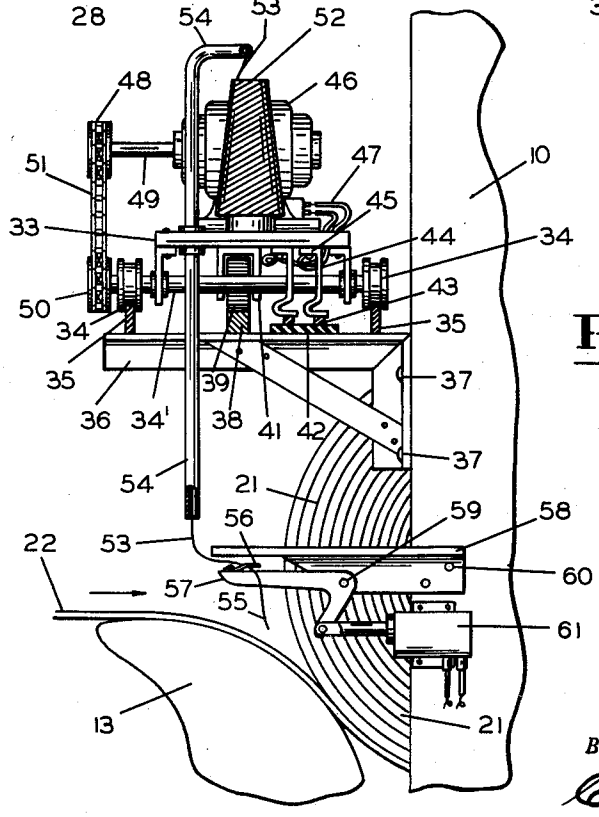


Fig. 2

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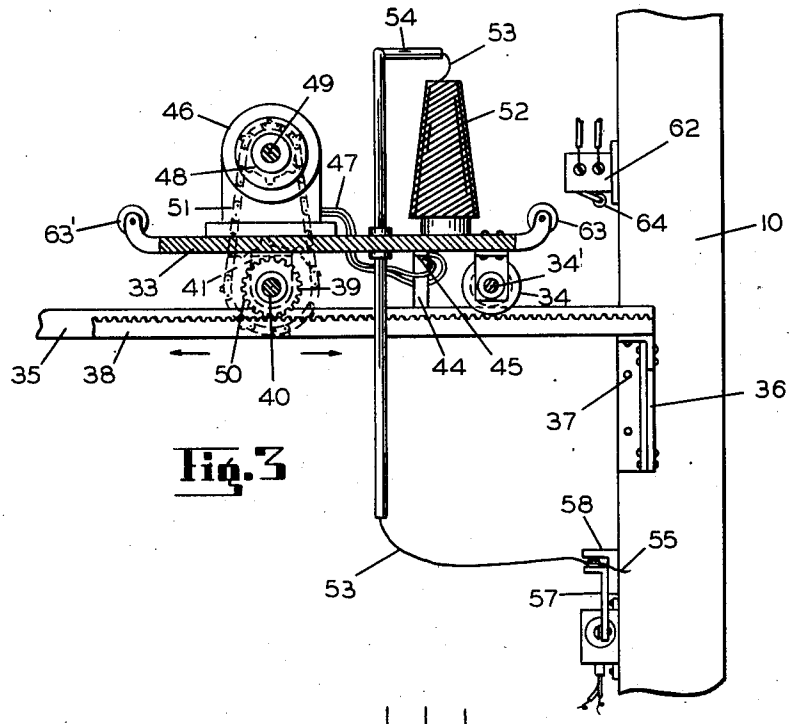


Fig. 3

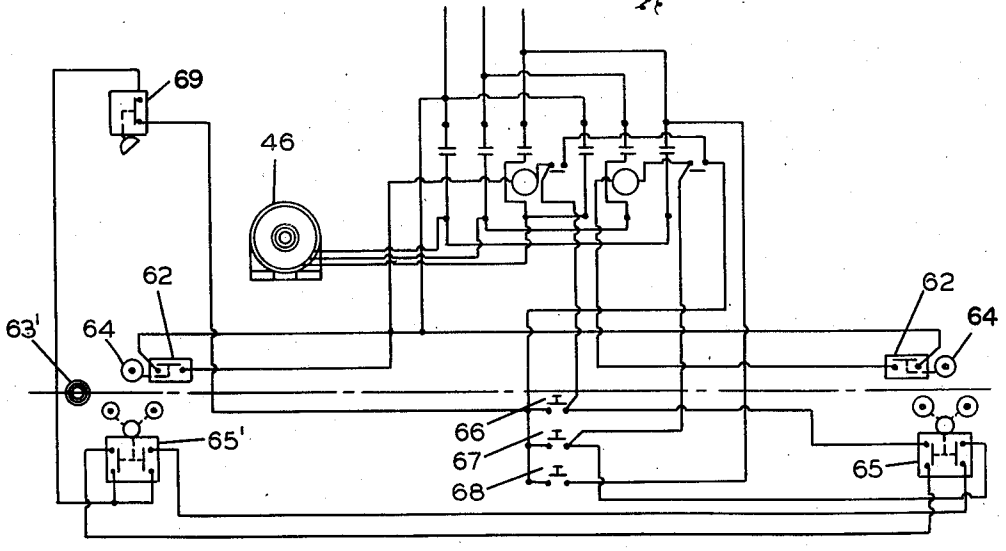


Fig. 4

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CORD INSERTING DEVICE

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3 Claims. (Cl. 53—51)

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My invention relates to cord inserting devices and more particularly to a device employed for inserting a cord under a sheet of paper which encircles the outer periphery of a rolled article such as a rug or the like.

An object of my invention is to provide a device that may be used in combination with a rolling machine such as described in my Patent No. 2,215,174 and my application for Patent Serial No. 777,754, dated October 3, 1947, now Patent No. 2,573,188 dated October 30, 1951.

Another object of my invention is to provide a device that will convey the cord from one end of the package to the other, during the process of rolling the wrapper around the object being rolled.

It is common practice in industry to insert a cord below the wrapper such as paper or the like which encircles the article such as magazines, linoleum, rugs or the like so that the wrapper may be cut or severed when the cord is pulled outward at one end at right angle, away from the periphery of the wrapped article. Obviously, it is now possible to wrap a sheet of paper around a rolled object mechanically, and the device described herein may be made an accessory to such a mechanical rolling means thereby eliminating the laborious operation of manually applying the cord in position before the wrapper is sealed at its open longitudinal edge.

The device illustrated, specified and claimed herein is a complete unit adaptable for installing onto a rolling or wrapping unit. It is simple in construction and operation and highly efficient for the purpose intended.

Other and further objects of my invention will become more apparent as the description proceeds when taken in combination with the drawing in which:

Figure 1 is a fragmentary cross-sectional view of a rolling machine showing the cord-inserting device which constitutes my invention, attached to the forward or loading end of the machine.

Figure 2 is an enlarged end view of the cord inserting device, attached to a rolling machine.

Figure 3 is a front elevation of the cord inserting device as shown in Figures 1 and 2, and

Figure 4 is a diagrammatic layout of the control arrangement of the electric circuit embodied in the device.

Similar characters of reference indicate corresponding parts throughout the several views, and referring now to the same, the character 10 shows a frame which constitutes the support of the rolling machine consisting of bearings 11 and 12 disposed within the frame which support rollers 13 and 14 respectively. These rollers 13 and 14 are mounted on shafts 15 and 16 which shafts are rotatably journalled within the bearings 11 and 12.

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There are upwardly extending side members 16 which form a part of the frame of the machine and these members 16 are provided with slots 17 which act as a guide for the bearing arm 18, which is raised or lowered by hydraulic means shown as 19, consisting of the conventional cylinder and piston assembly. There is a top roller 20 journalled in the bearing 18 which roller contacts the rollers 13 and 14. All of the rollers 13, 14 and 20 comprise a series of discs or plates spaced apart from one another, and the rug shown as 21 is rolled on the outer periphery of these discs on the rollers 13, 14 and 20. The rug 21 is fed toward the roller assembly at 22, across the surface or table member 23, which member is also shown supplied with a counting device 24 which may be either mechanically or electrically actuated.

The fingers 25 are shown pivoted at 26 on a shaft 27 supported by the base 10. This shaft is shown actuated manually by means of a hand lever 28 having a handle 29 extending on its outer depending end and connected by means of a link member 30. The pulley 31 on the shaft 16 is shown supplied with a belt 32 which leads to the actuating means (not shown).

The above description of the assembly of the rolling machine is given, to better describe and illustrate the function and purpose of my invention.

My invention consists of a carriage 33 supported on wheels 34 which are rotatably mounted on the ends of an axle 34' and these wheels engage longitudinal horizontally disposed rails 35 supported by bracket members 36, extending outward from, and attached to the side members 16 of the frame 10 which form a part of the rolling machine. The brackets 36 are attached at 37. There is a gear rack 38 which is horizontally disposed and supported by the same brackets 36 as support the rails 35, and a spur gear 39 is rotatably mounted on a shaft 40 supported by the yoke 41 which is attached to the carriage 33. This gear 39 engages the rack 38 and forms another mounting for the carriage 33.

Disposed longitudinally along the entire length of the device and in parallel relation to the rails 35 and the gear rack 38, is a longitudinal member 42 which is of a non-conducting material and supports a pair of wires 43 which convey the electric current, and a pair of contact shoes 44 slideably engage these wires 43 and are attached at 45 to the carriage 33.

A reversible motor 46 is mounted on the top of the carriage 33 and the wire leads 47 are shown extending from the contact shoes 44 to the motor 46. The motor 46 has a sprocket 48 shown mounted on its shaft 49 and another sprocket 50 is mounted on the shaft 40, and is shown in engagement with the sprocket 49 by means of a drive chain 51.

There is a spool of cord 52 disposed in a vertical manner on top of the carriage 33 and the cord 53 leading therefrom passes through a tubular member 54 which extends downward through the carriage 33, for placing the cord between the wrapper and the object being wrapped and the extreme end 55 of the cord 53 is brought into engagement with a hook member 56 supported by an angular lever 57 pivoted to a bracket 58 at 59, this bracket 58 being attached to both sides of the frame 10 at 60 in any practical or convenient manner. The lever 57 retains the end 55 of the cord and is actuated by means of a solenoid 61 attached to the frame on both sides thereof, and which may be either manually or mechanically controlled.

There are limit switches as indicated at 62 at both sides of the frame 10 for stopping the movement of the carriage 33 rollers 63 and 63' being mounted on the ends of the carriage 33 at both ends, and are placed in direct alignment with the contacts 64 forming a part of the limit switch assembly 62.

In Figure 4, I show a diagrammatic layout of the electric circuit in which the transfer switches are indicated by the character 65 and the push button station for forward is shown as 66, the reverse at 67 and the stop at 68. The one way limit switch 69 is normally open and operates only when the top roll 20 moves upward.

In operation, the device functions as follows: The device is mounted on the rails 35 which are supported by the bracket 36 attached to the frame 10. The carriage 33 is supported by the wheels 34 which engage the rails 35 at one of its ends and by the gear 39 which engages the longitudinal rack 38 which is adjacent to the rails 35. The actuation of the motor 46 by electric current will cause the gear 34 to revolve in either a forward or rearward direction due to the engagement of the sprocket 48 and 50 by means of the chain 51 and the hook member 57 supporting the end 55 of the cord 53 will cause the cord 53 to be pulled through the tubular member 54 from the spool 52. Obviously, the cord is placed along the material being rolled before the wrapper is applied and the movement of the carriage is controlled by the limit switch 62 on each end of the frame 10 thereby actuating the motor to move either forward or reverse. The cord may be cut either manually or mechanically at the end of the package and although I have shown and described a specific structure, I am fully cognizant of the fact that many changes may be made in the arrangement of the component parts without affecting the operativeness of the device and without departing from the scope of the invention or the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent in the United States is:

1. A device of the character described to be mounted to a rolling machine comprising a plurality of longitudinally disposed rollers parallel to one another and rotatably supported by a base, a pair of rails horizontally disposed, said rails supported by said base, and extending in parallel relation to said rollers, a gear rack horizontally disposed supported by said base, in parallel relation to said rail, a movable carriage, said carriage supported on wheels engaging the upper surface of said rails, a gear mounted to said carriage, said gear disposed in engagement with said gear rack, a motor, said motor mounted to said carriage, said gear revolved by said motor, a spool of cord mounted to said carriage, means on said carriage for guiding the cord, means mounted on the opposite ends of said frame for retaining one end of said cord, limit switches supported on both opposite sides of said frame, contact members mounted on both ends of said carriage for engagement with said limit switches, and an electric current supply forming a circuit leading through said limit switches to said motor for actuating said carriage by means of the engagement of the gear with said gear rack.

2. A device of the character described to be used in combination with a rolling machine comprising a plurality of longitudinally disposed rollers parallel to one another and rotatably supported by a frame, said device comprising in combination, a movable carriage, a pair of longitudinal rails, said rails mounted to said frame parallel to said rollers, said carriage supported by said rails, a motor, said motor acting as an actuating means for and mounted on said carriage, a gear rack mounted on said frame in parallel relation to said rail, a gear rotatably mounted to said carriage, said gear engaging said gear rack and actuated by said motor on said carriage, a spool of cord supported by said carriage, means for guiding the cord from said carriage, retaining means mounted on opposite ends of said frame for supporting the end of said cord, a pair of limit switches mounted to said base on opposite ends thereof, contact members on opposite ends of said carriage, said contact members arranged for engagement with said limit switches, and a current supply forming an electric circuit leading through said switches to the actuating means on said carriage.

3. A device of the character described to be used in combination with a rolling machine comprising, a plurality of longitudinally disposed rollers, a frame rotatably supporting said rollers in parallel relation to one another, said device comprising a plurality of horizontal rails supported by said frame in parallel relation to one another and to said rollers, a carriage, said carriage movably mounted on said rails, a motor, said motor mounted on said carriage for actuating said carriage, a spool of cord, said cord supported by said carriage, a source of electric current supply, said motor actuated by said current, limit switches attached to opposite ends of said frame, said limit switches forming a part of the electric circuit leading to said motor, contact means mounted on said carriage for engagement with said limit switches, means attached to the opposite ends of said frame for retaining the ends of said cord leading from said carriage when said carriage is caused to move along said rails, said cord retaining means actuated by and forming a part of said electric current circuit.

CHARLES P. DYKEN.

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