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C. P. DYKEN

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RUG ROLLING DEVICE

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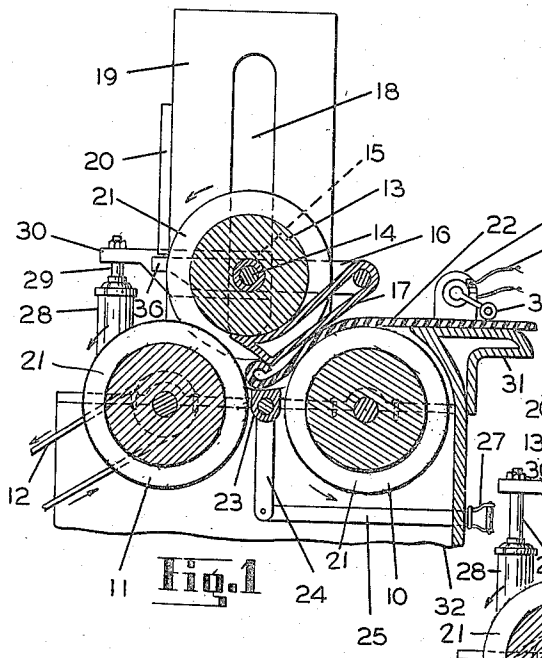


Fig. 1

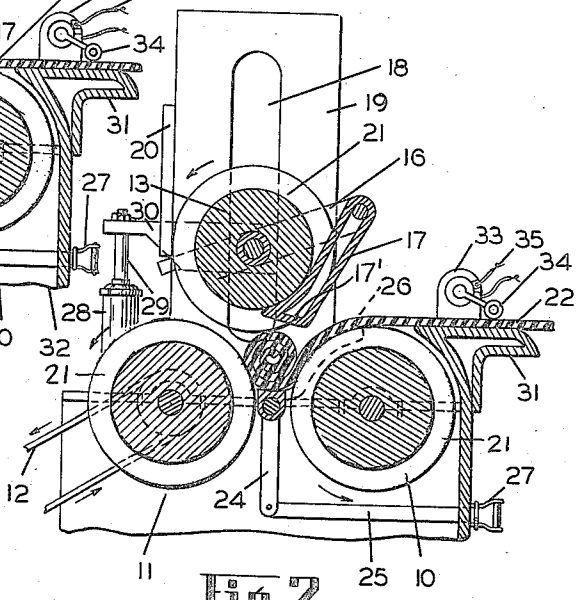


Fig. 2

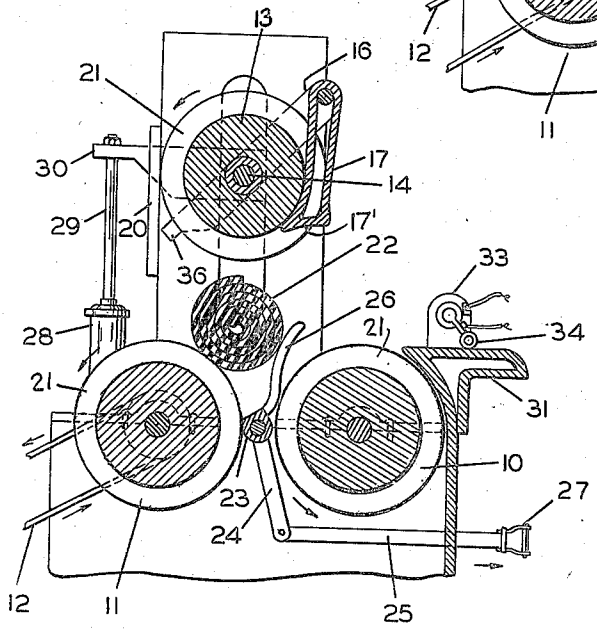


Fig. 3

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RUG ROLLING DEVICE

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1 Claim. (Cl. 242—66)

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My invention relates to rug rolling devices and more particularly to a device that will roll a flat rug or the like without the use of a central core.

An object of my invention is to provide a device that will guide a flat rug or the like in a manner to radially curl its forward end to feed the balance of the rug between rollers to follow the outer periphery of the radial contour of the roll.

Another object of my invention is to provide a device that will guide rugs or the like of various widths in an even straight path during the rolling operation.

A further object of my invention is to provide a device that is equipped with proper facilities to remove the finished roll from the machine before a new roller is started.

A still further object of my invention is to provide a device that is simple in construction, efficient in its operation, economical to manufacture, a device that provides a saving of time, labor and storage space for the finished product.

It is manifest to anyone familiar with the art that a tremendous saving can be obtained by rolling rugs or the like in a manner to eliminate the central core or support member. The device as described herein will eliminate this core and will roll the rug on itself to a compact tight roll, thereby eliminating the danger of fracture or damage, so often encountered in a loosely rolled rug. The tight rolling of the rug will save space, will permit more rugs to be placed within a truck or freight car compartment and will save storage in warehouses.

The operation of the machine is simple and requires no experienced help, and above all eliminates the slow inconvenient process required when a plurality of operators are required to start the rolling of the rug.

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

Figure 1 is a fragmentary cross-sectional view of the device illustrating the arrangement of the various rollers and guides, showing the rug entering the machine and slightly curled at its forward end.

Figure 2 is a similar view of the device as shown in Figure 1, showing the rug rolled to a position where the upper auxiliary roll is in a raised position, and

Figure 3 is a similar cross-sectional view of the device with the auxiliary roller raised above the rug and the rolled rug ready to be discharged from the machine.

Similar characters of reference indicate corresponding parts throughout the several views and referring now to the same, the character 10 would indicate a forwardly disposed roller, the character 11 shows a rearwardly disposed roller which is shown driven by means of a belt

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or the like shown as 12. Obviously, the belt 12 may be driven by means of a motor, not shown, or in any other convenient manner, to make the entire unit a self-contained unit. There is an auxiliary roller 13 shown mounted on a shaft 14 journaled in bearings 15 supported by a lever 16, which lever is integrally attached to a starting cam shown as 17. The starting cam 17 consists of an outwardly extending member 17' which occupies a position within a groove to contact the roller 13 so as to present the lower end thereof in a position to engage the leading edge of a product to be rolled, when the roller 13 is in lowered operative relation with respect to the rollers 10 and 11. The bearings 15 are arranged for vertical movement within a slot 18 disposed within a bearing guide shown as 19 and as the auxiliary roller 13 moves upward, the lever 16 is caused to tip as shown in Figures 2 and 3, carrying the starting cam 17 with it. This tipping is accomplished by means of the guide 20 disposed on the outer edge of the bearing guide 19.

All the rollers 10, 11 and 13 are provided with grooves, thereby producing outwardly extending flanges shown as 21, and these flanges are disposed in staggered relation to one another on the various rollers so that the rug shown as 22 will always be in contact with the outer peripheral surface of the various flanges on the several rollers.

Between the forwardly disposed roller 10 and the rearwardly disposed roller 11, I show a pivoted guide 23 and provided with a downwardly disposed link member 24 which is pivotally attached to a lever 25. This pivoted guide 23 is provided with a plurality of outwardly disposed members shown as 26 in Figure 3, which are placed within the grooves between the flanges 21 on the forwardly disposed roller 10 and when the lever 25 shown provided with a handle 27 is pulled outward, the members 26 will be caused to be raised upward for expelling the rolled rug on the machine due to the radial movement of the rearwardly disposed roller 11.

The bearing 15 within the slot 18 of the bearing guide 19 is raised upward by means of a hydraulic mechanism consisting of a cylinder shown as 28 and having a piston not shown disposed therein, the piston being provided with an outwardly extending rod shown as 29 which is attached to the outwardly extending end of the bearing mounting 30. The purpose of the hydraulic mechanism is to raise the auxiliary roller 13 free from the outer peripheral surface of the rolled rug shown as 22 after the rolling has been accomplished, so as to give free movement of the rolled rug when being expelled from the machine proper.

The front ledge section 31 of the base portion 32 supporting the forward and rearward rollers 10 and 11 respectively is shown provided with an automatic starting and stopping member shown as 33. This mechanism 33 is provided with a

roller 34 which frictionally engages the upper surface of the rug 22 as it is fed into the machine. When the roller 34 is raised due to the thickness of the rug 22, the rollers 10 and 11 are caused to revolve due to the electric contact at the starting and stopping mechanism 33 which has its leads 35 connected to the motor not shown, acting as an actuating means of the entire unit.

After a sufficient quantity of rug has passed below the roller 34 in the starting and stopping mechanism 33 the roller 34 will be caused to drop downward onto the surface of the ledge 31, thereby shutting off the mechanism, at which time the hydraulic mechanism shown as the cylinder 28 is manually started to raise the auxiliary roller 13 above the outer peripheral surface of the rolled rug, and the lever 25 is pulled outward, thereby causing the rug to be placed onto the peripheral surface of the rearwardly disposed driven roller 11, causing the rug 22 to be dispensed from the machine.

In operation it will be noted that the rug 22 is fed onto the surface of the ledge 31 below the roller 34 of the starting mechanism 33. As this roller 34 is raised, the contact is made and the rollers 10 and 11 are caused to revolve, feeding the rug 22 over the peripheral surface of the outwardly extending flanges of the forwardly disposed roller 10 onto the pivoted guide 23 so that the forward edge of the rug 22 will contact the peripheral surface of the flanges on the rearwardly disposed roller 11 and the starting cam 17 being in position as shown in Figure 1 will cause the end of the rug to be brought around into a radial contour as shown in Figure 1, and as the rug keeps on the forward roller 10 it will continue to be rolled by the rearward roller 11 against the surface of the starting cam 17, and as the diameter of the rolled rug 22 increases as shown in Figure 2, the starting cam 17 will be caused to raise to the point 36 of the hinged member 16 contacting the stop member 20 on the bearing guide 19, thereby placing the starting cam 17 out of engagement with the rug 22 and letting the rug 22 be rolled by frictional contact with the outer peripheral surface of all three of the rollers 10, 11 and 13.

When the terminal end of the rug or carpet has passed below the roller 34 of the starting mechanism 33 the roller 34 will be caused to drop down to the surface of the ledge 31, thereby shutting off the actuating means and permitting the operator to actuate the hydraulic mechanism and cylinder 28 so that the auxiliary roller 13 can be raised to a high position as shown in Figure 3, away from the outer peripheral surface of the rolled rug, at which time the operator will expel the rug as shown in Figure 3 by means of the lever 25.

It is manifest to anyone familiar with the art that the device as described is very convenient for rolling a rug into a tight compact roll without requiring the use of a core in the center of the rolled rug. It is also very evident that the arrangement of the rollers in combination with the starting cam 17 cause the forward end of the rug to assume a small radial contour in starting the rolling operation, and as the roll of rug material increases, the auxiliary roller which is a type of floating roller, vertically guided within the slot 18, will be caused to raise upward in its contact with the outer periphery of the rolled rug. The starting and stopping mechanism 33 may be of any conventional design and will make it possible for the operator to insert the rug to start the machine and feed the rug, thereby having it automatically rolled into a tight compact roll which is imperative, for a solid tightly rolled rug is less apt to be fractured or damaged by what is commonly referred to as a "kink." Also the tight rolled rug will take up less storage space than a loosely rolled rug, thereby making it possible to place more rugs within the confines of a truck or freight car. Then too, the storage of the rug will be greatly facilitated due to its compact package when wrapped in paper or the like.

While I show many features not heretofore disclosed in the prior art, and I specifically point out a particular arrangement and contour of the component parts, I am fully cognizant of the fact that many changes in the form and configuration of the parts may be made without effecting their operativeness, and I reserve the right to make such changes as I may deem convenient or necessary without departing from the spirit of my invention or the scope of the appended claim.

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

A device for rolling a flat pliable product on itself comprising in combination a frame, a pair of horizontal rollers journalled within said frame, said rollers having peripheral flanges extended outwardly therefrom, the flanges of said rollers being in direct alignment with one another and spaced apart from one another, a guide pivotally mounted in said frame and positioned between and longitudinally of said rollers, said guide having outwardly extending members disposed between the flanges in one of said rollers, said frame being provided with a pair of upwardly extending bearing supports, each bearing support having a vertical slot, a bearing slidably mounted in each slot, an auxiliary roller having a shaft rotatably journalled in said bearings, said auxiliary roller having outwardly extended peripheral flanges arranged in staggered relation to the flanges of said pair of horizontal rollers and arranged for engagement therebetween, a lever pivotally mounted upon the shaft of the auxiliary roller, a longitudinally extended starting cam mounted on said lever, said starting cam consisting of an outwardly extending member positioned between the flanges and in contacting engagement with said auxiliary roller, the outwardly extending member of said starting cam having the lower end thereof presenting an edge in closely spaced proximity to said guide and between said pair of horizontal rollers for initially engaging the leading edge of the product to be rolled, means for actuating the rollers, and means on said bearing supports for pivotally moving said lever and the starting cam upon a predetermined upward movement of the auxiliary roller.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
605,478	Gibbs et al.	June 14, 1898
1,222,827	Webster	Apr. 17, 1917
1,455,976	Stevens	May 22, 1923
2,215,174	Dyken	Sept. 17, 1940

FOREIGN PATENTS

Number	Country	Date
369,356	Great Britain	Mar. 24, 1932