Nov. 9, 1965 T. ROBERTSHAW 3,216,668

AUTOMATIC SPOOLING MACHINE

Filed June 19, 1963 3 Sheets-Sheet 1

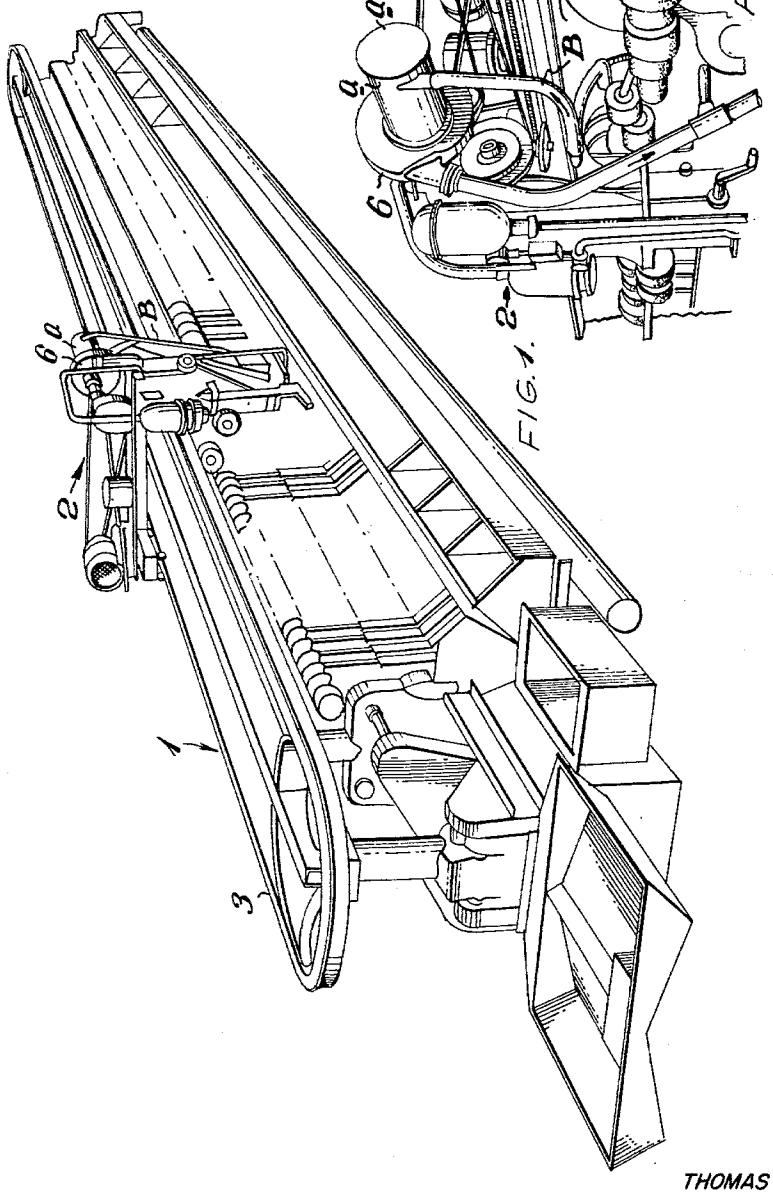


FIG. 1.

FIG. 2.

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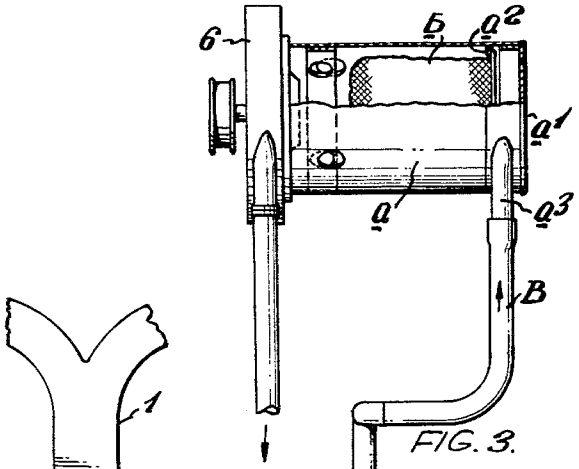


FIG. 3.

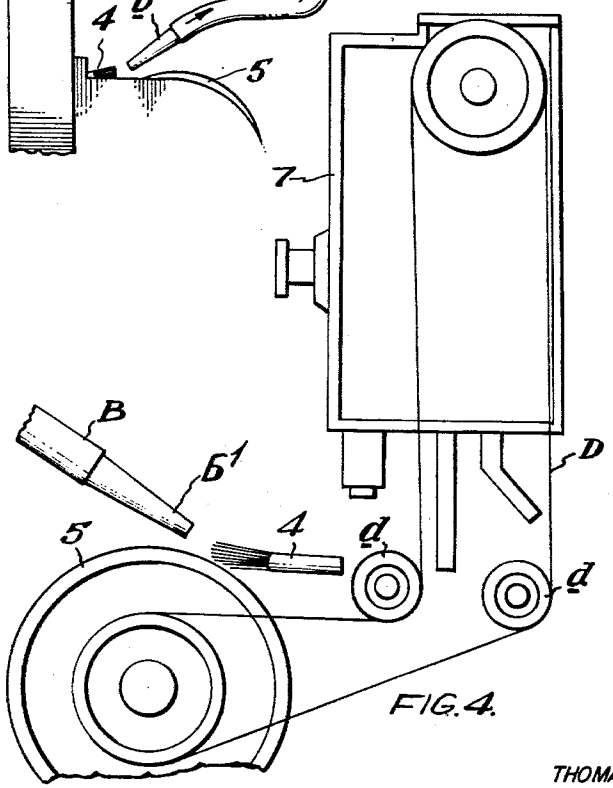


FIG. 4.

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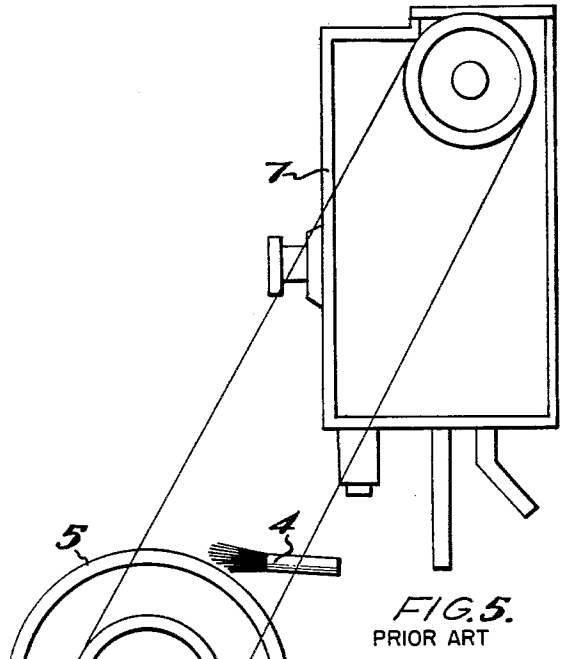
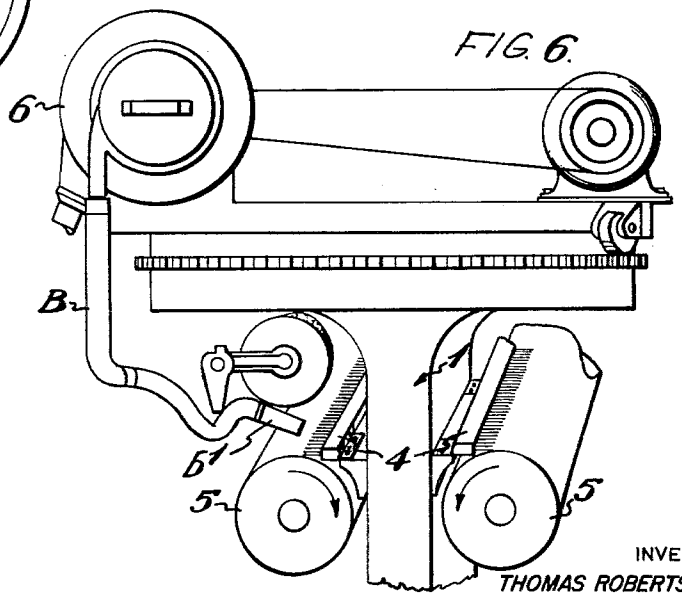


FIG. 5.
PRIOR ART

FIG. 6.



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AUTOMATIC SPOOLING MACHINE

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Claims priority, application Great Britain, June 27, 1962, 24,592/62
3 Claims. (Cl. 242—35.5)

This invention relates to improvements in automatic spooling machines.

A Barber-Colman automatic spooler has been proposed in which a knotting head travels intermittently along each side of the machine on an endless track to tie the ends of new bobbins to the ends of the previously wound bobbins on the cheeses. A spooler is provided with a brush contacting the winding drum to collect any fly or wild ends deposited by the travelling head and with a blow-off fan directed in the direction of the bobbin pockets.

It has been found, however, that the fly and wild ends collected by the brush become detached therefrom and are carried on to the cheeses, thereby causing yarn breakages when the cheeses are unwound.

The object of the invention is to collect any fly or wild ends deposited on the brush by applying a suction chamber to the fan intake and connecting a suction pipe thereto, the mouth of which travels in proximity to the brush to draw any fly or wild ends therefrom and deposit them in a perforated receptacle in the suction chamber.

According to the invention a suction chamber is mounted on the fan to enclose the intake aperture thereof, a suction pipe being taken from the chamber with the mouth of the pipe adjacent the wild yarn collecting brush, whereby as the head travels along the lines of bobbins the suction pipe picks off any wild ends or fly from the brush.

The invention will be described with reference to the accompanying drawings:

FIG. 1 is a perspective view of a Barber Colman automatic spooler.

FIG. 2 is a perspective view of the travelling knotting head.

FIG. 3 is a diagrammatic side view of the suction apparatus.

FIG. 4 is a side elevation of the timer drive.

FIGURE 5 is a side elevation showing a current form of timer device prior to the invention.

FIGURE 6 is an end view of a spooler showing the mounting and position of the brushes in relation to the winding drums and the suction nozzle on the travelling head.

A Barber Colman automatic spooler **1** is provided with a knotting head **2** which is given an intermittent travel along each side of the machine an an endless track **3** to the ends of new bobbins on the cheeses. A spooler is provided with a brush **4** contacting the winding drum **5** to collect any fly or wild ends deposited by the travelling head **2** and with a blow off fan **6** directed in the direction of the bobbin pockets all in known manner. Each brush **4** is mounted on the spooler frame as shown in FIGURE 6.

The intake of the blow off fan **6** on the travelling knotter head unit **2** is enclosed by a suction chamber *a* bolted or otherwise secured to the fan casing. The suction chamber *a* is closed at its outer end by a door or cap a^1 and is provided with an internal circumferential shoulder a^2 to receive a ring of a collection bag *b* for wild end or fly. The bag *b* is formed of a textile material of a weave which will allow air to be drawn therethrough but which will prevent the passage of wild ends or fly. The bag may be withdrawn periodically for emptying through the door or cap a^1.

A port or opening a^3 is provided in the suction chamber *a* between the mouth of the bag and the door or cap, with a flange on its outer periphery to receive one end of a flexible pipe B preferably of polyvinyl chloride (P.V.C.), the other end of the pipe terminating in a nozzle b^1 adjacent to the normal wild yarn collecting brush **4**. The air intake for the fan is thus obtained from adjacent the wild yarn brush **4** and any wild yarn or fly thereon is sucked into the bag *b* in the suction chamber *a* and retained therein. The flexible pipe B may be connected to a rigid nozzle b^1 (such as copper) terminating adjacent the brush **4**.

A proportion of the air passing up the pipe is bypassed through a groove in the side of the suction chamber and does not pass through the bag to ensure a supply of air to the blower and it is found that substantially no wild ends or fly enter the fan with this air.

The pipe is secured in position by clips or clamps on the back plate of the travelling unit **2**.

A timing unit **7** FIG. 4 is mounted at one end of the machine to start the travelling unit **2**. When the unit **2** completes a circuit in less time than the bobbins become exhausted it has been found that the suction pipe B may foul the timing unit belt D drive from the winding drum **5**. The belt is accordingly taken round two jockey pulleys *d* mounted on ball bearings to remove the belt from the line or travel of the suction pipe B as it travels with the knotting head. The old drive for the timing unit is shown in FIGURE 5.

What I claim is:

1. In an automatic spooling machine of the type characterized by a winding drum, a plurality of winding units for winding cheese packages driven by said winding drum, a traveling head which moves past the winding units for tying the ends of supply bobbins to the ends of previously wound cheeses, and a brush mounted to engage the winding drum to collect fly and wild ends, the improvement that comprises suction means mounted to move with said head and having an intake conduit terminating in an intake nozzle adjacent said brush, so that as said head moves along said brush said fly and wild ends are drawn through said nozzle by said suction means.

2. In an automatic spooling machine of the type characterized by a winding drum, a plurality of winding units for winding cheese packages driven by the winding drum, a traveling head which moves past the winding units for tying the ends of supply bobbins to the ends of previously wound cheese, a brush mounted to engage the winding drum to collect fly and wild ends, and a blow off fan on said head having an outlet directed in the direction of pockets wherein said bobbins are supported, the improvement which embodies apparatus for continuously removing said fly and wild ends from the brush and comprises means defining a suction chamber at the

intake of said fan, a conduit connected to said chamber, and a nozzle on said conduit disposed closely adjacent to and adapted to move along said brush during movement of said head, whereby the air supply for said fan is drawn from adjacent said brush and said fly and wild ends are continuously removed from said brush by suction effective at said nozzle.

3. In the apparatus defined in claim 2, an air permeable receptacle in said chamber adapted to extract and collect said fly and wild ends from the entering air stream.

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