Sept. 12, 1933. R. McC. JOHNSTONE 1,926,774

EJECTING AND DELIVERY DEVICE FOR WINDING MACHINES

Original Filed Jan. 28, 1931 3 Sheets-Sheet 1

Fig. 1.

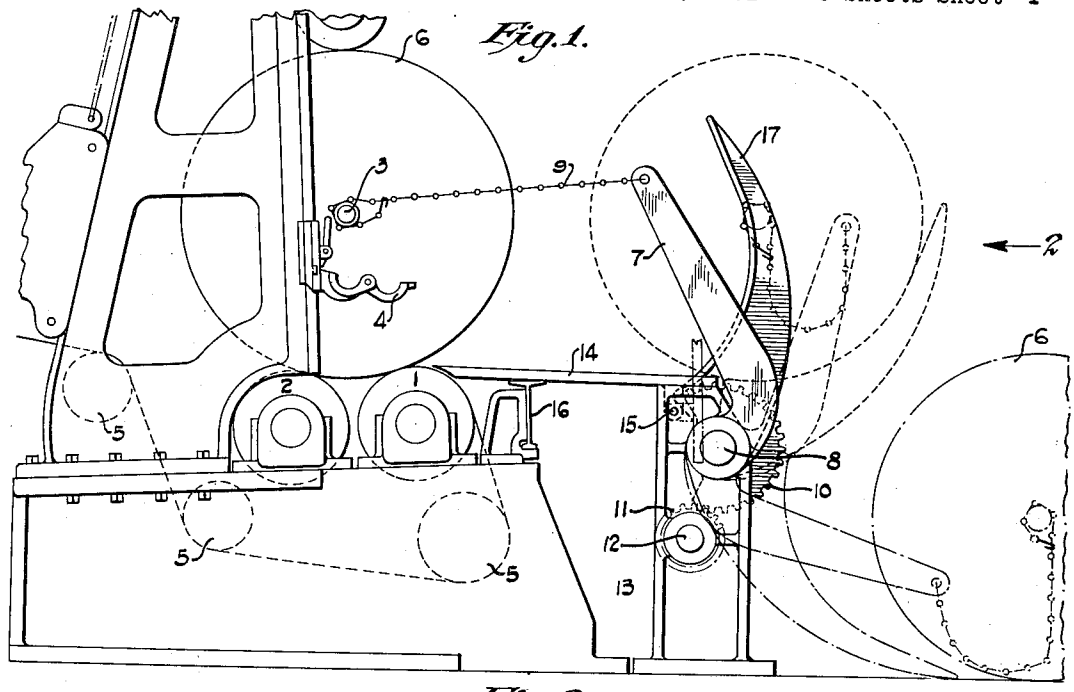
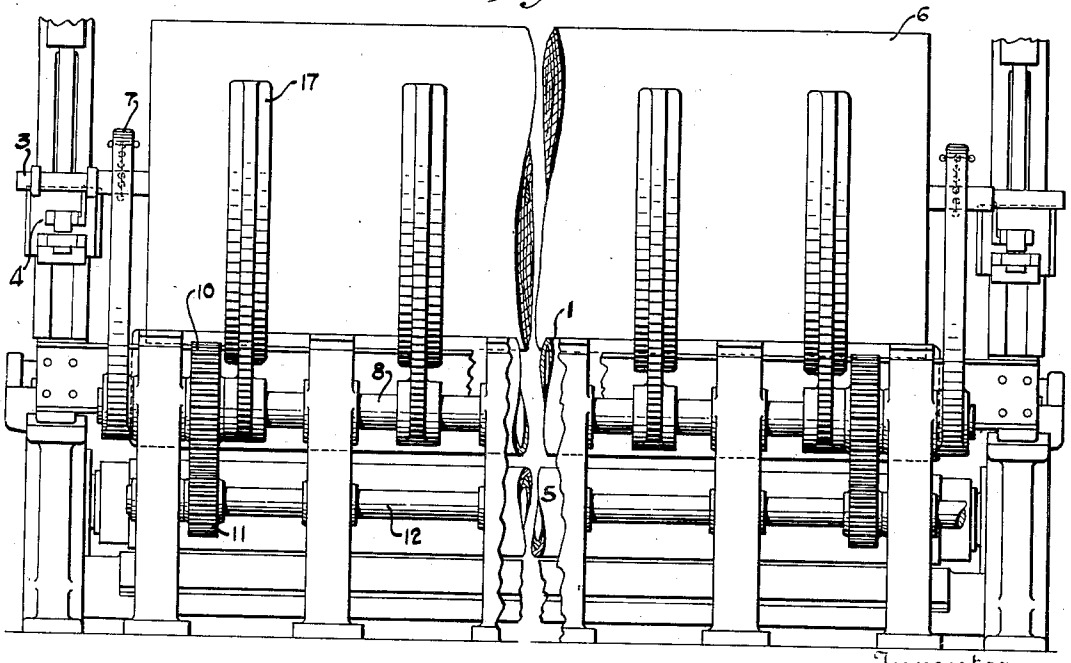


Fig. 2.



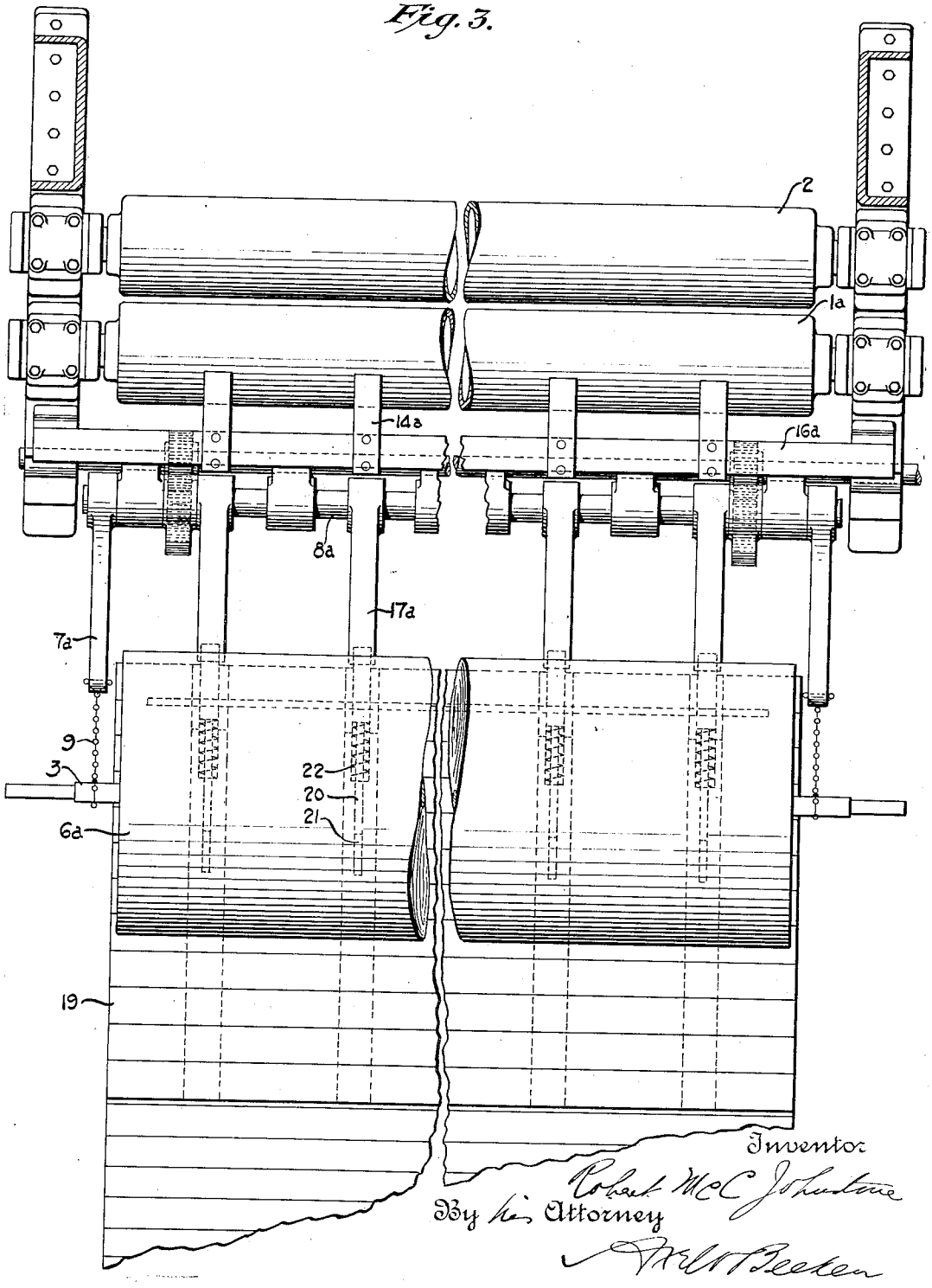
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Fig. 3.



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Fig. 4.

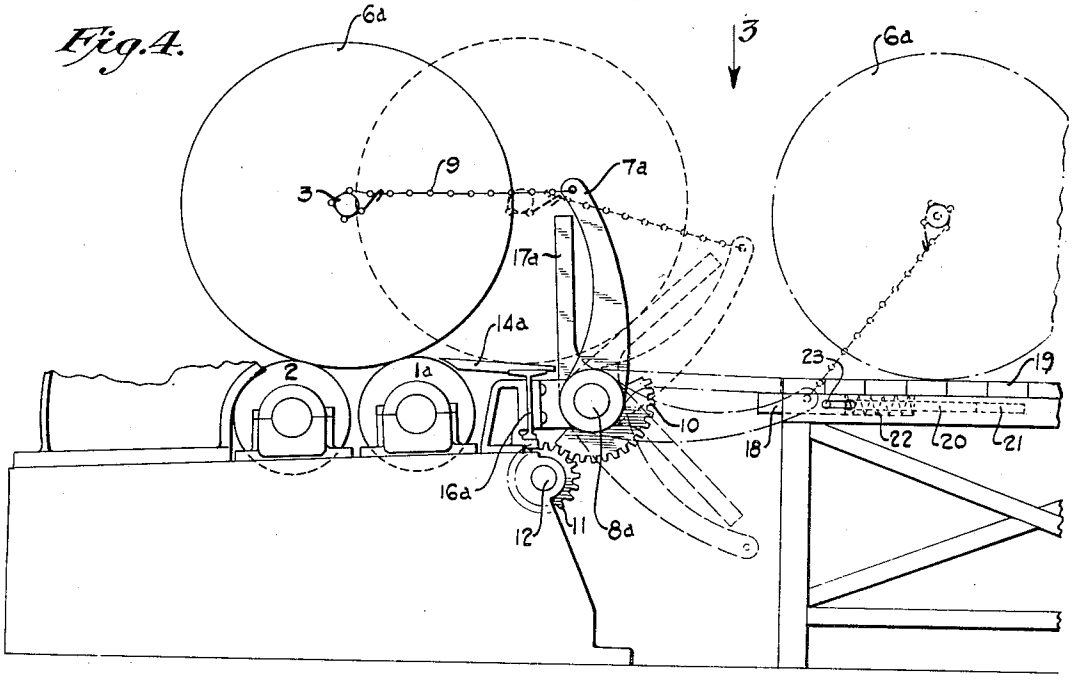
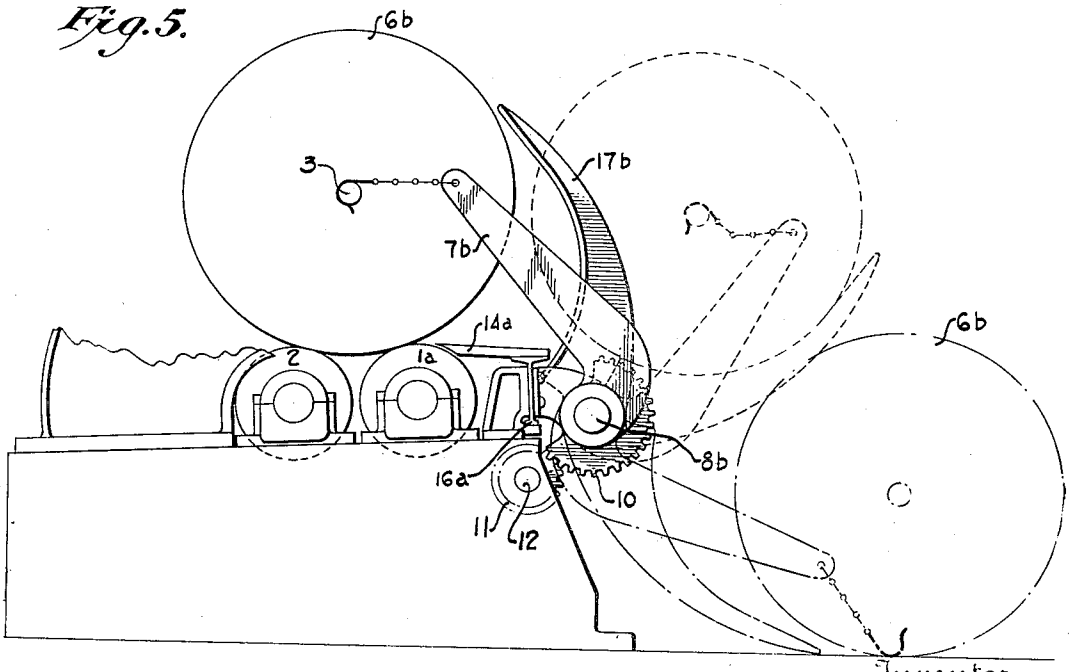


Fig. 5.



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UNITED STATES PATENT OFFICE

1,926,774

EJECTING AND DELIVERY DEVICE FOR WINDING MACHINES

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Application January 28, 1931, Serial No. 511,700
Renewed January 7, 1933

6 Claims. (Cl. 242—66)

This invention relates to ejecting and delivery devices for winding machines and has for its main object and feature the provision of reliable means to safely remove and deliver a heavy roll of wound material.

In the accompanying drawings the invention is disclosed in several concrete and preferred forms in which

Fig. 1 is a view in side elevation of a winding machine embodying one form of the invention;

Fig. 2 is a view, partly broken away and in section, looking in the direction of arrow 2 of Fig. 1;

Fig. 3 is a top plan view, partly in section, of the parts shown in Fig. 4; and

Figs. 4 and 5 are views similar to Fig. 1 but showing modified forms of construction.

The winding machine illustrated is of the regulation surface winding type in which two drums 1 and 2 are utilized, said drums being spaced apart and rotating in the same direction. In the valley between the drums is placed a winding shaft 3 carried by a bearing 4 that is displaceable in a known manner as the material accumulates thereon. The web of flexible material is led from a suitable source over appropriate guide rollers 5 and may or may not be slitted in transit. Eventually said material passes over one of the winding drums and is led to the winding shaft where it accumulates into a roll of wound material 6.

When sufficient material has been accumulated, the problem of removing the heavy roll presents itself. In the present instance I provide a set of pivotally supported arms 7, here two in number. These arms are mounted on shaft 8 and are connected by flexible connections 9 to the winding shaft or other core-engaging means when it is desired to remove the roll of wound material. Shaft 8 carries a sector 10 with which meshes a pinion 11 on shaft 12. It will now be understood that by rotating shaft 12 by means of a crank or a motor, arms 7 and chains 9 will pull the roll of wound material out of the valley between the drums and up over the crest of one of the drums. Before this can be done it is, however, necessary to open bearing 4 as shown so that the winding shaft may be released. Preferably, arms 7 are located in spaced relation to the drums so that a gangway 13 is afforded between the drums and arms, and to bridge this gangway a plurality of skids 14 are provided, said skids being pivoted at 15 and are capable of occupying either a raised position or a lowered position in contact with I-beam 16 as shown. These skids are slightly inclined when in their lowered position as shown. 17 indicates a plurality of pivotally supported arms, here mounted on shaft 8 so that movement of said shaft will turn both arms 7 and also arms 17. It will now be understood that when the roll of flexible material is moved out of the valley between the drums, it will roll over skids 14 and against arms 17 as shown in dotted lines. Continued movement of shaft 8, by reason of rotation of shaft 12, will eventually deposit the roll of wound material on the floor or on a truck (not shown) as indicated in dash-and-dot lines of Fig. 1. In order to prevent the roll of wound material from getting out of control, the flexible connection between arms 7 and the winding shaft may be retained until said roll has been brought to a state of rest.

In the construction shown in Figs. 3 and 4, the shaft 8^a is mounted very closely to I-beam 16^a, and short skids 14^a are interposed between drum 1^a and I-beam 16^a. Arms 7^a are constructed like arms 7 of Fig. 1, but arms 17^a, when lowered, form skids that virtually are continuations of skids 14^a and which come to rest on supports 18 of delivery table or truck 19, so that the roll of wound material 6^a is transferred to said table or truck. Supports 18 are here mounted on slides 20 received in slots 21 of the table and are normally projected outwardly by springs 22. Suitable means, such as transverse rod 23, is used to withdraw supports 18 so as to permit arms 7^a and 17^a to pass below the plane of table 19 as shown in dash-and-dot lines in Fig. 4.

In Fig. 5 the arms 7^b and 17^b are located on a shaft 8^b in substantially the same position as shown in Figs. 3 and 4, but are arranged to deliver the roll of wound material 6^b in the manner indicated in Fig. 1.

I claim:

1. In a winding machine, two surface winding drums spaced apart and rotatable in the same direction, a winding shaft, to be placed in the valley between the drums, to accumulate a roll of wound material, movable receiving and delivery means, for the roll of wound material and its shaft, located adjacent one side of one of the drums, and means, located on the same side of the same drum, to eject the roll of wound material and winding shaft from the valley between the drums to the receiving and delivery means.

2. In a winding machine, two surface winding drums spaced apart and rotatable in the same direction, a winding shaft, to be placed in the valley between the drums, to accumulate a roll of wound material, two sets of pivotally supported arms located adjacent to the same side of the same drum, one set to receive and deliver the

roll of wound material and its shaft, and the other set to eject the roll of wound material and its shaft from the valley between the drums to the first-mentioned set.

3. In a winding machine, two surface winding drums spaced apart and rotatable in the same direction, a winding shaft, to be placed in the valley between the drums, to accumulate a roll of wound material, a set of pivotally supported arms to pull the roll of wound material and its shaft out of the valley between the drums, another set of arms to receive and deliver the roll so ejected, a shaft carrying both sets of arms, and means to turn the shaft.

4. In a winding machine, a winding drum to support a roll of wound material, core-engaging means for the roll of wound material, movable receiving and delivery means, for the roll of wound material and its core-engaging means, located adjacent one side of the drum, and means located on the same side of the drum, to move the roll of wound material and its core-engaging means over the drum to the receiving and delivery means.

5. In a winding machine, a winding drum to support a roll of wound material, core-engaging means for the roll of wound material, two sets of pivotally supported arms located adjacent to the same side of the drum, one set to receive and deliver the roll of wound material and its core-engaging means, and the other set to move the roll of wound material and core-engaging means over the drum to the first-mentioned set.

6. In a winding machine, a winding drum to support a roll of wound material, core-engaging means for the roll of wound material, a set of pivotally supported arms to pull the roll of wound material and its core-engaging means over the drum, another set of arms to receive and deliver the roll so moved, a shaft carrying both sets of drums, and means to turn the shaft.

ROBERT McC. JOHNSTONE.