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WIRE PACKAGING ATTACHMENT AND DRIVE MEANS THEREFOR

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Fig. 1

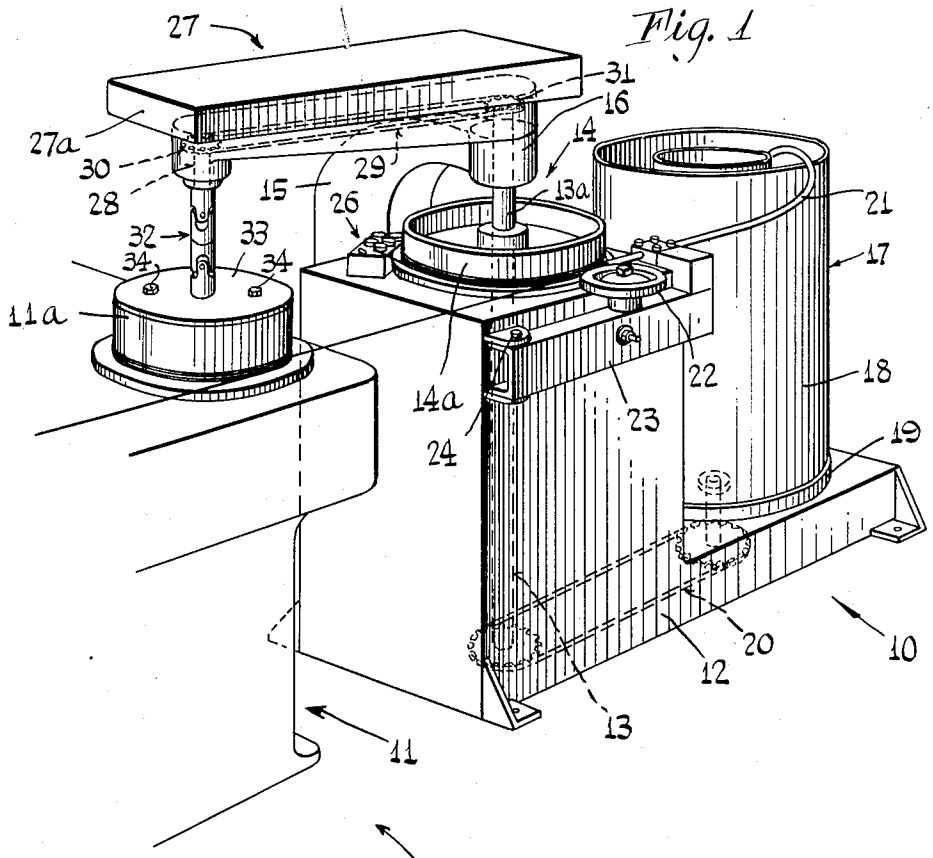
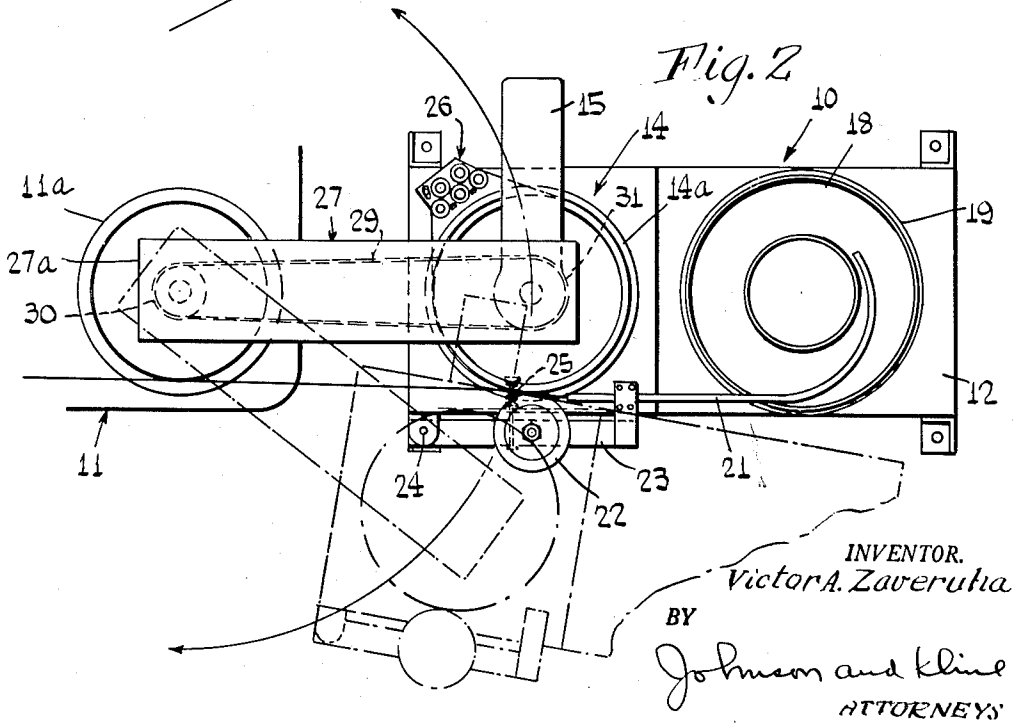


Fig. 2



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WIRE PACKAGING ATTACHMENT AND DRIVE MEANS THEREFOR

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5 Claims. (Cl. 203—200)

The present invention relates to the connection of wire packaging attachments to wire processing machines.

Heretofore, difficulty has been encountered in providing a simple and inexpensive means for attaching wire packaging attachments to existing wire processing machines. It has been necessary to cut through the housing of the machine to make the necessary drive connection and in many cases because of space requirements it has been difficult to connect the packaging attachment in such a manner that it will fit into the space available.

The present invention overcomes these difficulties by providing a simple, yet effective driving means whereby the attachment may be connected to a projecting rotary driven member for the wire processing machine so as to readily coordinate the operation of the packaging attachment with the machine and which connection is such that it permits the packaging attachment to be positioned at various locations about the machine so as to fit within the available space.

This is accomplished, according to the present invention, by providing an overarm of a length to extend beyond the frame of the packaging attachment and over the wire processing machine and to have a shaft at the end of the arm provided with a universal driving connection adapted to be connected to the projecting part of the wire processing machine so as to be readily coupled thereto without the necessity of breaking through the frame and making a connection within the interior of the machine housing.

In the present preferred form of the invention the arm is pivotally mounted on a post on the attachment so that the attachment can be moved and its position shifted with respect to the machine so as to fit it into existing space.

A feature of the invention resides in the use of a universal coupler on the shaft at the end of the arm whereby a packaging attachment can be connected to the machine without requiring precise lining up of the parts.

Another feature of the invention resides in the simplicity with which the attachment may be installed.

Other features and advantages of the invention will be apparent from the specification and claims when considered in connection with the drawings in which:

Figure 1 shows a perspective view of the packaging attachment connected to the wire processing machine through the drive means of the present invention.

Fig. 2 is a plan view showing the manner in which the packaging attachment may be shifted with respect to the wire processing machine in order to fit the attachment into available space.

While the present invention can be used in connection with various types of processing machines capable of having wire fed therefrom, it is herein illustrated as employed in conjunction with a wire drawing machine and the term "wire drawing" as used herein is not to be construed as limiting the invention for use therewith.

As shown in the drawings, a wire packaging attachment **10** is disposed adjacent the wire drawing machine **11** to receive wire therefrom. The packaging attachment includes a frame **12** having a drive shaft **13** journaled therein to project above the top thereof and having a wire feeding mechanism **14** thereon. A post **15** extends up and over the frame and is provided with a bearing **16** for supporting the projecting end **13***a* of the shaft. The frame also has a rotatable wire receiver **17**. As illustrated herein, the receiver comprises a drum **18** mounted on a carrier **19** which is driven in timed relation with the feed mechanism by drive means **20** connected to the drive shaft so as to receive the wire as it is fed by the feeding mechanism through a guide means **21**.

The feed mechanism, in the preferred form of the invention, includes a capstan **14***a* secured to the drive shaft and has a roller **22** carried by an arm **23** pivoted to the frame at **24** and urged into engagement with the wire by means of a spring **25** so as to control the wire as it is fed by the capstan. Preferably, wire setting rollers **26** are provided adjacent the capstan and through which the wire passes to cast a set in the wire to cause it to lie properly in the receiver.

The packaging attachment, since it receives the wire from the wire drawing machine should have its drive coordinated with the drive for the wire drawing machine so as to enable it to take up the wire as it is drawn. This is accomplished, according to the present invention, by connecting the attachment to a projecting rotary member of the wire drawing machine so that the attachment derives its rotation from the wire drawing machine and can be readily coordinated therewith.

For the purpose of illustrating the invention, the attachment is shown connected to the last capstan or coiling drum **11***a* which projects above the top surface of the wire drawing machine. This is accomplished by providing an overarm **27**, preferably hollow, which is adapted to be mounted on the top of the post **15** and is of a length to project laterally so that its end **27***a* extends beyond the edge of the frame and over the wire drawing machine. The projecting end **27***a* of the arm is provided with a stub shaft **28** rotatably mounted therein. The stub shaft and the end **13***a* of the drive shaft **13** which is disposed within the arm, as shown in Fig. 1, are connected together by suitable drive means, herein illustrated as a chain **29** and sprockets **30**, **31** connected to the shafts. The stub shaft has secured thereto a universal drive connection **32**. While this universal connection may be connected to any shaft projecting from the machine, such as the shaft for the capstan or coiling drum, or the like, it is herein illustrated as being provided with a plate **33** adapted to be bolted by the bolts **34** to the end face of the drum so that the packaging attachment will be driven by the wire drawing machine through the shaft for the last capstan or coiling drum through the stub shaft and drive connection in the arm to the drive shaft for the attachment so that it will be insured that its drive is properly coordinated with the wire drawing machine.

Thus, it will be seen that the drive connection can be completed in a simple and effective manner without in any way requiring the breaking through of the base or frame for the wire drawing machine and the gearing-in of the attachment to the shaft support therein. By the use of the universal drive connection, it will be unnecessary to accurately align the attachment with the wire drawing machine so that the connection is further facilitated.

While feed means on the attachment may be used in place of the capstan **11***a*, it is at present preferred to advance the wire by both the capstan **11***a* and the feed means **14** as shown in the drawings.

Normally, it is desired to have the packaging machine form, in effect, a straight line continuation of the wire drawing machine. However, in many installations the wire drawing machines are laid out in the plant such that

it is impossible to put the attachment in such position. The present invention overcomes this difficulty by pivotally mounting the overarm on the post by any suitable bearing means so that it may be turned on the post and thus permit the attachment to be moved through a substantial arc of movement about the ends of the machine as indicated in Fig. 2 and also permit the attachment to be moved about the drive shaft as a pivot so as to have it extend transversely of the end of the coiling machine.

It will be apparent that the present invention greatly facilitates not only the connection of the packaging attachment to the wire drawing machine but also the location of the attachment with respect to existing wire drawing machines to accommodate the device in available spaces without requiring the re-arrangement of the wire drawing machines.

While the present invention is particularly useful in connecting packaging attachments to existing machines, it is to be understood that it can be used also as a means for connecting the packaging device to a wire drawing machine in an original installation.

Variations and modifications may be made within the scope of the claims and portions of the improvements may be used without others.

I claim:

1. A wire packaging attachment adapted to be connected to a projecting rotary driven member of a wire processing machine comprising a frame having a rotary wire feeding and an interconnected vertical rotary packaging device thereon; a drive shaft therefor projecting above the frame; a post on the frame projecting above the frame and having a bearing for the end of the shaft; an overarm mounted on the post to pivot about said shaft and projecting beyond the sides of the frame; a stub shaft rotatably mounted on the arm adjacent the other end thereof; drive means carried by the arm connecting the stub shaft and drive shaft; and a universal connection secured to said stub shaft and having means thereon adapted to be connected to said projecting driven member of the wire processing machine to be driven thereby so as to rotate said wire feeding and packaging devices in timed relation to said wire processing machine.

2. A wire packaging attachment adapted to be connected to a projecting rotary driven member of a wire processing machine comprising a frame having a capstan and an interconnected vertical rotary packaging device thereon; a drive shaft therefor projecting above the frame; a post on the frame projecting above the frame and having a bearing for the end of the shaft; a hollow overarm mounted on the post and projecting beyond the sides of the frame; a stub shaft rotatably mounted on the arm adjacent the other end thereof; chain and sprocket drive means carried within the hollow arm and connecting the stub shaft and drive shaft; and a universal connection secured to said stub shaft and having means thereon adapted to be connected to said projecting driven part of the wire processing machine to be driven thereby so as to rotate the capstan and packaging device in timed relation to said wire processing machine.

3. Drive means connecting a wire packaging attachment provided with a frame having a rotary wire feeding device and an interconnected vertical rotary packaging device thereon to a projecting rotary driven member of a wire drawing machine, said attachment having a drive shaft projecting above the frame, a post on the frame projecting above the frame and being provided with a bearing for the end of the shaft; the improvement comprising an overarm mounted on the post and projecting beyond the sides of the frame; a stub shaft rotatably mounted on the arm adjacent the projecting end thereof; drive means carried by the arm and connecting the stub shaft and drive shaft; and a universal connection secured to said stub shaft and having means thereon adapted to be connected to the projecting driven part of the wire drawing machine to be driven thereby so as to rotate said wire feeding and packaging devices in timed relation to said wire processing machine.

4. Drive means connecting a wire packaging attachment provided with a frame having a rotary wire feeding device and an interconnected vertical rotary packaging device thereon to a projecting rotary driven member of a wire drawing machine, said attachment having a drive shaft projecting above the frame, a post on the frame projecting above the frame and being provided with a bearing for the end of the shaft; the improvement comprising an overarm mounted on the post to pivot about said shaft and projecting beyond the sides of the frame; a stub shaft rotatably mounted on the arm adjacent the projecting end thereof; drive means carried by the arm and connecting the stub shaft and drive shaft; and a universal connection secured to said stub shaft and having means thereon adapted to be connected to the projecting driven part of the wire drawing machine to be driven thereby so as to rotate said wire feeding and packaging devices in timed relation to said wire drawing machine, said arm being mounted on the post for pivotal movement with respect thereto whereby the position of the frame with respect to the arm can be varied.

5. Drive means connecting a wire packaging attachment provided with a frame having a rotary wire feeding device and an interconnected vertical rotary packaging device thereon to a projecting rotary driven member of a wire drawing machine, said attachment having a drive shaft connected to the wire feeding device and projecting above the frame, a post on the frame projecting above the frame and being provided with a bearing for the end of the shaft; the improvement comprising a hollow overarm mounted on the post to pivot about said shaft and projecting beyond the sides of the frame; a stub shaft rotatably mounted on the arm adjacent the other end thereof; chain and sprocket drive means carried within the arm and connecting the stub shaft and drive shaft; and a universal connection secured to said stub shaft and having means thereon adapted to be connected to the projecting driven part of the wire drawing machine to be driven thereby so as to drive the wire feeding device and packaging devices in timed relation with the wire drawing machine.

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