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DRUM FOR REENFORCING CAGE MACHINES

Original Filed Sept. 25, 1928

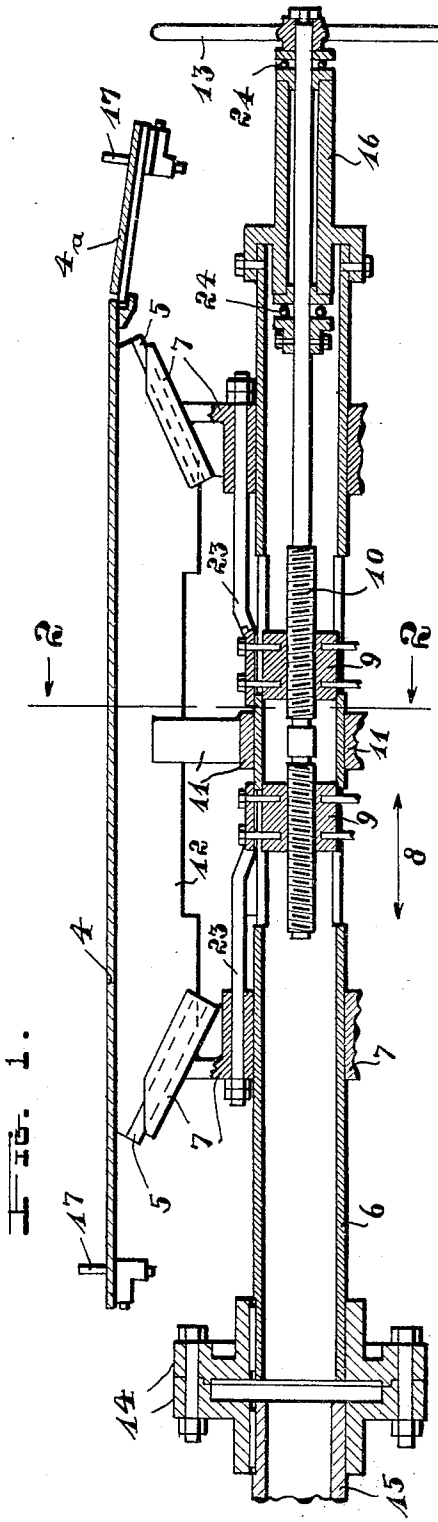


Fig. 1.

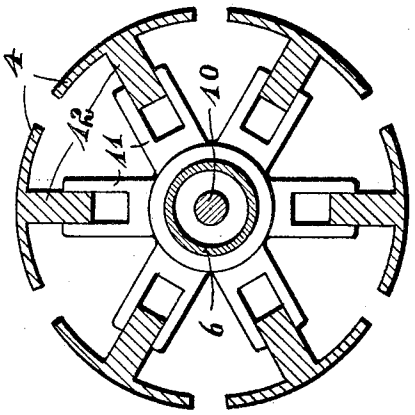


Fig. 2.

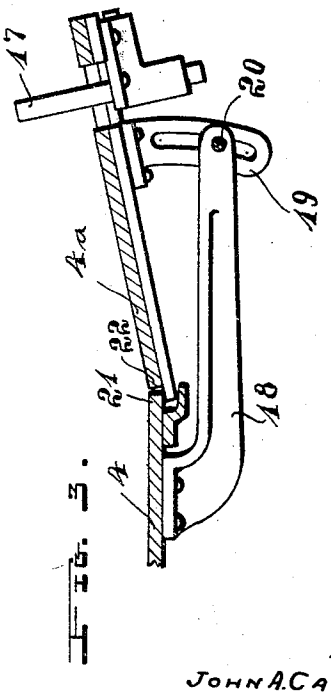


Fig. 3.

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DRUM FOR REENFORCING CAGE MACHINES

Original application filed September 25, 1928, Serial No. 308,328. Patent No. 1,846,767, dated February 23, 1932. Divided and this application filed August 4, 1930. Serial No. 473,036.

This invention relates to devices used for supporting reenforcement cages, to be embedded in concrete structures, during the producing of cages on machines provided for that purpose, this being a divisional application of matter originally disclosed in the co-pending application filed Sept. 25, 1928, Serial Number 308,328.

One of the objects of this invention is to provide a drum that can be adjusted to different diameters while in operative position on a supporting and driving shaft.

Another object is to provide a cage drum with adjustable means for a distinct collar section of a cage.

Another object is to provide a cage drum with means for exchangeably supporting different-sized winding sections.

Other objects will apear from the following description and appended claims as well as from the accompanying drawing, in which—

Fig. 1 is a fragmentary longitudinal mid-sectional view of a drum and adjusting mechanisms.

Fig. 2 is a general cross section through a drum as seen if taken on line 2—2 of the illustration in Fig. 1 when the several drum sections are in proper place, though in the illustration of Fig. 1 only one of such sections is indicated in place.

Fig. 3 is a fragmentary detail longitudinal section through a portion of the drum and an adjustable attaching plate whereby reenforcing material can be wound for enlarged ends of pipes as in a flange.

The drum as illustrated in the drawing is made in several sections, six being indicated in Fig. 1, but of course more or less sections may be provided depending on the diameter and other sizes of the drum or on the requirements or preferences of the different manufacturers or users.

Each of the drum sections 4 is provided with an inclined spreading member 5 on both opposite ends. The hollow shaft 6 serves to support the drum sections as well as the whole operating and adjusting mechanisms for the drum sections.

Guide members 7 are mounted on the outside of the hollow shaft 6 for sliding movements back and forth in the direction of the double arrow 8. These guiding members are designed and formed to slidingly engage the spreading members 5 of the drum sections.

Shifting blocks 9 disposed inside of the hollow shaft 6 are operatively mounted on a turning spindle 10 whereby the shifting blocks 9 can be moved back and forth longitudinally within the hollow shaft. These shifting blocks are operatively connected to the guiding members 7 so that a shifting of the shifting blocks 9 inside of the hollow shaft results in a shifting of the guide members 7 on the outside of the shaft.

To support the guide members 7 in maintaining the drum sections in certain radial relation to the hollow shaft 6, a bifurcated spider structure 11 is securely mounted on the outside of the hollow shaft, the drum sections having reenforcing webs 12 radially slidable within the bifurcated portions of the spider structure 11.

The drum sections can be exchanged so as to take care of various diameters desired in reenforcing cages. For this purpose, the drum sections can be removed from the guides 7 and the spiders 11 to allow an exchanging of drum sections of different sizes.

The spindle 10 is mounted between thrust-bearings indicated at 24 within one end of the hollow shaft, a handle 13 being provided on the outside for adjusting the spindle and thereby the shifting blocks 9 and the guiding member 7 so as to produce a desired adjustment for the drum sections to a certain diameter.

One end of the hollow shaft 6 is provided with a coupling 14 whereby the whole drum structure can be secured firmly to the main driving shaft 15 of a machine suitable for supporting and operating a drum of this type; while the opposite end of the hollow shaft 6 is provided with a bearing structure 16 on which the whole drum-structure may be turnably supported, this bearing structure 16 serving also to support the thrust-bearings 24.

To facilitate a removal of a finished reenforcing cage, the drum sections can also be adjusted to a smaller diameter by means of

the guiding members 7 and the spreading members 5.

Inasmuch as pipes for which reenforcements are customarily produced on drums of this type are commonly or frequently provided with flange or collar portions, one end of each of the drum sections is preferably provided with an adjustable flap or portion indicated at 4_a and illustrated in detail in Fig. 3, by which the reenforcement can be wound over this portion to a form to become embedded in the flange or collar portion of a finished pipe.

As illustrated in Fig. 3, the adjustable portion 4_a can be held in various adjusted positions by means of the arm 18, the bracket 19, and the pin or bolt 20. The end edge 21 of the drum section 4 is designed to swingably engage and support the edge 22 of the portion 4_a.

For a proper holding and winding and tying of a reenforcement cage on this drum, the drum-sections 4 as well as the end-portions 4_a are provided with suitable similar pins 17.

These pins 17 are shiftable and adjustable within the supporting blocks 25, having grooves 26 and 27 provided in the pins to be engaged by the tumblers 28 under the tension of the springs 29 in each set of these pin and block assemblies.

Having thus described our invention, we claim:

1. In a reenforcing cage machine, a sectioned drum, spreading members on each of the drum sections, a hollow shaft having means by which to receive rotating motion, operating blocks shiftable axially within the hollow shaft, a spindle turnably mounted within the hollow shaft including means whereby the shifting blocks can be moved within the shaft axially in opposite directions in relation to one another, and guiding means on the outside of the hollow shaft designed to engage the spreading members of the drum sections and operatively connected with the shifting blocks within the hollow shaft for controlling the drum sections in certain diameters.

2. In a reenforcing cage machine, a sectioned drum, a hollow shaft having means by which to receive a rotating motion, a spindle turnably mounted within the shaft, actuating means operatively connecting the spindle within the shaft with the sectioned drum outside of the shaft, the drum having perforations, and tie pins mounted on the underside of the sectioned drum and adapted to extend through the perforations to protrude from the drum.

3. In a reenforcing cage machine, a sectioned drum, a hollow shaft having means by which it is to be connected to a driving mechanism, a spindle turnably mounted within the shaft, actuating means operatively connecting the spindle within the hollow shaft with the sectioned drum outside of the hollow shaft, the drum having perforations, and tie pins mounted on the inner side of the sectioned drum designed to extend through the perforations beyond the outer contours of the drum to support any material tied over the outside of the drum and adapted to be moved to within the outer contours of the drum when the tied material is to be removed from the drum.

4. In a reenforcing cage machine, a sectioned drum, a hollow shaft, a spindle turnably mounted within the shaft, and actuating means operatively connecting the spindle within the hollow shaft with the sectioned drum outside of the shaft, the sectioned drum being provided with short tilting portions adapted to be adjusted to a short tapered portion.

5. In a reenforcing cage machine, a sectioned drum, a hollow shaft, a spindle turnably mounted within the shaft, actuating means operatively connecting the spindle within the hollow shaft with the sectioned drum outside of the shaft, short tilting portions operatively connected to the drum and adapted to be adjusted to a short taper portion, and adjusting means for the tilting portions adapted to hold the tilting portions in certain relations to the main portions of the drum.

In testimony that we claim the foregoing as our invention we have signed our names.

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