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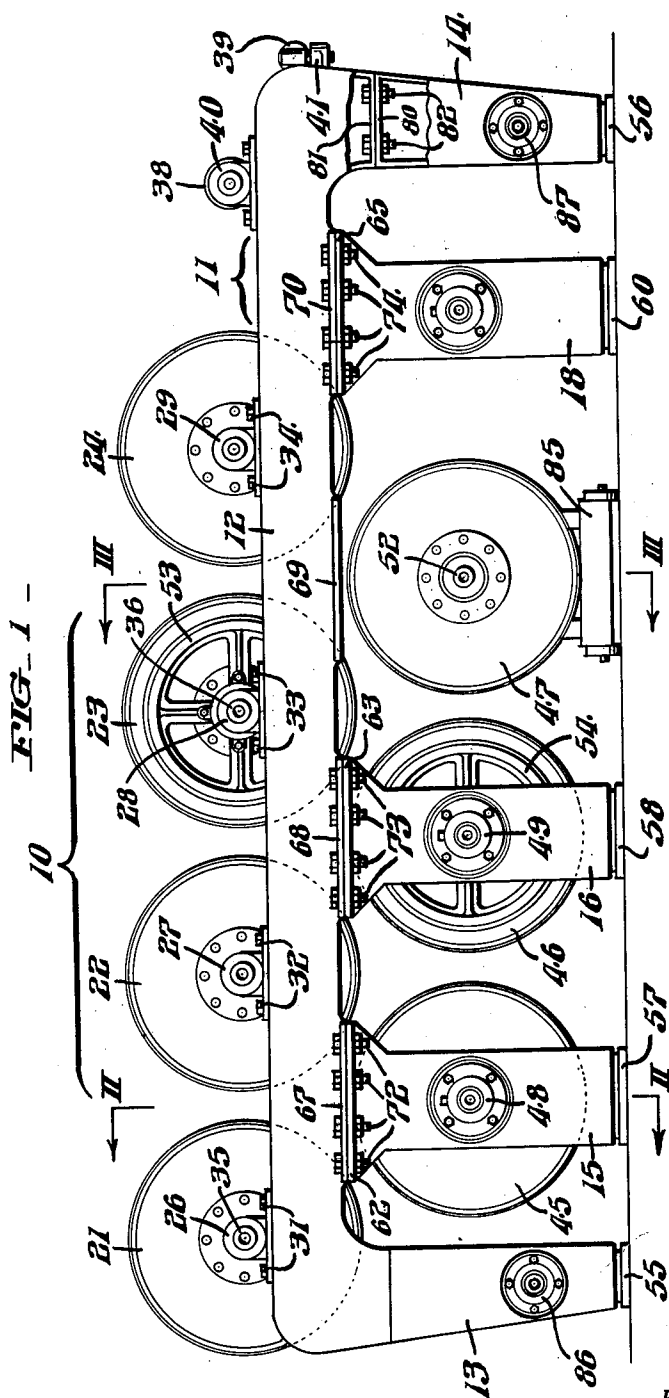
J. COCKER III

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DRYING SECTION FOR A TEXTILE APPARATUS

Filed Jan. 13, 1961

2 Sheets-Sheet 1



INVENTOR.
John Cocker, III
BY
Paul & Paul
ATTORNEYS.

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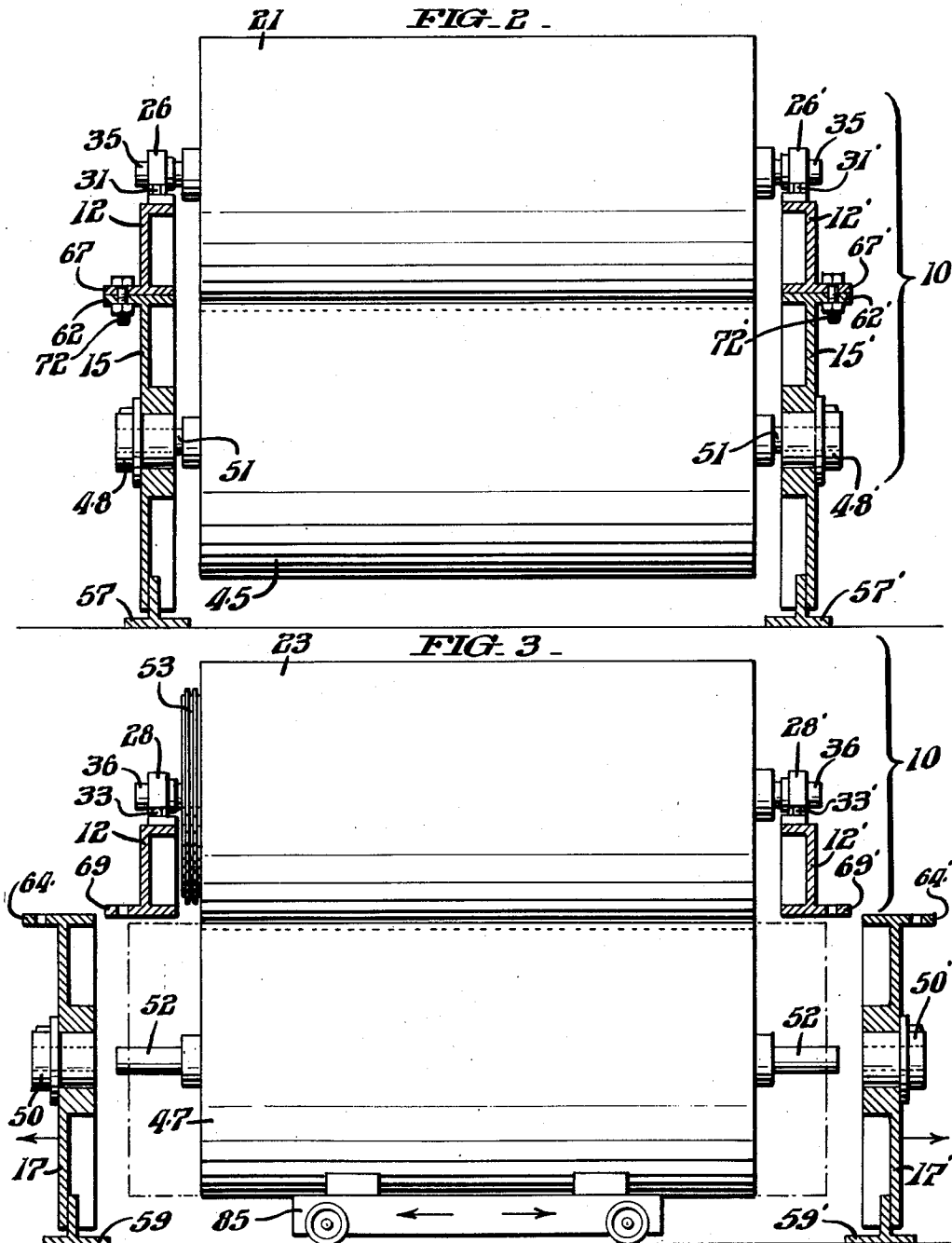
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INVENTOR.
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DRYING SECTION FOR A TEXTILE APPARATUS
John Cocker III, Gastonia, N.C., assignor to Cocker
Machine & Foundry Company, Gastonia, N.C., a cor-
poration of North Carolina

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2 Claims. (Cl. 34—121)

This invention relates to apparatus for treating and drying textiles, and in one specific form thereof relates to cylinder sections of textile slasher apparatus. More particularly, this invention relates to the construction of cylinder sections of textile apparatus having independent support means for the grouped cylinders thereof, which provides for the quick removal of any individual cylinder of the group.

In the past, cylinder sections for drying yarns, and the like, which have passed through textile apparatus, such as a textile slasher in which the yarns have been impregnated with starch, dyes, size or other similar treating liquid, have been conventionally constructed so that the bottom cylinders are supported on legs which are so close together that the aforesaid cylinders cannot be removed through the space between the supporting legs. As a consequence, the removal of one or more of the bottom cylinders of the section has necessarily entailed the prior removal of one or more upper cylinders, after which, the bottom cylinder has then usually been lifted vertically upward through the space created by removing said upper cylinder or cylinders. This method of removing the bottom cylinders of the section has been both burdensome and time-consuming, with consequent uneconomical delay in the operation of the textile apparatus itself which seriously interferes with the efficient and expeditious use of the machine.

Accordingly, it is an object of this invention to provide a cylinder section for textile apparatus or the like having a frame which permits the independent support of the upper and lower cylinders respectively.

It is another object of this invention to provide a cylinder section for a textile apparatus wherein each cylinder of the section is individually removable from the section without the prior removal of any other of the cylinders of the section.

It is another object of this invention to provide a cylinder section for textile apparatus having a detachable support means for the lower cylinders of the section.

Other objects and attendant advantages of the invention will become apparent hereinafter and in the drawings, wherein:

FIG. 1 is a view in side elevation of a cylinder section of a slasher apparatus as provided in accordance with this invention;

FIG. 2 is a sectional view of the cylinder section taken as indicated by the lines and arrows II—II of FIG. 1;

FIG. 3 is a sectional view of the cylinder section taken as indicated by the lines and arrows III—III of FIG. 1.

The following description is directed to the specific form of the cylinder section as shown in the drawings and is not intended to be addressed to the scope of the invention itself, which is capable of being practiced in a wide variety of forms and arrangements.

Adverting herewith to the specific form of the invention illustrated in the drawings, the numeral 10 designates generally the cylinder section of a slasher apparatus, or the like, for the drying of a continuous run of textile material, which may be threaded through the section in any conventional manner. The cylinder section 10 includes a frame 11 which is formed in part of a pair of parallel bridging cross-pieces 12 and 12' which are supported at the extreme ends thereof by vertical legs of which legs 13 and 14 are shown in FIG. 1.

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Intermediate the legs 13 and 14 at the extreme ends of the cross-piece 12 of the frame 11 are auxiliary supporting legs 15, 16, 17, and 18. In like manner, auxiliary legs for the support of a parallel cross-piece 12' of the frame 11 are positioned directly opposite the legs 15, 16, 17, and 18 of which legs 15' and 17' may be seen in FIGS. 2 and 3, respectively. Upper cylinders or cans 21, 22, 23, and 24 are supported by the cross-pieces 12 and 12' and, as may be seen in FIG. 1, are journaled in bearings 26, 27, 28, and 29 which are equidistantly attached to the cross-piece 12 by bolts 31, 32, 33, and 34, respectively. The cylinders or cans 21, 22, 23, and 24 are similarly journaled in bearings positioned equidistantly on the cross-piece 12' opposite each of the aforementioned enumerated bearings. In FIG. 2, the shaft 35 of the upper cylinder 21 is shown journaled in bearing 26' which is secured to the top surface of the cross-piece 12' by means of bolt 31' and likewise, in FIG. 3, shaft 36 of upper cylinder 23 is shown journaled in bearing 28' which is secured to the top surface of the cross-piece 12' by bolt 33'. Also supported by the bridge cross-pieces 12 and 12' of the frame 11 are guide rollers 38 and 39 which, as may be seen in FIG. 1, are respectively journaled in bearings 40 and 41 affixed to the cross-piece 12.

Lower cylinders 45, 46, and 47 are journaled respectively in bearings 48, 49, and 50 positioned centrally in the intermediate supporting legs 15, 16, and 17. The lower cylinders 45, 46, and 47 are similarly journaled on the opposite side in like bearings positioned correspondingly in the opposite intermediate legs supporting the cross-piece 12'. In FIG. 2, shaft 51 of lower cylinder 45 is shown journaled in bearing 48' provided for that purpose centrally of the intermediate leg 15', and likewise in FIG. 3 bearing 50' is provided for shaft 52 of cylinder 47 in intermediate leg 17'. As may be clearly seen in FIGS. 1 and 3, the cylinder or can 23 is provided with a drive pulley 53 and the lower cylinder 46 is likewise provided with a drive pulley 54.

The supporting legs 13 and 14 at the opposite ends of the frame 11 and the intermediate supporting legs 15, 16, 17, and 18 are provided respectively with horizontal support plates or feet 55, 56, 57, 58, 59, and 60, and the intermediate legs 15, 16, 17, and 18 are further provided with outwardly extending flanges 62, 63, 64, and 65 at the tops thereof. Corresponding outwardly extending flanges 67, 68, 69, and 70 are provided at the bottom edge of the cross-piece 12 to abut against the flanges 62, 63, 64, and 65, respectively. As may be seen in FIG. 1, bolts 72, 73, and 74 extend through the flanges 62 and 67, 63 and 68, and 65 and 70, respectively, to secure the legs 15, 16, and 18 in their normal supporting positions beneath the cross-piece 12. It will be understood that bolts also normally extend through flanges 64 and 69 to secure the leg 17 in its normal supporting position beneath the cross-piece 12. The corresponding intermediate legs supporting the cross-piece 12' are bolted thereto and as shown in FIG. 2, bolt 72' extends through flange 67' of cross-piece 12' and through flange 62' of intermediate leg 15'.

And as may be seen in FIG. 3, a flange 69' is provided at the lower edge of the cross-piece 12' and a flange 64' is provided at the top of the intermediate leg 17' for the bolting of the aforesaid leg to the aforesaid cross-piece in like manner as with the other legs.

It will be appreciated that the end legs of the frame 11 are also bolted to the cross-pieces 12 and 12' of the frame in like manner as each of the intermediate legs; in FIG. 1, for example, part of the figure is broken away to show the manner in which the end leg 14 is connected to the cross-piece 12. A flange 80 is provided at the top portion of the leg 14 which coincides with a

flange 81 formed on the cross-piece 12. The flanges 80 and 81 are bolted together by means of bolts 82.

Ordinarily in the practice of this invention any one of the upper cylinders 21, 22, 23, and 24 can readily be removed individually from the frame 11 by removing the bolts 31, 32, 33, and 34 from the bearing stands 26, 27, 28, and 29, respectively and lifting the cylinder from the frame. Likewise any of the lower cylinders 43, 46, and 47 can be removed from the cylinder section 10 by removing one or more of the legs 15, 16, 17, or 18, or one of the corresponding opposite legs supporting the cross-piece 12'. FIG. 1 shows one manner of removing a lower cylinder from the frame 11. The intermediate supporting leg 17 has been removed from the frame 11 by releasing the bolts from the flanges 64 and 69 and moving the leg together with the bearing 50 outwardly from the frame. The manner of removal of the legs 17 and 17' from their positions beneath the cross-pieces 12 and 12', respectively, is illustrated in FIG. 3. Prior to the removal of one or more of the intermediate legs, as illustrated, a dolly 85 or similar cushioning device is preferably placed beneath the cylinder 47 for the support of that cylinder after the bearings 50 and 50' have been removed from the ends of the shaft 52. Upon removal of the leg 17 as illustrated in FIG. 1, the dolly 85 and lower cylinder 47 may then be rolled sidewise from the frame through the open space provided by the removal of the leg 17. It will be appreciated that not only may any of the cylinders supported by the intermediate legs of the frame be removed in the manner afore-described, but also any cylinders which may be supported by the end legs 13 and 14 may similarly be removed, if so desired. As may be seen in FIG. 1, the end legs 13 and 14 are respectively provided with bearings 86 and 87 for the support of additional end cylinders (not shown).

From the foregoing, it will be evident that it is an important and advantageous feature of the cylinder section, as provided in accordance with this invention, that the support frame for the upper cylinders thereof is constructed to bridge the lower cylinders which are themselves supported independently so that any of the lower cylinders or upper cylinders of the entire section may be individually removed from the cylinder section without disturbing any other cylinder, and, in particular, so that the lower cylinders of the section may be removed from the frame 11 without the removal of any of the upper cylinders in the section.

Although this invention has been described with reference to specific forms and embodiments thereof, it will be evident that a great number of variations may be made without departing from the spirit and scope of this invention. For example, parts may be reversed, equivalent elements may be substituted for those specifically disclosed and certain features of the invention may be used independently of other features, all without departing from the spirit and scope of this invention, as defined in the appended claims.

Having thus described my invention, I claim:

1. In a textile drying apparatus having a base and a frame supporting a plurality of drying cylinders above said base so that any cylinder can be removed without disrupting the remaining structure, the combination comprising a pair of substantially parallel bridge supports extending the entire length of the apparatus, opposing pairs of supporting end legs holding the bridge supports at a selected distance above the base of the apparatus, a plurality of upper drying cylinders carried by said bridge supports and arranged in spaced relation with the axes thereof being substantially parallel, a plurality of opposing pairs of intermediate standards disposed between said end supporting legs and each detachably secured at the upper end thereof to one of said pair of bridge supports, said standards each extending to the base of said apparatus and arranged for individual separation and removal from the bridge supports without removal of the upper drying cylinders, and a plurality of lower drying cylinders supported by said opposing pairs of intermediate standards and arranged in spaced relation with the axes thereof being substantially parallel, each of said lower drying cylinders being arranged for removal from said apparatus in a direction along its own axis when its corresponding intermediate standard is removed.

2. The drying apparatus as defined in claim 1 wherein a plurality of extending flanges are positioned along the bottom of each bridge support, each of said intermediate standards being detachably connected to one of said flanges.

References Cited in the file of this patent

UNITED STATES PATENTS

1,113,908	Pope	Oct. 13, 1914
1,752,949	Hinneken	Apr. 1, 1930
2,263,547	Harris	Nov. 18, 1941
2,330,891	Hornbostel	Oct. 5, 1943
2,341,504	Learnard	Feb. 8, 1944