

Nov. 3, 1931.

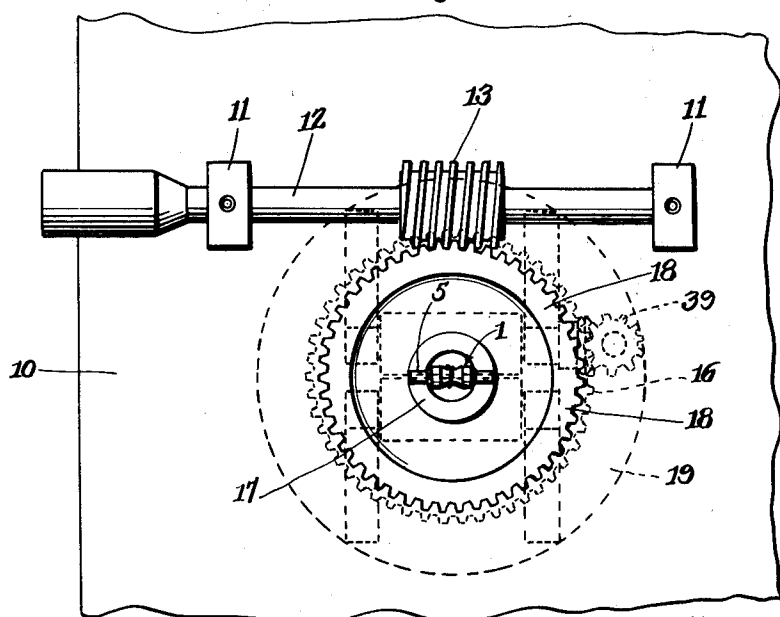
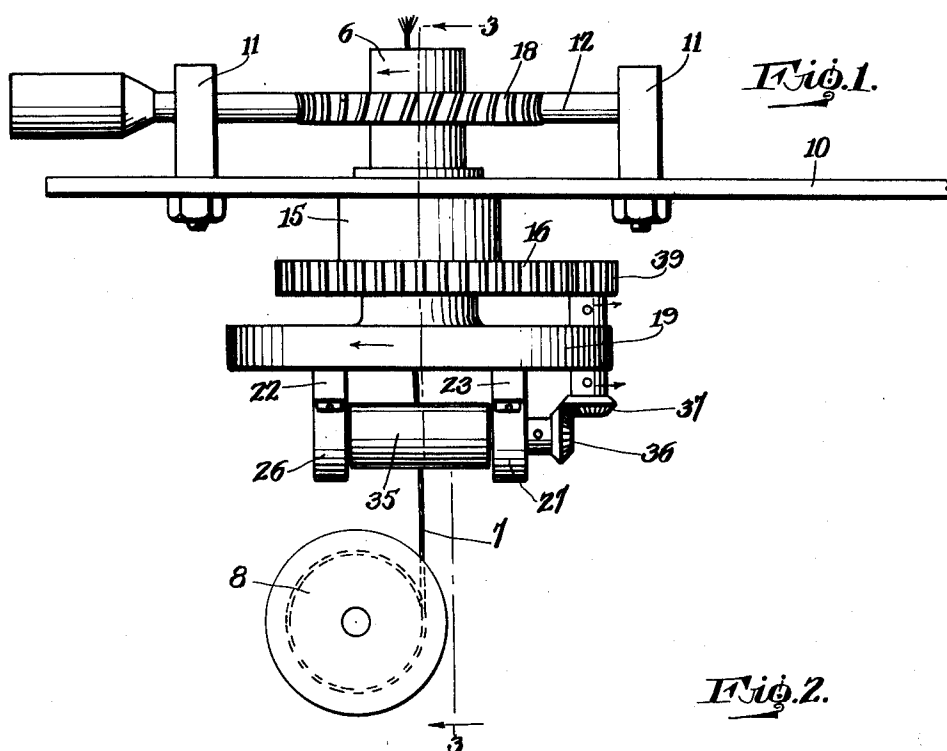
W. WIESE

1,830,728

TWISTER MECHANISM

Filed April 21, 1931

2 Sheets-Sheet 1



Inventor

William Wiese

By

Geo. P. Kimmel
Attorney

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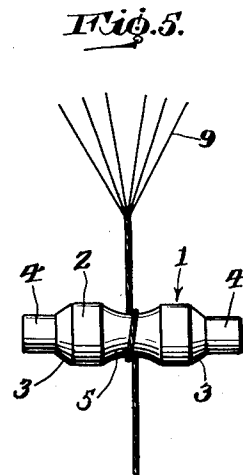
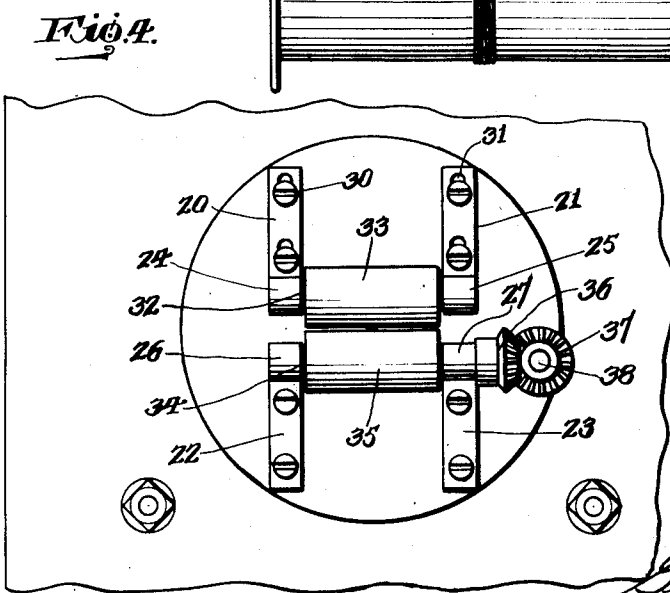
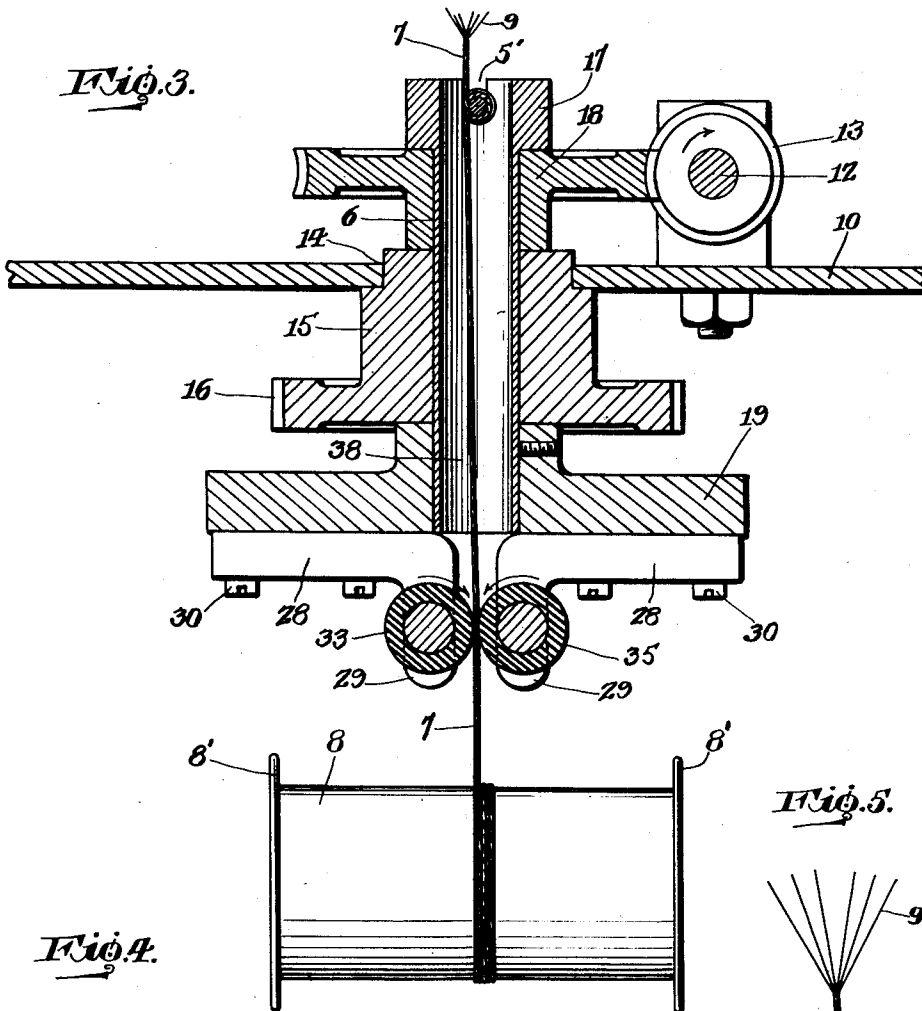
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TWISTER MECHANISM

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2 Sheets-Sheet 2



Inventor
William Wiese

Geo. P. Kimmel
Attorney

UNITED STATES PATENT OFFICE

WILLIAM WIESE, OF CLEVELAND, OHIO

TWISTER MECHANISM

Application filed April 21, 1931. Serial No. 531,797.

This invention relates to a twister mechanism designed primarily for use in connection with spinning machines for twisting yarns to produce thread, but it is to be understood that a twister mechanism in accordance with this invention may be employed in any connection for which it may be found applicable, and the invention has for its object to provide, in a manner as hereinafter set forth, a mechanism of the class referred to for effectively twisting together two or more yarns or filaments of flax, cotton, silk or other fibrous substance to produce thread of the desired cross sectional width as the yarn is fed from the spool of a spinning machine.

Further objects of the invention are to provide, in a manner as hereinafter set forth, a mechanism for the purpose referred to which is simple in its construction and arrangement, strong, durable, compact, thoroughly efficient in its use, readily installed with respect to a spinning machine, operated from the driving shaft of the spools of a spinning machine, producing a uniform thread, expeditiously repaired when occasion requires, and inexpensive to manufacture.

With the foregoing and other objects in view, the invention consists of the novel construction, combination and arrangement of parts as hereinafter more specifically described, and illustrated in the accompanying drawings, wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which fall within the scope of the invention as claimed.

In the drawings wherein like reference characters denote corresponding parts throughout the several views:—

Figure 1 is a side elevation of a twister mechanism in accordance with this invention.

Figure 2 is a top plan view thereof.

Figure 3 is a section on line 3—3 Figure 1.

Figure 4 is an inverted plan of the thread holder.

Figure 5 is an elevation of the twister spool.

The mechanism includes a twister head referred to generally at 1 and comprises a roll 2 formed with tapered ends 3. Projecting

from each end of the roll 2 is a pintle 4. The roll 2 centrally thereof has an annular peripheral groove 5 of concave cross section.

The pintles 4 of head 1 are revolubly mounted in diametrically opposed cutouts or grooves 5' formed in the flanged upper end of a vertically disposed hollow rotatable twister shaft 6. The head 1 is revolved on its longitudinal axis as the thread 7 is formed and as the thread 7 travels towards a revoluble holder therefor. The holder is indicated at 8. The head 1 also revolves horizontally on a vertical axis, as it is carried with the shaft 6 and this movement of the head and shaft twists the yarns 9 as they are fed from the spools of the spinning machine.

The twister mechanism also includes a supporting plate 10 provided in its upper face with a pair of spaced opposed bearings 11 in which is journaled the operating shaft of the mechanism and such shaft is indicated at 12 and is provided with a worm 13. The shaft 12 is connected in a suitable manner to the shaft of the spools of the spinning machine. The connection is not shown but preferably it will be by gear arrangement. The plate 10 is also formed with an opening 14 through which extends the shouldered hub 15 of a stationary gear 16. The hub 15 is fixedly secured to plate 10 and projects above the upper face thereof. The flange at the upper end of shaft 6 is indicated at 17 and abutting thereagainst is a worm gear 18 which seats upon the top of the hub 15. The gear 18 is fixed to the shaft 6 and is driven from the worm 13 thereby providing for the operation of the twister shaft 6.

The shaft 6 depends below the gear 15 and has fixedly secured to its lower end a turn table 19 which has secured to its lower face two pair of straps and each strap has its inner end formed with a bearing. The straps of one pair are indicated at 20, 21 and the straps of the other pair at 22, 23. The strap 20 opposes the strap 22 in spaced relation and the strap 21 opposes the strap 23 in spaced relation. The bearings at the inner ends of the straps 20, 21, 22 and 23 are indicated respectively at 24, 25, 26 and 27. Each of the straps is of angle shaped cross section forming a

horizontally disposed arm 28 and a vertically disposed arm 29. The bearings are formed on the vertically disposed arm of the straps. Holdfast means 30 are provided for securing the straps to the turn table 19. The straps are slotted as at 31 whereby the straps of one pair can be adjusted relative to the straps of the other pair.

Journalled in the bearings 24, 25 is a shaft 32 provided with a rubber roller 33. Journalled in the bearings 26, 27 is a shaft 34 provided with a rubber roller 35. The shaft 34 is extended from the bearing 27 and carries on its projecting end a beveled gear 36, which meshes with a beveled gear 37 carried on the lower end of a shaft 38 which extends up through the turn table 19 and carries a bevel gear 39 permanently meshing with the fixed gear 16. The shaft 6 provides a passage 38 for the thread as it passes off head 1 and travels in a direction toward the rollers 33, 35.

The function of the rollers 33, 35 is to pull the thread 7 across the head 1. The shaft 12 is operated at the same speed as the spools of the spinning machine. The worm gear 18 revolves in the direction of the arrow Figure 1. The turn table 19 turns in the direction of the arrow Figure 1. The gears 37, 39 turn in the direction of the arrows Figure 1. The rollers 33, 35 turn in the direction of the arrows Figure 3.

The yarns 9 are fed from the spools on the spinning machine and after the yarns are twisted into a thread, the latter is looped around head 1, passes through shaft 6 and between rollers 33, 35, and is then wound upon the holder 8, the latter being operated in the desired manner and by any suitable means. The holder 8 is flanged at each end as at 8' and said holder is in the form of a spool.

What I claim is:—

1. A twister mechanism comprising a hollow, rotatable twister shaft providing a thread passage, operating means for the shaft, a revoluble yarn twister roll mounted in the upper end of and bodily carried with said shaft for twisting the yarns into a thread and for winding and unwinding successive lengths of the thread thereon and thereof, a turn table bodily carried by said shaft, opposed rotatable rollers carried by said turn table for pulling the thread from off said roll, driving means for said pulling rollers connected to the turn table, means for operating said driving means, and said roll provided with a peripheral groove of concave cross section.

2. A twister mechanism comprising a hollow, rotatable twister shaft providing a thread passage, operating means for the shaft, a revoluble yarn twister roll mounted in the upper end of and bodily carried with said shaft for twisting the yarns into a thread and for winding and unwinding successive lengths of the thread thereon and thereof, a turn

table bodily carried by said shaft, opposed rotatable rollers carried by said turn table for pulling the thread from off said roll, driving means for said pulling rollers connected to the turn table, means for operating said driving means, a combined thread winding and holding means arranged below said rollers, and said roll provided with a peripheral groove of concave cross section.

3. A twister mechanism comprising a hollow, rotatable twister shaft providing a thread passage, operating means for the shaft, a revoluble yarn twister roll mounted in the upper end of and bodily carried with said shaft for twisting the yarns into a thread and for winding and unwinding successive lengths of the thread thereon and thereof, a turn table bodily carried by said shaft, opposed rotatable rollers carried by said turn table for pulling the thread from off said roll, driving means for said pulling rollers connected to the turn table, means for operating said driving means, said roll provided with a peripheral groove of concave cross section, and means for adjusting said rollers relatively to each other.

4. A twister mechanism comprising, a hollow, rotatable twister shaft providing a thread passage, operating means for the shaft, a revoluble yarn twister roll mounted in the upper end of and bodily carried with said shaft for twisting the yarns into a thread and for winding and unwinding successive lengths of the thread thereon and thereof, a turn table bodily carried by said shaft, opposed rotatable rollers carried by said turn table for pulling the thread from off said roll, driving means for said pulling rollers connected to the turn table, means for operating said driving means, a combined thread winding and holding means arranged below said rollers, said roll provided with a peripheral groove of concave cross section, and means for adjusting said rollers relatively to each other.

5. A twister mechanism comprising a hollow, rotatable twister shaft providing a thread passage, operating means for the shaft, a revoluble yarn twister roll mounted in the upper end of and bodily carried with said shaft for twisting the yarns into a thread and for winding and unwinding successive lengths of the thread thereon and thereof, a turn table bodily carried by said shaft, opposed rotatable rollers carried by said turn table for pulling the thread from off said roll, a gear drive for said rollers, said drive carried by the turn table, a stationary gear above said turn table for operating said drive, and said roll having an annular peripheral groove of concave cross section.

6. In a thread twister mechanism, a vertically disposed hollow, rotatable twister shaft providing a thread passage and being formed at its upper end with an outwardly directed flange and in its upper edge with

5 diametrically disposed spaced, opposed
grooves extending from its inner face to the
outer edge of the flange, a driving gear for
and fixed to said shaft below said flange, a
10 revoluble yarn twister roll disposed diametri-
cally of said shaft, mounted in said grooves
and bodily carried with said shaft for twist-
ing the yarns into a thread and for winding
and unwinding successive lengths of thread
15 thereon and thereof, a stationary gear encom-
passing said shaft below said driven gear, a
turn table fixedly secured to the shaft below
said stationary gear, opposed rotatable rollers
suspended from the turn table for pulling the
20 thread from off said roll, a rotatable shaft
journalled in and bodily carried by the turn
table, a roller driving connection between one
of said rollers and the lower end of the second
shaft, and driving means operated from the
stationary gear for and on the upper end of
said second shaft.

In testimony whereof, I affix my signature
hereto.

WILLIAM WIESE.