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H. TSCHUDY

DRAWING FRAME FOR SPINNING MACHINERY

Filed June 11, 1924

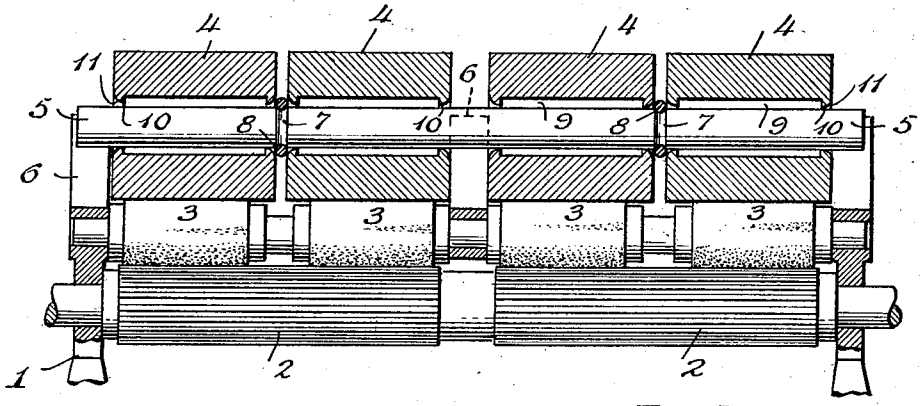


Fig. 1.

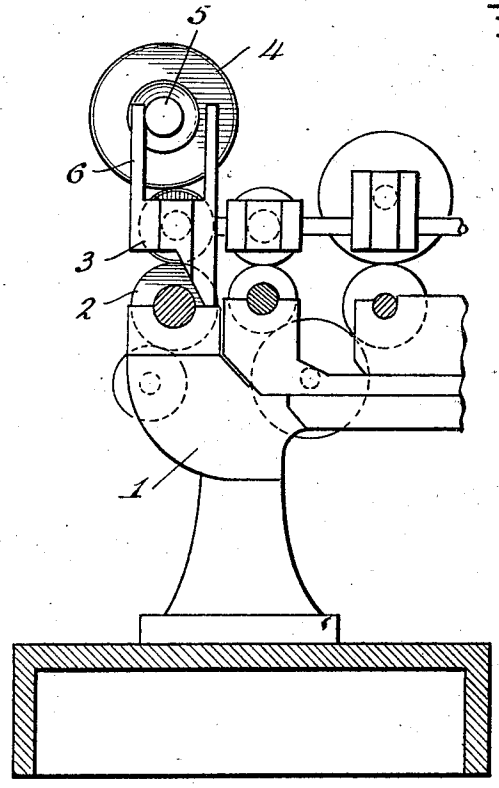


Fig. 2.

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UNITED STATES PATENT OFFICE.

HEINRICH TSCHUDY, OF ENNENDA, SWITZERLAND, ASSIGNOR TO TSCHUDY SPINNING CORPORATION, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

DRAWING FRAME FOR SPINNING MACHINERY.

Application filed June 11, 1924. Serial No. 719,231.

To all whom it may concern:

Be it known that I, HEINRICH TSCHUDY, a citizen of the Republic of Switzerland, residing at Ennenda, Canton of Glarus, and Republic of Switzerland, have invented certain new and useful Improvements in Drawing Frames for Spinning Machinery, of which the following is a specification.

This invention relates to drawing frames for spinning machinery, and particularly to means for weighting and cleaning the upper front drawing rolls of flyer frames, and spinning frames.

In such devices, it has been the practice to employ upper and lower front drawing rolls, a pair of intermediate rolls, and a pair of back rolls, all of said rolls being supported upon a frame, and driven in a manner well known in the art.

The lower front drawing roll is generally fluted, and the upper front drawing roll covered with leather, rubber, or other material, having similar capabilities.

Means have been employed for weighting the leather covered upper front drawing rolls, said means consisting formerly of weights supported directly by hooks, or otherwise from said rolls, or in connecting pivoted levers to the rolls, by means of links or otherwise, and in providing the levers with weights, so as to exert a downward pressure, on the upper front leather covered drawing rolls.

The weights connected respectively with the upper drawing rolls were generally mounted upon a common shaft, or supported from a saddle, which in turn was supported upon said rolls.

Light wooden cloth covered cleaning rolls resting upon the upper drawing rolls were employed to remove the "fly" which accumulates upon the upper drawing rolls. Such cleaning rolls served only to clean the rolls, the weighting of the front rolls being accomplished by said weights and levers.

Means for weighting the front drawing rolls have heretofore been devised consisting of a single heavy cloth covered weighting and cleaning roll resting upon the upper of the two front drawing rolls as shown in Letters Patent issued to me Oct. 2, 1923, Number 1,469,548.

In carrying out the invention shown in said Letters Patent, the lower front drawing roll was fluted longitudinally and the upper front drawing rolls were covered with leather in the usual manner, and a single heavy cloth covered roll extended over two leather covered drawing rolls.

In practice it has been found to be impossible to produce leather covered front drawing rolls of exactly uniform outer diameters, due to the fact that the leather made from an animal's skin is of varying thickness.

The cloth, moreover, which is placed under the leather as an elastic cushion, cannot always be made by a cylinder manufacturer with exactly the same glue or paste, and cannot always be applied with the same evenness and uniformity.

For these reasons, there arise different and varying diameter measurements in different upper drawing rolls.

Under such conditions I have found that when a single heavy combined weighting and cleaning roll is supported on the two front upper leather covered drawing rolls, the single weighting and cleaning roll does not bear evenly or uniformly over said upper front drawing rolls, and consequently the leather covered drawing rolls do not bear evenly and uniformly on the lower fluted front drawing roll, and it commonly happens that there is a conical "rolling off" of the thread passing between the front drawing rolls.

The main object of the present invention therefore, is to provide means for weighting the upper front drawing rolls of a spinning frame in such a manner as to produce an even bearing pressure on said rolls and cause said rolls to bear evenly and uniformly on the lower fluted front drawing roll.

A further object of the invention is to provide weighting rolls capable of bearing evenly and uniformly on the upper front drawing rolls of a spinning frame, and at the same time be provided with means adapting said roll to clean the upper front drawing roll.

These and other objects of the invention are accomplished by the means hereinafter described, and illustrated in the accompanying drawing, in which is shown a preferred embodiment of the invention, but it is to be understood that changes, modifications and alterations may be made therein without departing from the invention.

As illustrated in the drawings:

Fig. 1 is a front elevation of the upper and lower front drawing rolls of a spinning frame, and a vertical longitudinal section of a weighting and cleaning roll.

Fig. 2 is a side elevation of a spinning frame of well known construction, having mounted thereon the front drawing rolls and weighting roll shown in Fig. 1.

As shown in the drawings, 1 indicates the main frame of a spinning machine which may be of any suitable construction having lower front drawing rolls 2 supported thereon, in suitable bearings. The lower drawing rolls are preferably fluted in the usual manner.

Upper front drawing rolls 3 are also mounted in suitable bearings on the main frame, and bear upon the lower drawing roll 2 preferably with the center of the shaft of the upper drawing rolls in vertical alignment with the center of the shaft of the lower front drawing rolls, as shown in Fig. 2.

Weighting rolls 4 are freely mounted upon a shaft 5 journalled in the main frame in bearings or guides 6 of suitable construction, with the center of said shaft offset from the vertical plane of the center of the shaft of the upper and lower drawing rolls, as shown in Fig. 2.

The shaft 5 is provided with annular grooves 7 that receive a split ring 8 to space the weighting rolls 4 apart and prevent inward longitudinal movement of said rolls on the shaft 5.

A central bracket 6 bearing at its edge against said weighting rolls 4 prevents longitudinal movement of said weighting rolls in the opposite direction.

The interior of the bore of the weighting rolls 4 is cut away or enlarged as at 9, so as to form annular shoulders 10 which bear on the shaft 5 and thereby reduce the frictional contact between said shaft and the ends of said rolls.

If desired the shoulders 10 may be curved or beveled on their outer surface as indicated by 11, forming annular recesses between said shoulders and shaft 5 for the reception of a lubricant.

Thus, instead of having a single weighting roll bearing against the periphery of two upper drawing rolls, or against two sections of one drawing roll, as in prior constructions, the present invention contemplates the use of one weighting roll for each upper drawing roll, or for each section of a double drawing roll, if a double upper drawing roll is used.

By means of such construction, a weighting roll is enabled to bear evenly and uniformly against an upper drawing roll, and in cases where there is any variation in outer diameter between two adjacent drawing rolls, the weighting roll will not bear against only high portions of said drawing rolls, and to a different extent on the intermediate portions, as in prior constructions, but on the contrary will bear evenly and uniformly on the drawing rolls throughout their entire length.

The bore or opening in the ends of the weighting rolls 4 is preferably made slightly larger in diameter than the shaft 5 in order that the pressure of the rolls 4 may be applied evenly to the top drawing rolls by virtue of their own weight, and without any downward pressure being exerted thereon by the shaft 5.

While the main purpose of the rolls 4 is to exert a pressure on the front drawing rolls of a spinning machine, said rolls may also be used as cleaning rolls by covering said rolls with cloth or other suitable material if desired.

When said weighting rolls are not so covered, or used as cleaning rolls, the top rolls may be cleaned in any other suitable manner.

In some cases it is desirable to increase the weight of the weighting roll beyond that ordinarily used without changing the dimensions of the weighting roll. That may be accomplished by drilling apertures into the ends of the weighting roll and filling said apertures with lead or other heavy material, or by means of lead heads or disks attached to the ends of the weighting rolls or by any other suitable means.

What I claim is:

1. In a spinning machine, the combination with upper front drawing rolls, a shaft, and a weighting roll individual to and bearing upon each of said drawing rolls and freely mounted upon said shaft.

2. In a spinning machine, a mounting including supporting bearings, a plurality of upper drawing rolls mounted therebetween, a shaft supported in said bearings, and a plurality of weighting rolls freely mounted on said shaft and each individual to one of said drawing rolls.

3. In a spinning machine, the combination of upper front drawing rolls, a weighting roll individual to each of said upper rolls, a shaft supporting said weighting rolls, and means on said shaft and interposed between adjacent weighting rolls for preventing longitudinal movement of said weighting rolls toward each other.

4. In a spinning machine, the combination of upper and lower front drawing rolls, a shaft, and a weighting roll having end flanges bearing on said shaft, said weighting roll bearing upon only one upper drawing roll.

5. In a spinning machine, the combination of upper front drawing rolls, a weighting roll individual to each of said upper

rolls, a shaft supporting said weighting rolls, and split rings encircling said shaft and interposed between adjacent weighting rolls for preventing longitudinal movement of the weighting rolls toward each other.

6. In a spinning machine, the combination of upper front drawing rolls, a shaft, and a weighting roll individual to each of said drawing rolls, said weighting roll having end flanges bearing on said shaft.

In testimony whereof I have affixed my signature.

HEINRICH TSCHUDY.