Aug. 18, 1936. F. CASABLANCAS 2,051,793

CLEANING APPARATUS FOR HIGH DRAFT MECHANISMS WITH ENDLESS BELTS

Filed March 18, 1933 2 Sheets-Sheet 1

FIG. 1.

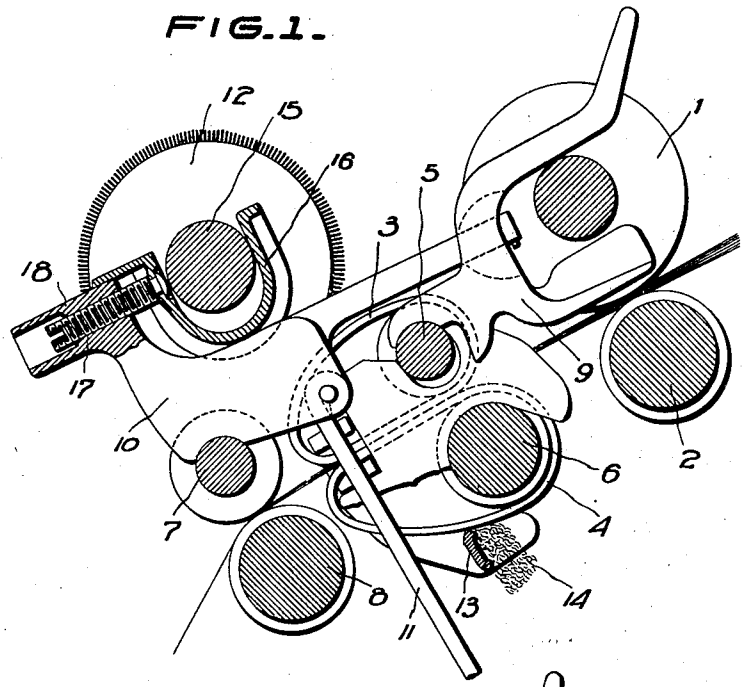
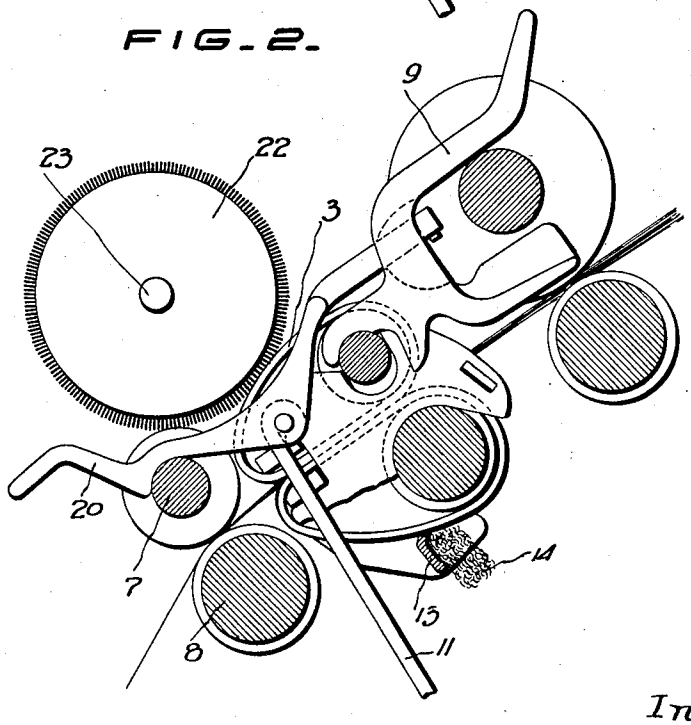


FIG. 2.



Inventor
Fernando Casablancas
by Wilkinson & Mawhinney
Attorneys.

Aug. 18, 1936. F. CASABLANCAS 2,051,793

CLEANING APPARATUS FOR HIGH DRAFT MECHANISMS WITH ENDLESS BELTS

Filed March 18, 1933 2 Sheets-Sheet 2

FIG. 3.

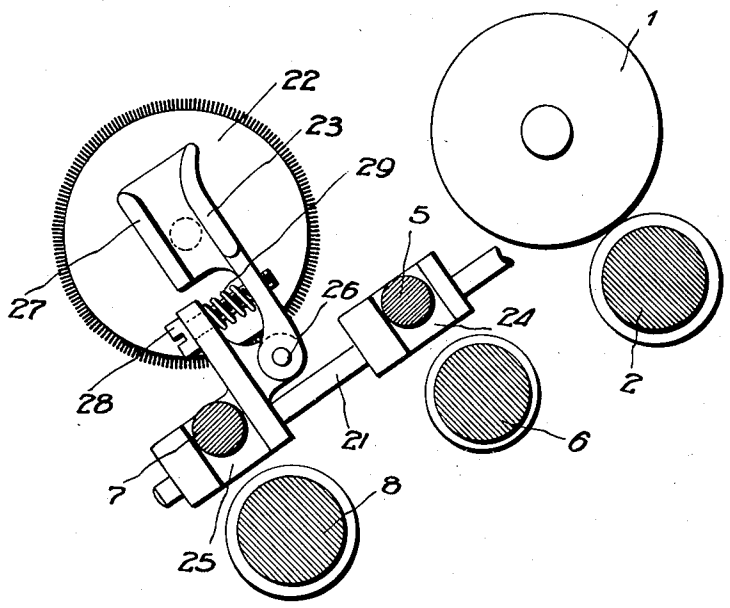


FIG. 4.

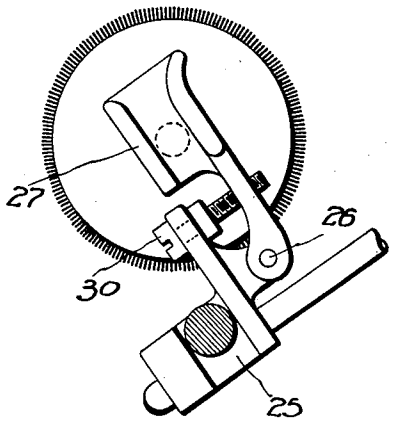
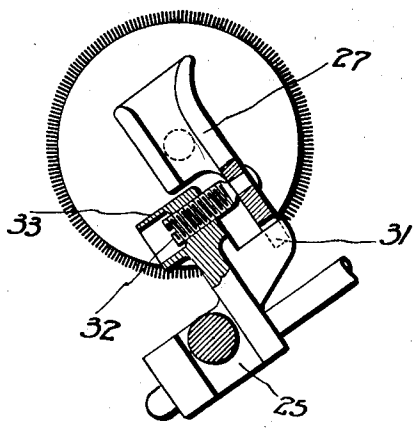


FIG. 5.



Inventor
Fernando Casablancas
by Wilkinson & Mawhinney
Attorneys.

Patented Aug. 18, 1936 2,051,793

UNITED STATES PATENT OFFICE

2,051,793

CLEANING APPARATUS FOR HIGH DRAFT MECHANISMS WITH ENDLESS BELTS

Fernando Casablancas, Sabadell, Spain

Application March 18, 1933, Serial No. 661,620
In Spain August 10, 1932

5 Claims. (Cl. 19—140)

In the drawing mechanisms of the high draft type in which the sliver is guided to the drawing rollers by means of a pair of endless belts, it is of the greatest importance to keep the belts or straps clean, thus avoiding the adherence to the belts of the waste fibres loosened from the roving because the adherence of the waste fibres on the belts would increase their thickness and would cause trouble in the working of same. These waste fibres in certain cases form on the external face of the belts a fibrous layer which on attaining a certain thickness falls off either in part or in all and mixes with the roving thus producing irregularities in the thread.

In the drawing mechanisms with rollers there are usually employed for cleaning the top and bottom cylinders, some clearers formed by cylinders covered with plush which revolve by the friction of the front or drawing rollers and which clean their surface. This system of utilizing a plush clearer which revolves by the friction of the same surface which it cleans has not given good results in practice for the cleaning of the endless straps or belts.

There has also been proposed an arrangement whereby the endless belts in their movement bear against a fixed transversal brush or bar, so that this scraping or friction of the belt with the brush or bar should result in the falling off of the waste fibres which have adhered to the surface of the belt. This has given good results for the lower strap or belt as the mass formed by the waste fibres which accumulate on this fixed bar or brush, when falling off reaches the ruler or table of the machine where it will do no damage, but if this system of cleaning is applied to the top belt what happens is that the waste fibres accumulated on the bar or brush, when they attain a certain volume fall on the belt itself which by its movement incorporates them to the roving which is introduced between the belts, thus producing breakages and damage.

With the apparatus of my invention there are avoided all these troubles and defects and there is obtained a perfect cleaning of the top belt or strap which results in a good drawing and improves the quality of the thread.

The improvements of my invention, consist in arranging a clearer formed by a cylinder covered with plush or any other appropriate material and of a relatively large diameter which rests only on the top drawing or front roller and is moved by friction by this roller and which at the same time touches slightly the surface of the top strap. This clearer as it is moved by the top front cylinder has a peripheral speed much greater than that of the strap and consequently even in the point of contact the strap and the clearer move in the same direction, the difference in speeds produces a friction of the clearer on the strap, which cleans perfectly the exterior surface of this. This plush clearer is arranged to be held or guided by a system of supports or guides of adjustable position in such a way that without losing contact with the top drawing cylinder this plush clearer may be advanced or withdrawn until it is in such a position that the plush bears lightly on the top strap or belt.

In this way, when the clearer or cleaning cylinder has intermediate collars by which it is held or guided by the same pressure saddles which bear on the drawing cylinders, these saddles are arranged in such a form that the support or U shaped piece in which the collar of the clearer enters shall have a position which can be adjusted with relation to the saddle. If it is not desired to use this method to avoid the necessity of making the clearers with intermediate collars, I make the pressure saddles of a reduced form which will not disturb the mounting of the clearers and arrange at convenient distances according to the length of these clearers some adjustable supports or guides mounted on the same supports of the top drawing rollers and in which there are fitted the end journals of the clearers.

In the drawings there are shown as examples two forms of construction of this cleaning apparatus.

Figure 1 represents the application of the invention to a high draft mechanism with straps or belts, in which the clearer or cleaning cylinder is held by the same pressure saddle.

Figure 2 represents the application of the invention to a similar mechanism, in which the pressure saddle is low and the clearer has no intermediate collars.

Figures 3, 4 and 5 represent different examples of adjustable supports for the clearer of Figure 2.

In the example of construction shown in Figure 1, the rollers 1, 2 are the back or feeding rollers and 3, 4 are the conducting straps, which are driven by rollers 5 and 6 and carry the roving to the front drawing rollers 7, 8.

These rollers are all loaded by a double pressure saddle formed in two parts, a rear part 9 which loads rollers 5 and 1 and a front part 10 which loads the drawing roller 7. These two

parts of the pressure saddle are coupled one to another and receive by means of the pressure rod 11 the action of the weight or spring to load the roller.

The bottom strap 4 is cleaned by arranging in the same frame holding the straps or belts a brace or transversal bar 13 which bears lightly on the bottom part of the strap. In this way by the movement of the belt or strap the small fibres which adhere to its surface go on accumulating on 14 behind the brace or bar 13 and when this accumulation attains a certain volume loosens itself and falls on the ruler or table of the machine.

For the cleaning of the top strap 3 there is arranged in this invention a clearer formed by a cylinder 12 covered with plush, which is situated approximately on the same vertical line of roller 7 and is dragged in its movement by this roller 7. The position of clearer 12 is conveniently adjusted in such a way that it touches very lightly on the surface of the strap 3 and as the peripheral speed of cylinder 12 is equal to that of roller 7 and consequently very much greater than that of strap 3, the difference in speeds causes this cylinder 12 to clean the strap completely.

It is advisable that this clearer 12 should only rest on roller 7 as if it should rest at the same time on the two rollers 5 and 7 it woud deform the loop or curvature of strap 3 upsetting the proper working of this.

Where the clearer is driven by two rollers revolving at different speeds, the same will prove harmful to the proper working of the apparatus, and the efficient cleaning results produced by applicant cannot be attained.

In the arrangement of Figure 1, it is presumed that this clearer 12 is provided with intermediate collars 15 by which it rests on the pressure saddles 10 in a similar manner to the clearers used in the drawing mechanisms with rollers. To this effect each one of the saddles 10 has a U-shaped piece or bracket 16 in which there meshes the collar 15 of the clearer, but this piece 16 instead of being joined invariaby to the sadde 10 is arranged according to this invention in such a way that it may move forwards or backwards, to adjust the position of the cylinder 12 with relation to strap or belt 3.

For this purpose the piece 16 is of stamped sheet metal forming a groove which engages the top part of the saddle 10 and carries fixed in such a manner that it can freely revolve, a screw 17 which is threaded in a prolongation 18 of saddle 10. In this way by turning screw 17 there can be moved forwards or backwards the piece 16 and thus there can be easily adjusted the position of clearer 12 in such a way that it bears lightly as has been previously stated on the exterior surface of strap or belt 3.

In Figure 2 there is shown a variation of construction in order to avoid having to arrange intermediate collars in the clearer. In this case the clearer or cleaning cylinder 22 is completely of the same diameter in all its length and only presents on the ends small journals 23 which fit in appropriate supports which preferably should be arranged at the supports of the top front or drawing rollers 7. In order to allow for the mounting of the cylinder 22 there has been given to the front part 20 of the pressure saddle a reduced form, but apart from this, its working is the same as that of the saddle shown in Figure 1.

On the bar 21 there are mounted in the usual way supports 24, 25 in which there are set the journals of the top rollers 5 and 7 such as is shown in Figure 3. Of these supports, the one 25 is of a special form and carries the support 27 for the journal 23 of the clearer 22. These supports 27 are of adjustable position and can adopt different forms of construction as is shown in three examples in Figures 3 to 5.

In the example of Figure 3 the support 27 for the clearer 22 is pivoted by a pin 26 on the support 25, in such a way that it may swing to adjust the position of cylinder 22. The position of the support 27 is adjusted by means of a screw 28 which is screwed in the support 27 and a spring 29 which forces the support towards the right in such a way that by turning the screw more or less there can be adjusted the position of support 27.

The arrangement of Figure 4 is very similar as the support 27 is also articulated in 26 on the support 25 and the only difference is that the position is adjusted by means of a screw 30 which is held in a slot of support 25 and which is screwed in the support 27. In this case as the screw 30 cannot move longitudinally in any sense, there is avoided the necessity of the spring 29.

In Figure 5 there is shown another form in which the support 27 moves in a forward or reverse direction instead of swinging on an axis. To this effect the support 27 is independent of support 25 and can slide on this duly guided by wings or prolongations 31. The support 27 carries a screw 32 mounted in such a way that it can revolve but not slide and this screw 32 is screwed in a prolongation 33 of support 25 in such a way that by turning this screw 32 one way or other, the support 27 moves to the right or to the left.

All of these arrangements provide for completely and exactly regulating the position of the clearer 22 relative to the top strap or belt 3, whereby the contact of the plush surface of the clearer lightly upon the top strap cleans the strap from the small fibres which may cling thereto.

I claim:

1. A cleaning apparatus for a textile drawing mechanism comprising an upper and a lower endless belt, an upper and a lower front drawing roller supported in close proximity to the belts, said endless belts being driven at a lower peripheral speed than the front rollers, a clearer mounted for movement above the upper roller and the upper belt, a bearing for said clearer provided with spaced guide walls to permit the downward movement of the clearer by gravity to engage with the upper front roller and to permit rotatably driving the clearer by the roller, a support for said bearing, and means for adjustably connecting the bearing relative to the support whereby the clearer contacts lightly upon the upper belt to clean the same due to the difference of peripheral speeds of driving the upper roller and the upper endless belt.

2. A cleaning apparatus for a textile drawing mechanism comprising an upper and a lower endless belt, an upper and a lower front drawing roller mounted in close proximity to said belts, a diametrically enlarged clearer rotatably mounted above said upper belt and upper drawing roller, and in alinement therewith, said clearer having a plurality of spaced and axially alined portions of a reduced diameter, a U-shaped bearing to straddle each of said reduced portions to provide a limited guideway for the downward movement of the clearer to frictionally contact with the upper roller for rotating the clearer, said U-shaped

bearing having its upper portion flanged outwardly, a support to engage the bottom and the flanged portion of said bearing, and a screw pin connection between the bearing and the support to move the clearer in a direction at right angles to the downward movement whereby the frictional engagement of the roller with the clearer also permits a light contact with the upper belt to clean the same.

3. A cleaning apparatus for a textile drawing mechanism comprising an upper and a lower endless belt, an upper and a lower front drawing roller mounted in close proximity to said belts, an elongated clearer above said upper roller and upper belt, said clearer having a journal at each of its ends, a bearing member to receive said journal provided with a short and an elongated arm connected together in spaced relation to form a guideway, the said bearing member directing the movement of the clearer downwardly to engage the upper roller, a support to provide a forwardly and a rearwardly spaced wall to mount the upper roller, the said rearwardly spaced wall having pivotally mounted thereto the lower end of the elongated arm, and a screw pin for adjusting and fixedly securing the bearing and support whereby to place the clearer in frictional driving position with the upper roller and in light contact with the upper belt for cleaning the same.

4. A cleaning apparatus for a textile drawing mechanism provided with upper and lower endless belts and upper and lower front drawing rollers, said endless belts being driven at a lower peripheral speed than the front rollers, comprising a cylindrical clearer of relatively large diameter having an outer cleaning surface, a bearing for said clearer provided with spaced members for guiding the downward movement of said clearer, and means for adjustably supporting said bearing to permit the clearer to frictionally contact with the upper front drawing roller, and to be rotated by the same, the said supporting means positioning the cleaning surface of the clearer to bear lightly upon the upper endless belt without retarding the movement of the belt, and to clean the same due to the difference of peripheral speed movements of the endless belt and the clearer.

5. In combination with a belt and a drawing roller driven at higher speed than the belt, a clearer, means for supporting said clearer to be driven by said drawing roller, a bearing for said clearer with spaced members for guiding the downward movement of said clearer, and adjustable means for said bearing to move the clearer toward and from the belt without imposing any substantial weight of the clearer upon the belt but being in clearing contact with the belt.

FERNANDO CASABLANCAS.