

(No Model.)

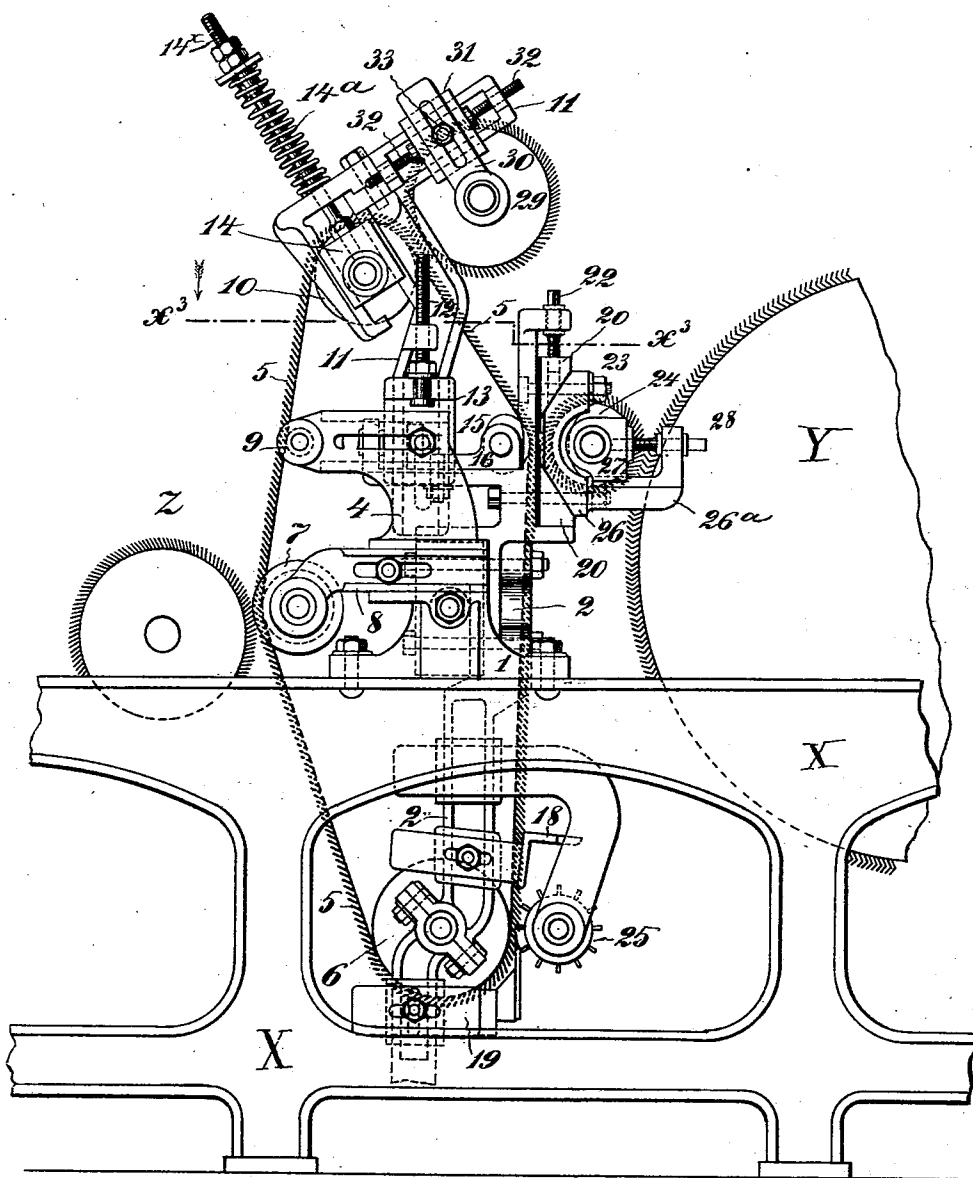
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G. RICHE & A. RIVRET.
APPARATUS FOR CLEANING WOOL, &c.

No. 562,975.

Patented June 30, 1896.

FIG. 1.



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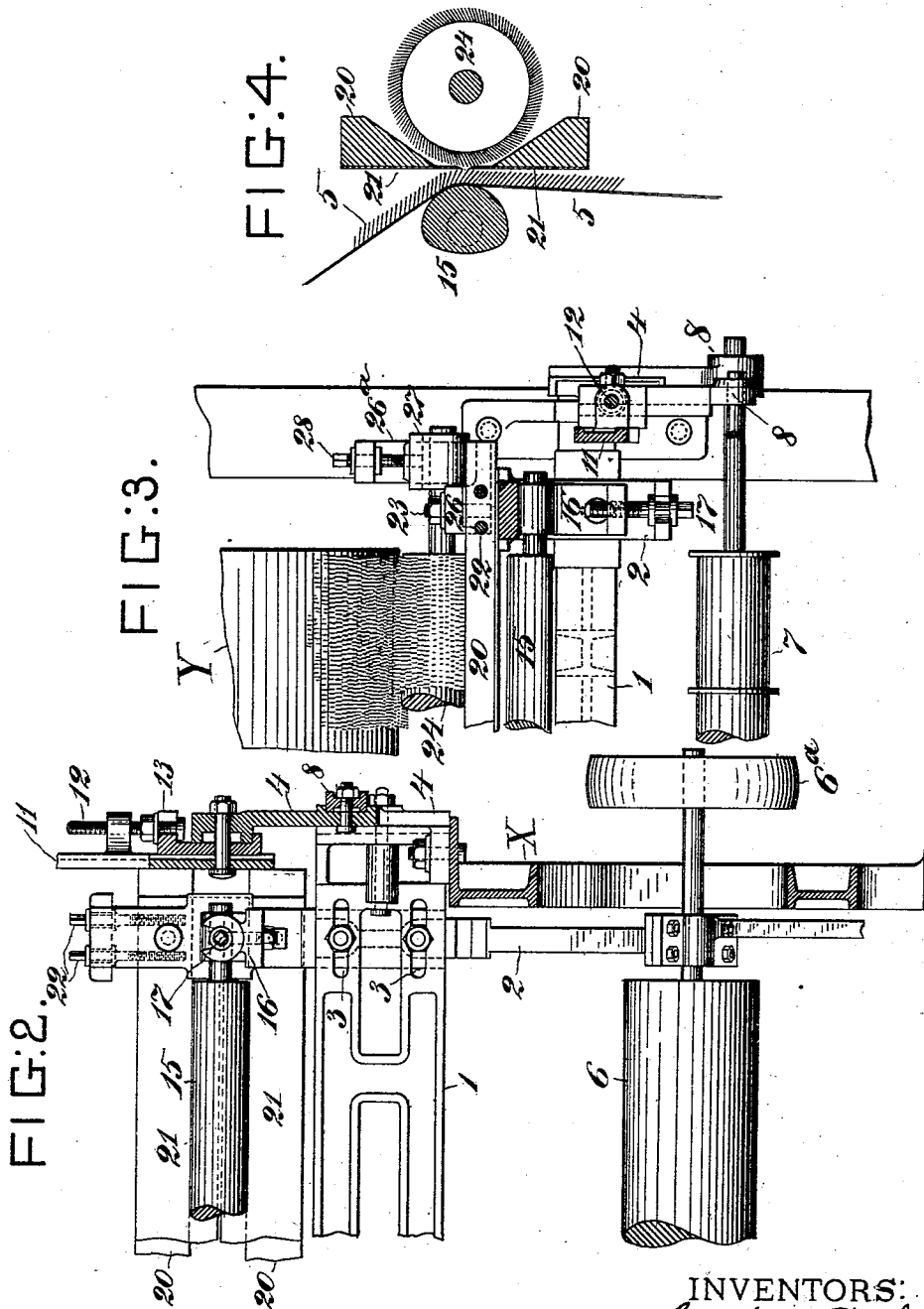
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APPARATUS FOR CLEANING WOOL, &c.

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WITNESSES:

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UNITED STATES PATENT OFFICE.

GUSTAVE RICHE AND ARMAND RIVRET, OF ROUBAIX, FRANCE.

APPARATUS FOR CLEANING WOOL, &c.

SPECIFICATION forming part of Letters Patent No. 562,975, dated June 30, 1896.

Application filed July 17, 1895. Serial No. 556,206. (No model.) Patented in France October 1, 1892, No. 224,602; in England September 12, 1894, No. 17,370; in Belgium September 14, 1894, No. 111,827; in Germany September 15, 1894, No. 81,238, and in Austria January 5, 1895, No. 45/48.

To all whom it may concern:

Be it known that we, GUSTAVE RICHE and ARMAND RIVRET, citizens of the French Republic, residing at Roubaix, (Nord,) France, have invented certain Improvements in Apparatuses for Cleaning Wool, &c., (for which patents have been granted to us in France, No. 224,602, dated October 1, 1892; in England, No. 17,370, dated September 12, 1894; in Germany, No. 81,238, dated September 15, 1894; in Belgium, No. 111,827, dated September 14, 1894, and in Austria, No. 45/48, dated January 5, 1895,) of which the following is a specification.

Our invention relates to an apparatus for mechanically cleaning wool and other fibrous materials, either in connection with the carding-machine or in connection with any machine used before or after carding, said apparatus being efficacious when the fibrous material has had no previous treatment for the purpose of crushing or breaking the burs, straws, slivers, or other foreign bodies that it is desired to remove, as well as after said material has been previously so prepared or treated.

The annexed drawings illustrate an embodiment of the apparatus, the same being susceptible of adaptation to a carding-machine or to any other machine without requiring many points of attachment.

Figure 1 is a side elevation of the apparatus. Fig. 2 is a sectional rear elevation of one end of the apparatus. Fig. 3 is a sectional plan of one end of the apparatus, the plane of the section being indicated by line x^3 in Fig. 1. Fig. 4 is an enlarged fragmentary sectional view showing the eccentric roller for vibrating the apron in its relation to the adjacent parts.

As both sides of the apparatus are alike it will suffice to illustrate and describe one side thereof.

X represents the frame of a machine on which the apparatus is mounted. This is a carding-machine, as represented in the drawings, and the improved apparatus is shown as mounted on the machine-frame X between

the main drum Y and the first train of the machine.

The mechanism of the apparatus is carried by a transversely-arranged beam, Figs. 2 and 3, which is flanged at its ends so that it may be seated and secured on the frame X.

2 is one of two supports mounted on the frame 1, near its ends, and adapted to be adjusted along said frame to the extent of the slots 3 in the latter, as seen in Fig. 2. The supports 2 are secured to the frame 1 by bolts, and are placed at the inside of the frame X.

In recessed seats in the respective ends of the beam 1 are secured supports 4, one being shown in the drawings.

The above parts constitute the fixed frame of the apparatus.

5, Figs. 1 and 4, is an endless apron made up of bands of card-clothing placed side by side and borne on rollers and drums rotatively mounted in the frame of the apparatus. The lower drum 6 is the driver. It has bearings in the pendent ends of the supports 2, and is driven through a pulley 6^a, fixed on the journal thereof, as seen in Fig. 2. The drum or roller 7 is mounted in adjustable brackets 8 on the supports 4 at the point where the apron receives the wool from the drum Z of the train of the carding-machine, and 9 is a guide-roller mounted in bearings on the supports 4.

At its upper part the apron 5 passes over a drum 10, carried by brackets 11, mounted adjustably in the respective supports 4. The bracket 11 is capable of vertical adjustment on the support 4, and this adjustment is effected by means of a screw 12, which has a collared bearing (see Figs. 1 and 2) in a flanged plate 13 on the support 4 and a screw-bearing in a lug on the bracket. The plate 13 may be adjusted or displaced laterally on the upper arm of the support 4, to which it and the bracket are secured by a clamp-bolt. The drum 10 has bearings in blocks 14, mounted in guides in the brackets 11, and to the block 14 is fixed a stem 14^x, on which is a tension-spring 14^a.

From the drum 10 the apron 5 passes down

toward the front of the apparatus over an eccentric roller 15. (Best seen in Fig. 4.) This may be an ordinary roller with its face cut away, as best seen in Fig. 4. This eccentric roller is rotatively journaled in blocks 16, which are mounted adjustably in guide-bearings in the respective supports 2, and adapted to be adjusted or operated by screws 17, collared in lugs on said supports. Mounted on these rollers and drums, the endless apron 5 may be strained to the proper extent by means of the screw 12, the strips of card-clothing of which it is made being guided and kept straight by guides 18 and 19, and by guiding-flanges on the rollers 7 and 9.

Mounted on the supports 2 and extending across the apparatus from side to side are two bars 20 20, (seen in cross-section in Fig. 4,) which carry, respectively, plates 21 21, preferably of steel and arranged edge to edge, but with a narrow slot or space between said edges. The lower bar 20 is fixed, but the upper bar is mounted so as to be capable of adjustment up and down, collared regulating-screws 22 being employed to move it and screws 23 to clamp it fast when adjusted. The slot or space between the plates 21 is arranged substantially opposite and at the level of the axis of the eccentric roller 15, and as this roller is rapidly rotated by the apron itself the said roller at each revolution drives or presses the apron up against the plates 21, forcing the fibers of the wool (or other material) carried by the apron through the narrow slot between the edges of the plates, so that it may be seized by the teeth on a card-clothed roller or drum 24 and drawn through said slot. The teeth on the apron and those on the drum 24, pulling in opposite directions, serve to comb and straighten out the fiber delivered to the said drum, and as the foreign substances—burs, &c.—entangled in the wool cannot pass through the slot between the plates the wool is freed therefrom. These foreign substances, thus set comparatively free, are easily shaken from the apron by a beating-roller 25, situated below the roller 15. The fiber, if any, still adhering to the apron after it passes the drum 24 and beating-roller 25 will be carried on around and again submitted to the action of said drum. The drum 24 delivers the fiber to the teeth on the main drum Y of the carding-machine. In Fig. 3 only a part of the drum Y is shown covered with clothing, but it will, of course, be fully clothed in the usual way.

The drum 24 will be by preference mounted as follows: A shoe 26 is secured to the upper bracket of the support 2 by the same bolts which secure the bars 20 thereto, and in this shoe is formed a guideway 26^a, in which is mounted a block 27, furnishing a bearing for one journal of the drum 24, said block being adjusted in its guideway by means of a screw 28, collared in a flange or lip on the said guideway. Both ends of the drum 24 will be mounted in the manner above described, and the axis

of said drum will be on the same level with the axis of the eccentric roller 15.

Above the roller 15 is mounted a beating-comb 29, adapted to act on the face of the apron, as indicated in Fig. 1. This comb has rotative bearings at its ends in slotted sliding arms 30, mounted to slide in guideways in blocks 31, mounted also in guideways in the bracket 11. Thus the comb 29 may be adjusted in two directions on the bracket 11, but the raising and lowering of this bracket does not affect the relative position of the comb to the apron 5. Screws 32 serve to secure the block 31 in the bracket 11, and a screw 33 serves to clamp the arm 30 to the block 31.

We have not shown the apron 5 in Figs. 2 and 3, as it would obscure the construction without adding to the clearness of the illustration. The drum 14 and comb 29 are also omitted from Fig. 2.

The shoes 26 are designed to tie together the two plates 20 at their respective ends after they have been properly adjusted.

Having thus described our invention, we claim—

1. As an apparatus for separating foreign substances from fiber, as wool, the combination with two thin plates set edge to edge with a narrow slit between them, a carrier which carries a thin layer of the fiber past said slit at one side of the plates, a revolving drum or roller with teeth situated opposite to the carrier and its teeth working close to said slit, and means for pushing the moving carrier in an intermittent manner up to the slit, substantially as set forth.

2. As an apparatus for separating foreign substances from fiber, as wool, the combination with two thin plates placed edge to edge with a narrow slit between them, an apron adapted to carry a thin layer of the fiber to the said slit, means for vibrating the apron at the point where it passes the slit and driving it up thereto, and a rotating roller, having teeth, situated at said slit and on the side opposite to the apron, said roller being adapted to seize the fiber projected through the slit and draw it wholly through, substantially as set forth.

3. In an apparatus for the separation of foreign substances from fibrous material, as wool, the combination of an endless, traveling apron provided with teeth, a rotating drum or roller furnished with teeth, said roller being situated with its periphery in near proximity to the outer surface of said apron, a rapidly-rotating eccentric roller situated behind the traveling apron and opposite to said toothed roller or drum, and adapted to drive or force the apron, intermittently, toward the drum, and two thin plates placed edge to edge and interposed between said drum and apron, a narrow slit being formed between the adjacent edges of the plates to permit of the passage of the fiber but not the foreign substances.

4. In an apparatus for the separation of for-

eign substances from textile fiber, the combination with an endless, traveling apron clothed with teeth and adapted to carry a thin layer of the fiber, a rotating roller or drum clothed with teeth and situated with its periphery in proximity to the outer surface of the moving apron, an eccentrically-mounted, rapidly-rotating roller situated behind and in contact with the apron at a point opposite to the toothed drum, a thin partition situated between the apron and said toothed drum and provided with a narrow slit parallel with

the drum-axis, and a beater adapted to shake the foreign substances from the apron after they are freed.

In witness whereof we have hereunto signed our names in the presence of two subscribing witnesses.

15

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Witnesses:

EUGENE JOSEPH,
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