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2,022,113

SLIVER CONVEYING APPARATUS

Filed Oct. 3, 1931

2 Sheets-Sheet 1

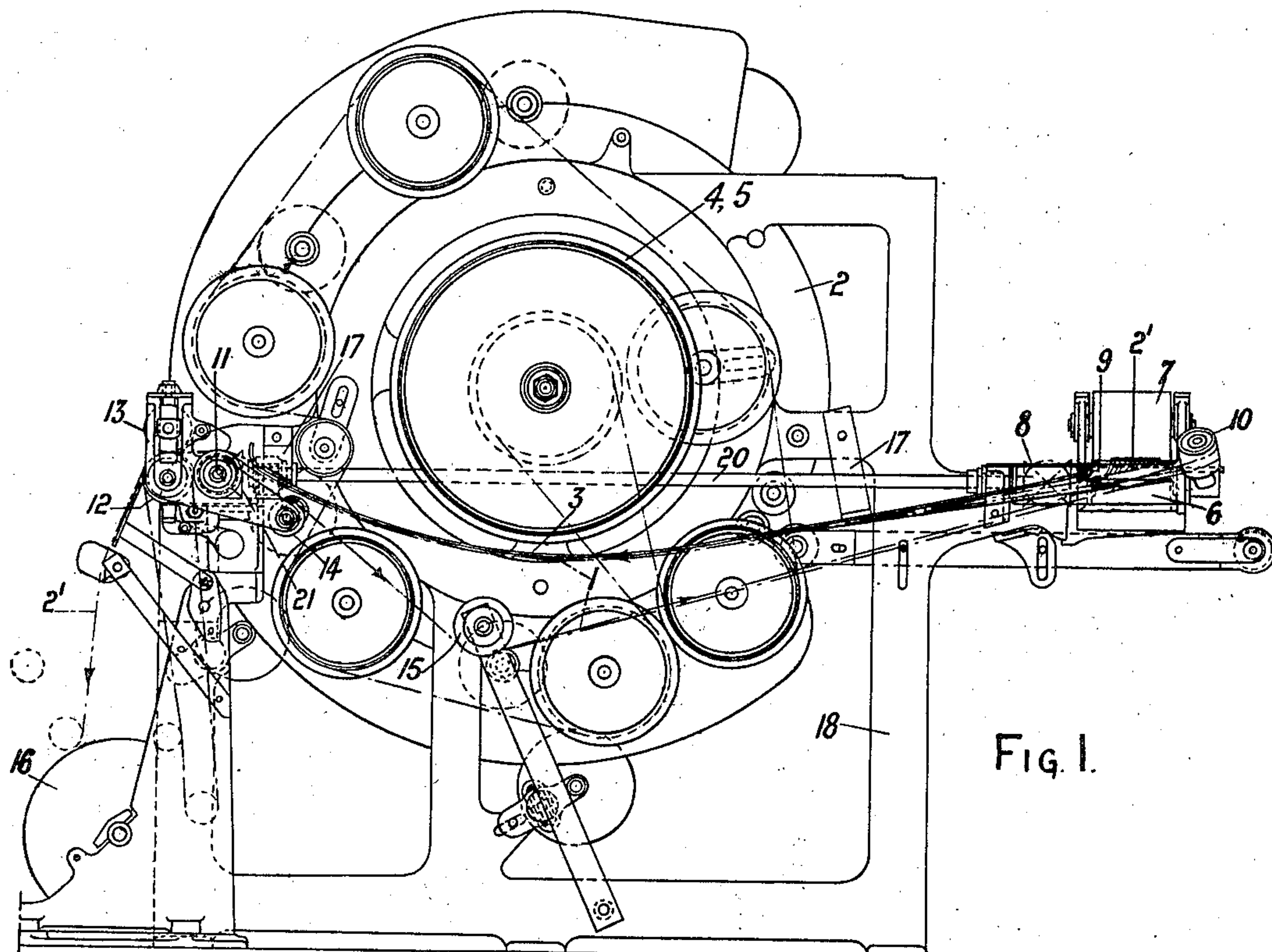


FIG. 1.

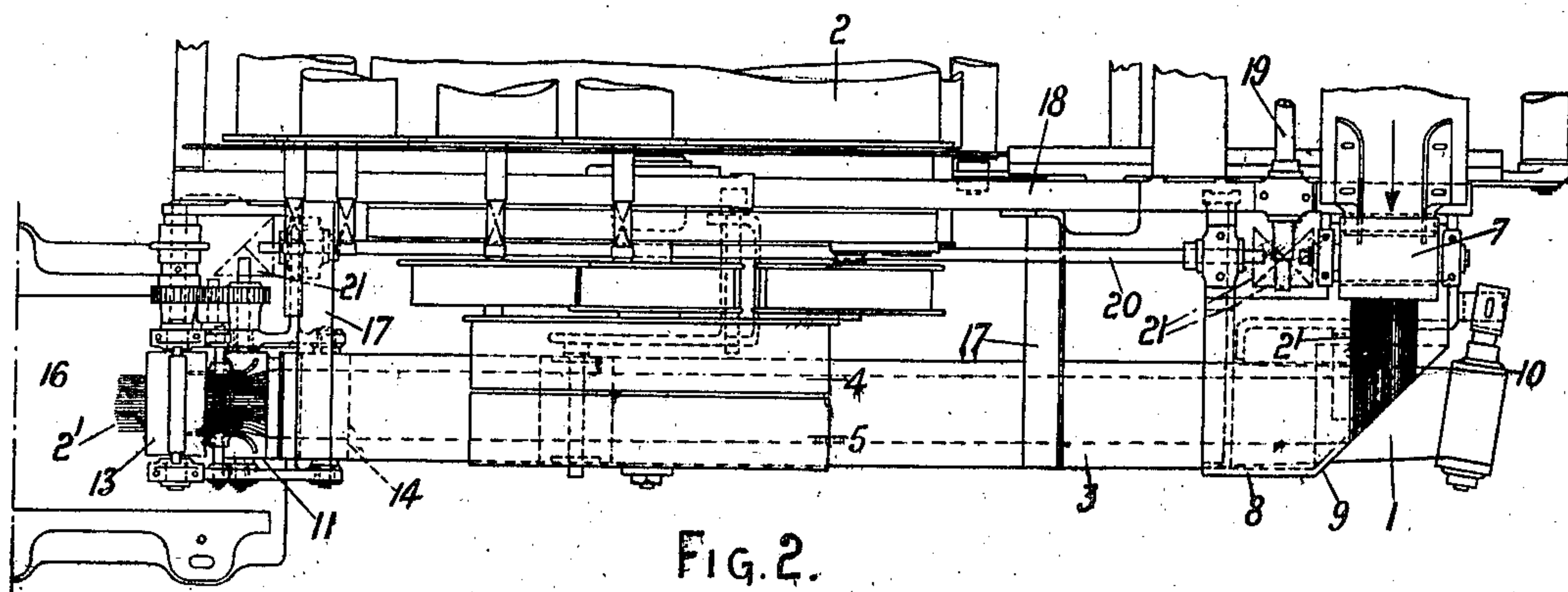


FIG. 2.

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2 Sheets-Sheet 2

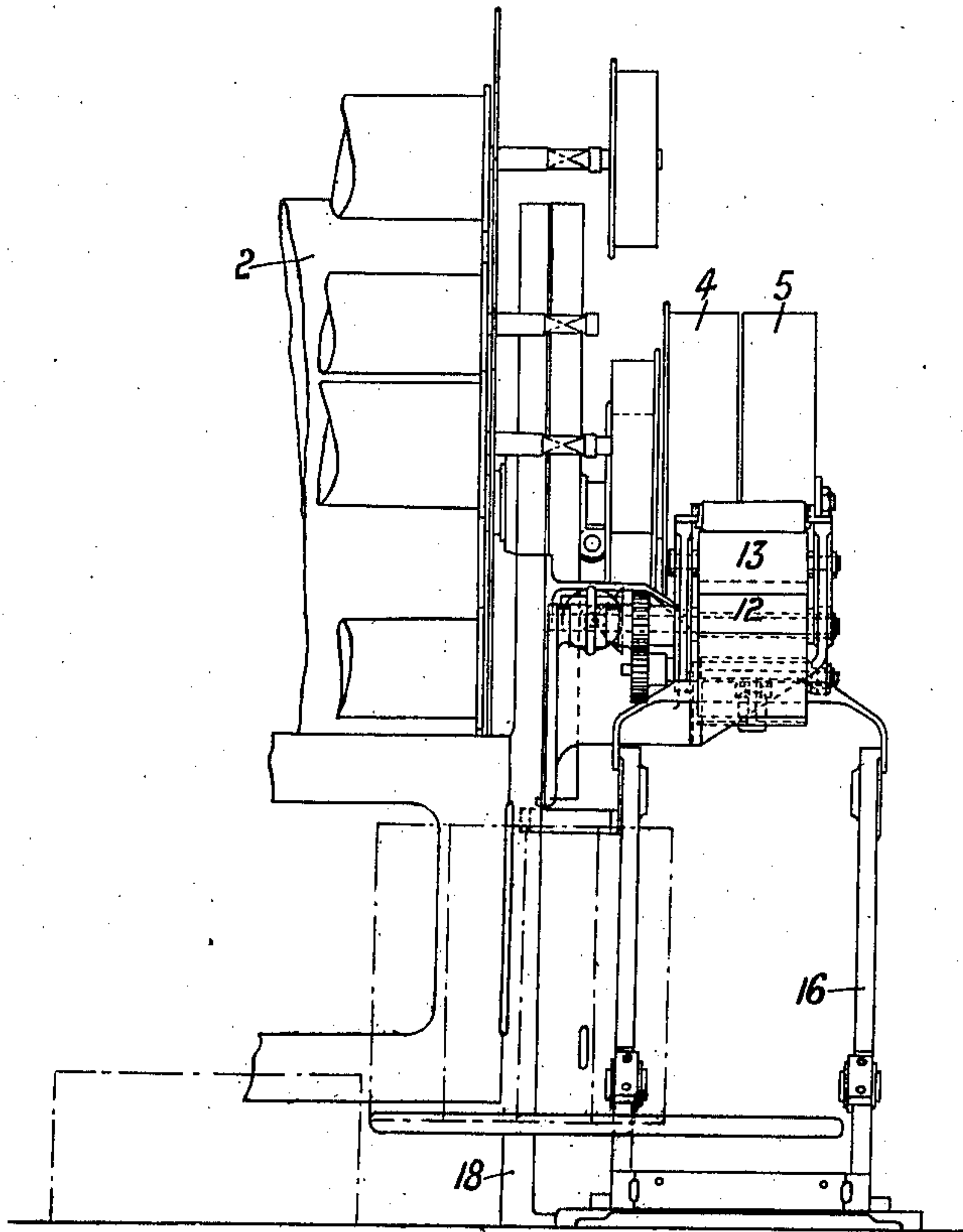


FIG. 3.

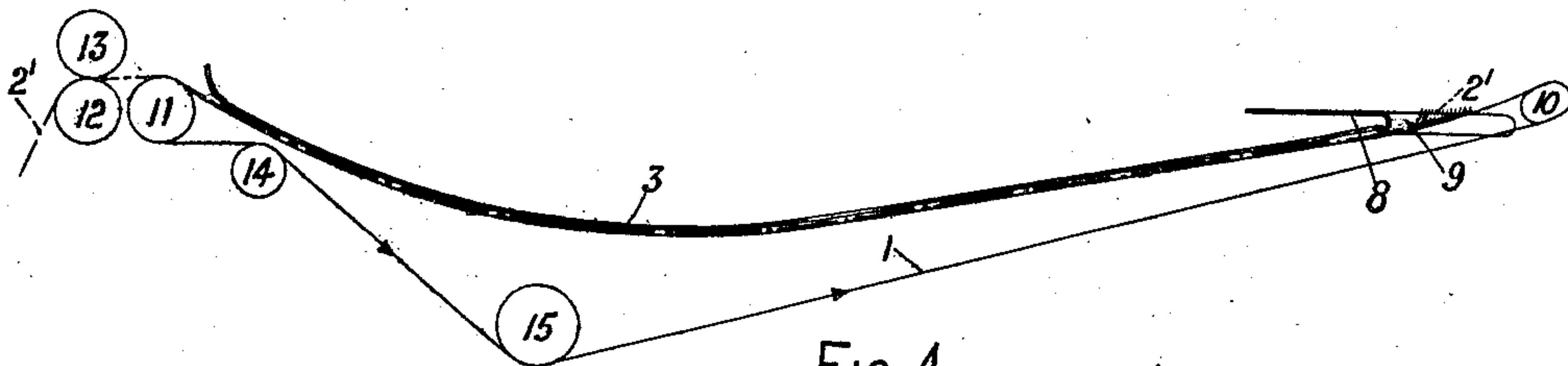


FIG. 4.

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# UNITED STATES PATENT OFFICE

2,022,113

## SLIVER CONVEYING APPARATUS

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Application October 3, 1931, Serial No. 566,762  
In Great Britain October 4, 1930

5 Claims. (Cl. 19—157)

This invention relates to an improved apparatus for conveying sliver from one point to another point of a textile machine, under or over obstructions, such as the driving pulleys of a carding engine for example.

Conveying apparatus according to the invention includes an endless circulating conveyor band of flexible material, for example of cotton flexibly woven, and a stationary guide plate joining the two stations between which the sliver is to be conveyed, said plate being positioned and shaped to avoid obstructions and curved convexly towards the band, the upper flight of the endless band bearing closely on the smooth under face of the plate and adapting itself to the curvature of the plate, without the interposition of guide rollers or the like engaging said upper flight and liable to catch the fibres of the sliver travelling with said upper flight.

At present, in the operation of a full-circular finisher card for flax, hemp or jute in which the slivers are normally fed in at the same side as that at which the finished sliver issues, i. e., at the rear, the finished sliver is usually collected in cans at the issue point, and these cans must be trailed to the front between adjoining cards, a distance of several yards, and removed to the drawing frames.

The apparatus of the invention serves to convey the sliver to the front mechanically, thereby saving this can-trailing labour.

In a practical embodiment of the invention as adapted to a full-circular finisher card, the endless band extends from sliver deflecting means located at the point of delivery of the finished sliver from the card delivery rollers to a point at the front of the card clear of obstructions. The upper flight of the band is caused to bear against the polished under side of the guide plate, being trained over guide and tension pulleys including at least one weighted tensioning pulley acting on the lower flight. The band is preferably driven by the pulley located at the delivery station, that is at the return bend at the front of the card.

Sliver introduced between the upper flight of the band and the plate is entrained by frictional contact with the band which carries it along the polished under surface of the plate to the point of delivery where it passes into cans, roll-forming devices or other apparatus.

The invention is to be distinguished from prior arrangements for conveying sliver from the rear to the front of a machine on top of a polished plate or tray in which the tension of the sliver

itself is the conveying force acting on the sliver, being liable to occasion breakage.

In the accompanying drawings Figs. 1 and 3 are elevations at right angles to one another and Fig. 2 a fragmentary plan view of a full-circular finisher card equipped with sliver conveying apparatus constructed in accordance with the invention. Fig. 4 is a diagrammatic view drawn to a larger scale illustrative of the conveyor band and the stationary plate.

The sliver conveying apparatus shown comprises a circulating conveyor band 1 extending from the rear to the front of the card indicated generally at 2, and a stationary metallic plate 3 curved convexly towards the band 1 under the fast and loose pulleys 4, 5. Finished sliver 2' from the card 2 is delivered by co-operating delivery rollers 6, 7 at the rear of the card to the band 1 over a plate 8 presenting an angled face 9 adapted to deflect the sliver delivered by the rollers 6, 7 into the line of travel of the band 1 which entrains the sliver between its upper flight and the under surface of the plate 3. The band 1 is trained over a universally adjustable guide roller 10 located at the rear of the card adjacent to the delivery rollers 6, 7, over a driving roller 11 at the front of the card, in front of which are delivery rollers 12, 13, over a guide roller 14, and under a weighted tensioning roller 15 acting on the lower flight of the band to apply a light tensioning effort.

The sliver 2' is delivered by the rollers 12, 13 to a sliver roll former 16 located in front of the card 2.

The plate 3, which is supported by brackets attached to the side frame 18 of the card, presents a polished under face.

19 denotes the card delivery roller driving shaft which is utilized also to drive the driving roller 11 and the final delivery rollers 12, 13 through the medium of a shaft 20 and bevel pinions 21.

The roller 10 is universally adjustable so that it may be suitably angled to bring the upper flight of the band 1 against the angled face 9 of the plate 8 which is also preferably universally adjustable for positioning the sliver on the band, it being found in practice that, in negotiating the face 9, heavy and light slivers adopt different positions on the band 1.

The apparatus is readily attachable to existing machinery, requiring only the provision of suitable bracketing designed substantially to suit the requirements of individual machines.



What we claim is:—

1. Sliver conveying apparatus comprising a circulating conveyor band and a stationary plate above the band joining stations between which the sliver is to be conveyed, said plate having a smooth under face and being positioned to avoid obstructions and curved convexly towards the band so that the upper flight of the band bears closely on the under face of the plate.
2. In a carding engine, in combination, delivery rollers for delivering the carded sliver, and endless travelling band extending from the rear to the front of the card, means for deflecting the sliver delivered by said rollers into the line of travel of said band, and a stationary plate immediately above the upper flight of said band, said plate having a smooth under surface and being curved convexly towards the band.
3. Sliver conveying apparatus as defined in claim 1 having a weighted roller which engages the lower flight of the band whereby the band is tensioned.
4. In a carding engine, in combination, delivery rollers for delivering the carded sliver, a univer-

sally adjustable roller guide located adjacent to the point of delivery of the sliver, an endless travelling band extending from said universally adjustable roller to the front of the card, means for deflecting the sliver delivered by said delivery rollers into the line of travel of said band, and a stationary plate immediately above the upper flight of said band, said plate having a smooth under surface and being curved convexly towards the band.

5. In a carding engine, in combination, delivery rollers for delivering the carded sliver, an endless travelling band extending from the rear to the front of the card, a pulley at the front of the card for driving said band, means for deflecting the sliver delivered by said rollers into the line of travel of said band, and a stationary plate immediately above the upper flight of said band, said plate having a smooth under surface and being curved convexly towards the band.

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