

No. 659,569.

Patented Oct. 9, 1900.

T. A. BOYD.

MACHINERY FOR TWISTING YARNS OR THREADS.

(Application filed June 7, 1899.)

(No Model.)

FIG. 1.

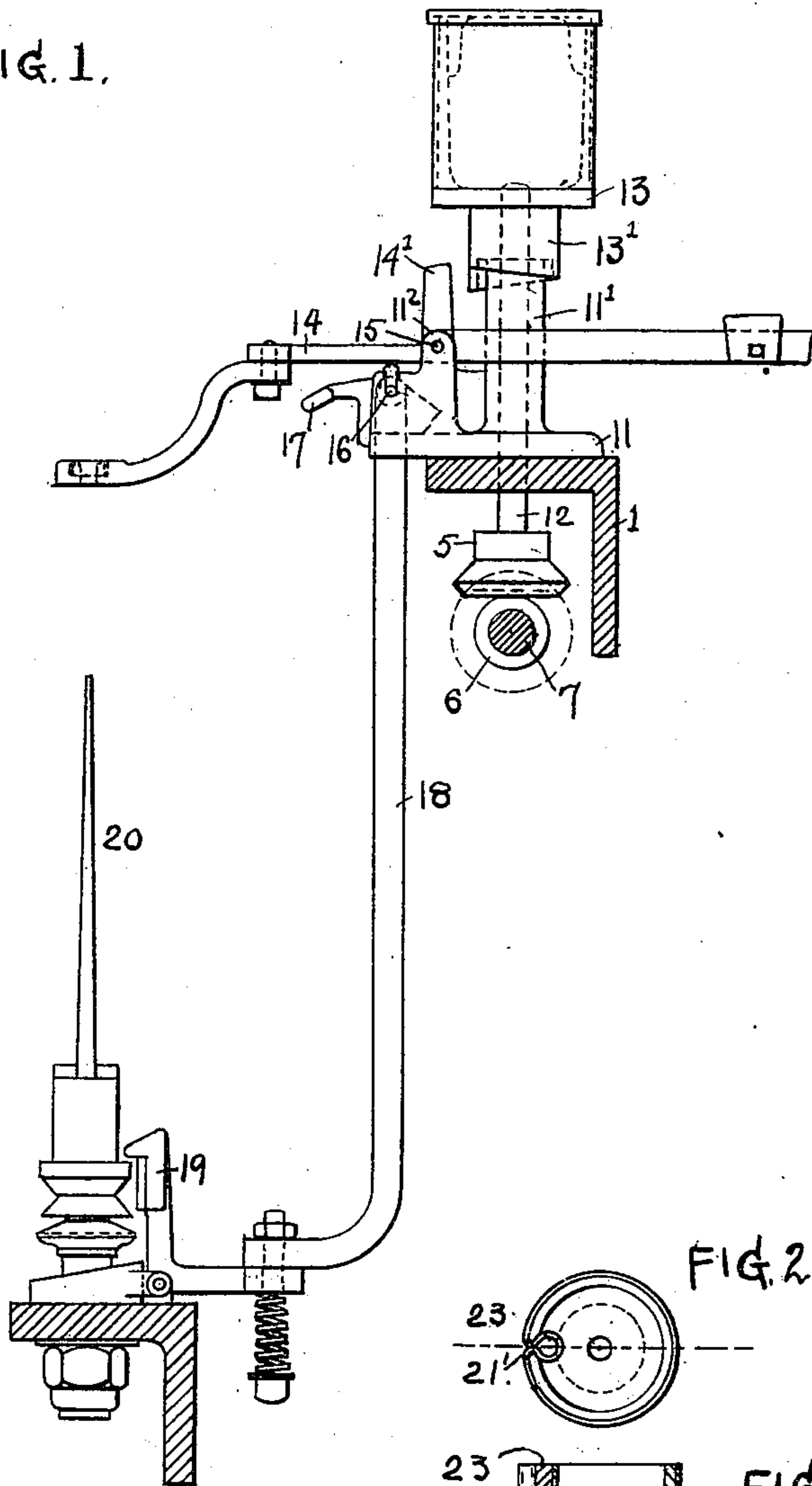


FIG. 2.

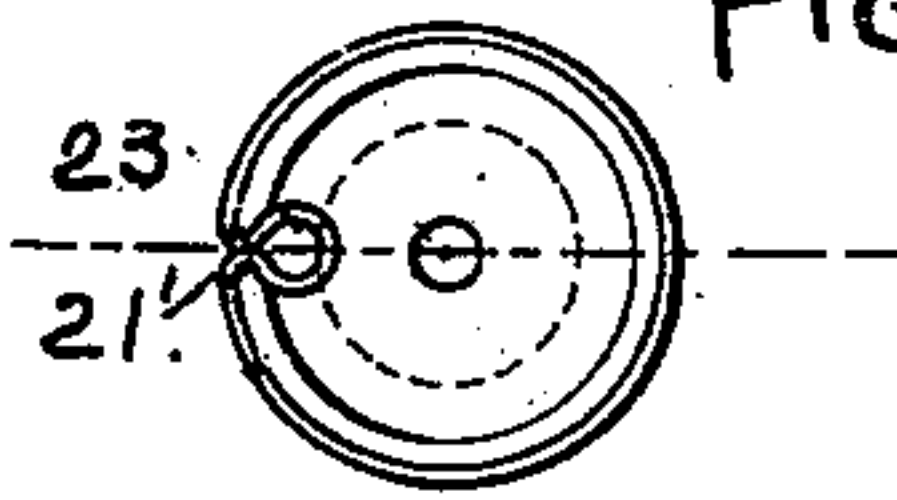
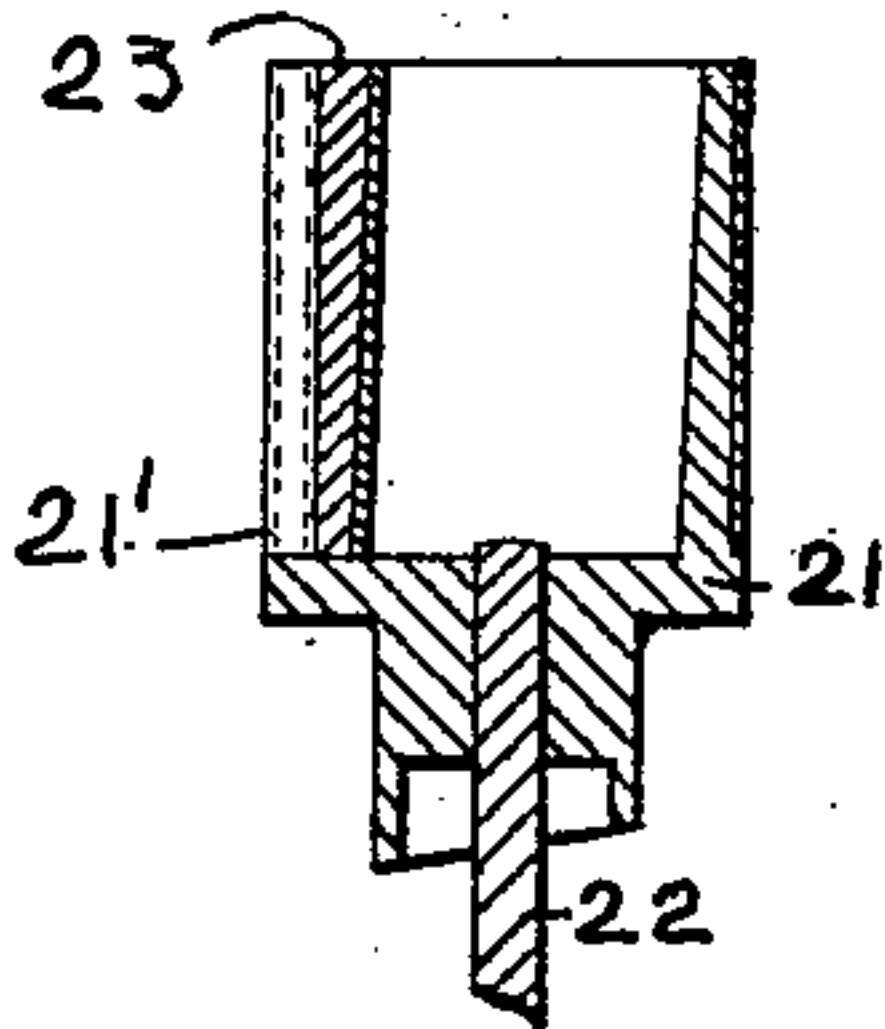


FIG. 3



WITNESSES:

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INVENTOR

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BY

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# UNITED STATES PATENT OFFICE.

THOMAS A. BOYD, OF GLASGOW, SCOTLAND.

## MACHINERY FOR TWISTING YARNS OR THREADS.

SPECIFICATION forming part of Letters Patent No. 659,569, dated October 9, 1900.

Application filed June 7, 1899. Serial No. 719,675. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS ALEXANDER BOYD, a subject of the Queen of Great Britain and Ireland, and a resident of Glasgow, in the county of Lanark, Scotland, have invented Improvements in Machinery for Twisting Yarns or Threads, of which the following is a specification.

My invention consists, chiefly, in improved means of stopping and starting upright delivery-rollers in twisting-frames, in combination with or apart from mechanism for stopping and starting spindles; also, in the means of covering upright delivery-rollers.

In the accompanying drawings, Figure 1 is a vertical sectional view of a part of a twisting-machine embodying my invention. Fig. 2 is a plan view of the upright feed-roller, and Fig. 3 is a sectional view of the same.

My invention is especially applicable to twist-ers for two-ply yarns. I shall describe a construction of my invention for stopping the delivery-rollers which may be used alone or in combination with mechanism for stopping the spindle after the feed-roller is stopped and of starting the feed-roller and spindle simultaneously when twisting is to proceed.

In carrying out the same I employ a bracket 11, fixed to the top framing-rail 1, and on the bracket a pillar 11', which carries a vertical spindle 12. On the top end of the spindle is an upright leather-covered feed-roller 13 and at the lower end within the top rail a bevel-pinion 5. Within the rail is carried a horizontal shaft 7, upon which are bevel-gears to drive those on the upright spindles. Around the lower end of the upright roller is a cam-shaped part 13'. The pillar-bracket 11 on the top rail 1 has two lugs 11<sup>2</sup>, which carry next to the pillar a balance-lever 14. This balance-lever 14 has an upwardly-projecting part 14', which stands in front of the upright roller 15 and clear of it when the front end of the balance-lever is kept down by the thread; but on the thread failing and the front end of the balance-lever rising the upwardly-projecting part 14' falls into the path of the cam 13' at the lower end of the upright roller 13, whereupon the roller 13 by its own revolution and the action of the cam lifts itself out of gear with the driving-bevel 6 on the longitudinal

shaft 7, and thus the delivery of the yarn is stopped. In front of and below the cross-wire 15, which carries the balance-lever 14, is another cross-wire 16, carrying a tumbler-lever 17 and the upper end of an upright rod 18, with a spindle-brake 19 at its lower end, as shown and described with reference to Fig. 3 in the specification of patent applied for by me January 13, 1899, Serial No. 702,067. When the upright roller 13 has stopped, the worker by the tumbler-lever 17 brakes the spindle 20. When twisting is ready to proceed, the worker depresses the balance-lever 14, which knocks down the tumbler-lever 17 at the same time to the position shown in Fig. 1, thus starting the upright feed-roller 13 and the spindle 20 simultaneously. The upright roller may be driven by bevels or otherwise.

The construction of upright feed-rollers is shown in Figs. 2 and 3. I employ a cup-shaped metal roller-casting 21, solid at its lower end and open at its upper end and slightly tapered inside. The roller may either be fixed onto its upright spindle 22 or removable. The covering of the roller may be of leather or other frictional material. I form a longitudinal slit 21' in the periphery of the roller, and I carry the covering through this slit and fix it inside of the roller. The covering may be a strip or an endless band. The fixing may be accomplished in various ways. I prefer to employ a band cemented at the ends and forming an endless band. I place this band around the roller and carry it in doubled or loop form through the slit 21', and I insert within the loop part a pin 23, tapered in the opposite direction to the taper of the inside of the top roller. This pin draws the covering tight around the roller and is easily removable for putting on new covering.

I claim as my invention—

1. In a twisting-frame, the combination of a spindle, a feed-roller, a balance-lever controlled by the twisted thread and means for automatically stopping the feed-roller by the balance-lever on the failure of the thread with mechanism by which the worker can thereafter brake and stop the spindle by hand and can start the feed-roller and spindle again simultaneously.

2. In a twisting-frame, the combination of



an upright feed-roller having a cam and means for rotating the roller, with a balance-lever controlled by the thread and having a part adapted to move into the path of the cam, to  
5 lift the roller and support it in its lifted position, whereby the roller may descend to working position again on the movement of the balance-lever, substantially as described.

3. In a twisting-frame, a feed-roller and  
10 driving means therefor, in combination with a balance-lever controlled by the thread to disengage said roller, and driving means, a spindle, an upright rod and a spindle-brake controlled by the rod and a tumbler-lever

adapted to be acted on by the balance-lever 15 or by hand to control the brake-rod.

4. A roller for a twisting-frame, said roller being hollow with a tapered inside and having a longitudinal slit in the periphery, with a tapered pin to secure the covering, substan- 20 tially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

T. A. BOYD.

Witnesses:

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JOHN W. MCCOTTY.