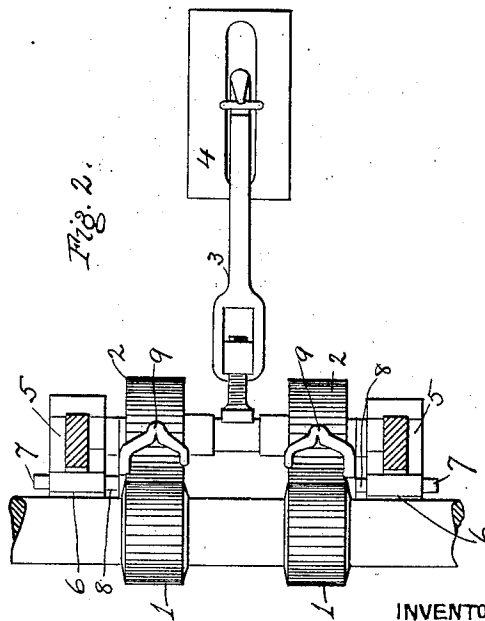
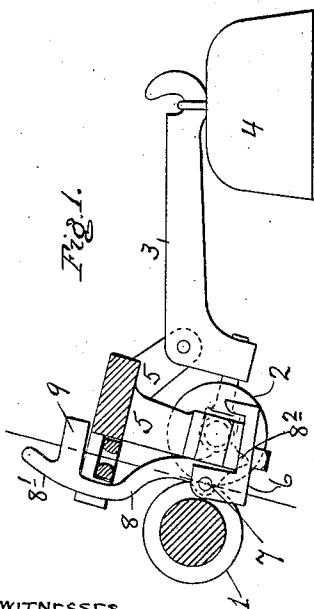
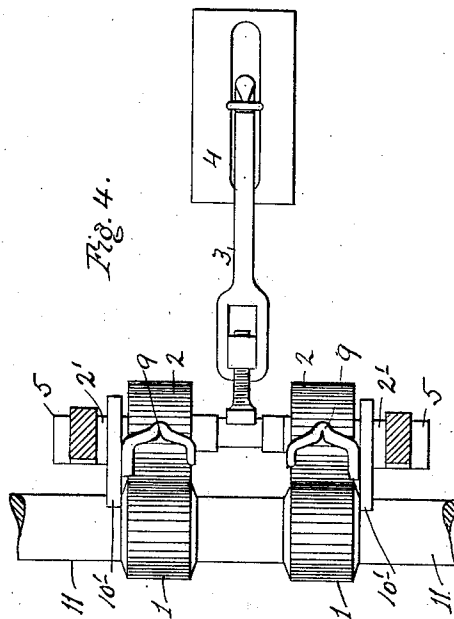
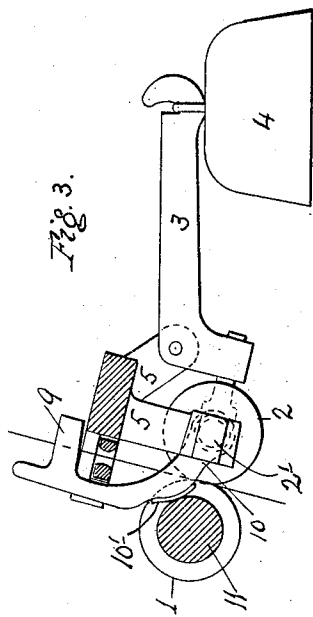


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 SPINNING AND TWISTING FRAME FOR FIBROUS MATERIALS.
 APPLICATION FILED APR. 14, 1909.

1,047,123.

Patented Dec. 10, 1912.

3 SHEETS—SHEET 1.



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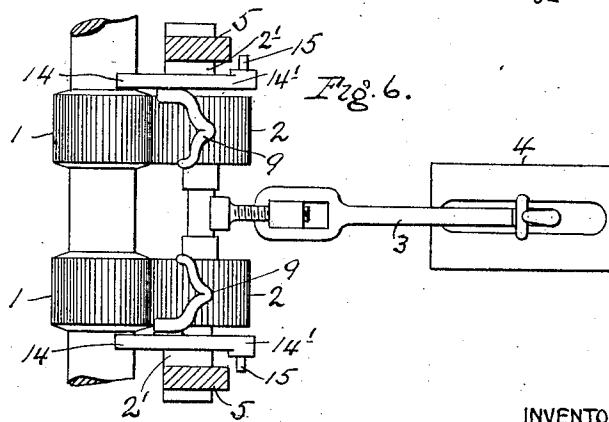
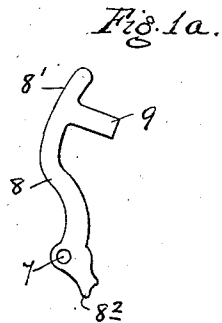
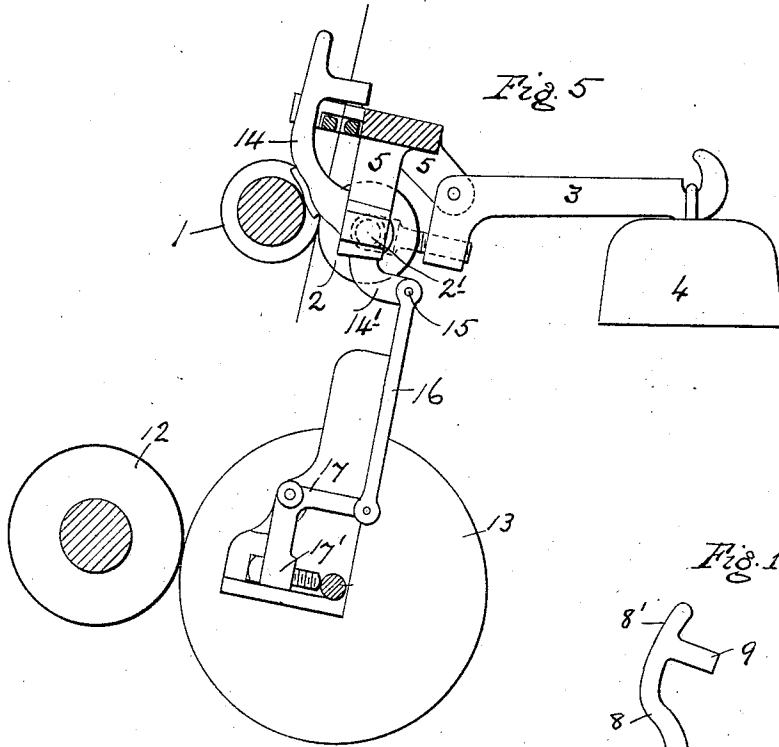
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3 SHEETS—SHEET 2.



WITNESSES

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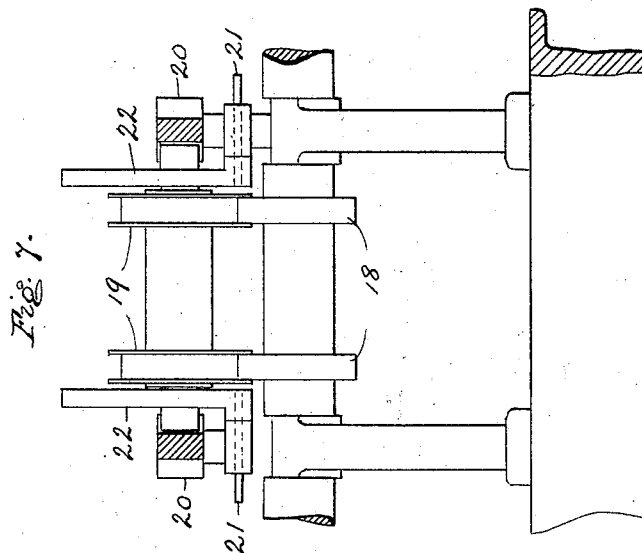
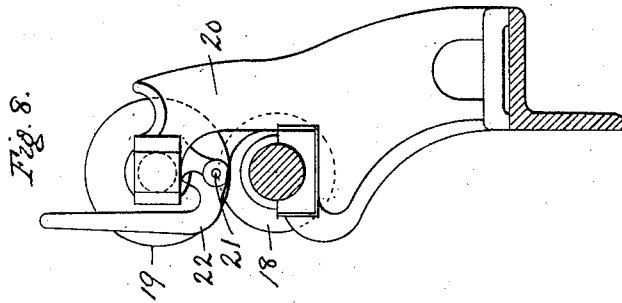
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

THOMAS A. BOYD, OF GLASGOW, SCOTLAND.

SPINNING AND TWISTING FRAME FOR FIBROUS MATERIALS.

1,047,123.

Specification of Letters Patent.

Patented Dec. 10, 1912.

Application filed April 14, 1909. Serial No. 489,920.

To all whom it may concern:

Be it known that I, THOMAS ALEXANDER BOYD, a subject of the King of Great Britain and Ireland, and a resident of Glasgow, in the county of Lanark, Scotland, have invented certain new and useful Improvements in Spinning and Twisting Frames for Fibrous Materials, of which the following is a specification.

My improvements refer to spinning and twisting frames for jute, hemp, flax and other fibrous materials in which the pressing rollers for retaining, drawing or delivering the fiber or yarn are made each to supply two spinning or twisting spindles.

The said improvements consist in the provision of mechanism to open the one end of the said pressing rollers for the purpose of causing the delivery of the fiber or yarn at that end of the said roller to cease while the fiber or yarn at the other end of the roller continues to be delivered and spun or twisted.

The improvements also include various descriptions of mechanism for the purpose described.

The object of my improvements is to facilitate the working of spinning and twisting machines of the kind described and to prevent waste of material. In spinning frames both the retaining and the drawing roller may be opened as above described either separately or in concert. In twisting frames there is only a delivery roller and it would be opened at either end as required.

In the accompanying drawings Figure 1 is a vertical section, and Fig. 2 is a plan of a retaining roller, a pressing retaining roller, pressing lever and weight and also a pair of cam levers to open one or other end of the pressing roller and so cause it to release the fiber at the end opened. Fig. 1^a is a detached side view of the cam lever; Figs. 3 and 4 are similar views of a modified construction for opening the retaining pressing roller; Figs. 5 and 6 show a construction similar to that of Figs. 3 and 4, but combined with means to open the wooden pressing drawing roller in concert with the retaining drawing roller; Figs. 7 and 8 show a top pressing roller and a delivery roller of a twisting frame and also a pair of levers to open the former.

In carrying out my invention in the construction shown in Figs. 1 and 2, adapted to open and close the pressing roller of an ordinary jute spinning frame at either of its

ends, I employ a retaining roller 1, a pressing retaining roller 2, a pressing lever 3, and its weight 4, and also a stay bar 5, which supports the pressing retaining roller 2. On the stay bar 5, between the adjacent pressing retaining rollers 2, I fix a bracket 6, with a stud 7, placed between the retaining roller 1, and its pressing retaining roller 2 and parallel with both. On this stud 7, I place a cam lever 8, with a vertical handle 8¹, and a horizontal cam-shaped member 8², projecting toward and just clear of the end of the axle of the pressing retaining roller 2. This cam lever 8 is formed at its outer and horizontal end 8², so that when turned on its stud 7 it will force one end of pressing retaining roller 2 clear of the retaining roller 1 and thus relieve the fiber at that end, while the fiber at the other end continues to be delivered to its spinning spindle. When the worker with her hand grasps the cam lever 8 to open the pressing retaining roller 2 at one end, she at the same time holds the fiber by means of a V-shaped part 9 on the said lever, so that when the roller 2 is opened the further delivery of the fiber ceases. When she presses the cam lever 8 forward again at its upper end 8¹, the pressing retaining roller 2 gets into contact with the retaining roller 1 and the delivery of the fiber resumes.

The ordinary practice when the thread being spun fails is to remove the rove from the retaining and delivery rollers and to replace it again, thus occupying much time and causing waste.

In the construction shown in Figs. 3 and 4, for the same purpose as the foregoing, I employ an ordinary retaining roller 1, pressing retaining roller 2, stay bar 5, pressing lever 3, and weight 4. On the axle 2¹ of the pressing retaining roller 2, I hinge at each end a cam lever 10, projecting forward and over the top of the retaining roller 1. The under side 10¹ of each of these levers is shaped so that it can be forced down against the inner side of the retaining roller shaft 11, and thus it presses the end of the pressing retaining roller 2 open or out of contact with the retaining roller 1, thereby stopping the delivery of the fiber at that end.

In the modification, Figs. 5 and 6, in which by one movement the worker opens one end of a retaining roller and its drawing roller thus releasing the fiber at both ends, I employ a retaining roller 1, a press-

ing retaining roller 2, a pressing lever 3, and weight 4, and stay bar 5 for the said pressing retaining roller 2, also a drawing roller 12 and a wooden pressing roller 13, a pressing lever and weight and stay bar, all of ordinary make. On the axle 2¹ of the pressing retaining roller 2, I place a cam lever 14, the same as and acting in the same manner as the cam lever 10 in the foregoing second construction, with the difference that I form a horizontal limb 14¹ on the cam lever 14, projecting inward and at the inner end of the limb 14¹, I fix a stud 15, and a connecting rod 16, which passes downward and operates a bell crank lever 17. One limb of the bell crank lever 17¹ acts on the end of the axle of the wooden drawing roller 13, opening it at one end simultaneously with its retaining roller 2.

In a fourth construction, Figs. 7 and 8 of my invention, as applied to a twisting frame, I employ an ordinary delivery roller 18, a top roller 19, and a top roller stand 20. On the top roller stand 20 I fix at each end a stud 21 and on each stud a cam crank lever 22, formed so that the worker by turning the said cam lever 22 raises and opens one end of the pressing roller 19, and thus causes the yarn passing through that end of it to cease delivery.

I claim as my invention—

1. In spinning and twisting machines, coacting retaining and pressing rollers adapted to serve two spindles, a pressing device common to said pressing rollers and means acting upon the axis of the pressing rollers for moving either pressing roller out of operative relation to its coacting retaining roller without interrupting the operative relation of the other pressing roller and its coacting retaining roller.

2. In spinning and twisting machines, a pair of retaining rollers and a pair of co-operating pressing rollers, a pressing weight common to both of the latter, in combination with manually controlled lever means acting upon the axis of the pressing rollers to move either pressing roller out of operative relation to its coacting retaining roller without interrupting the operative relation of the other pressing roller and its coacting retaining roller.

3. In spinning and twisting machines a pair of retaining rollers and a pair of co-operating pressing rollers, in combination with independent manually operated levers, one for each pressing roller and acting upon the axis of the pressing rollers whereby either pressing roller may be moved out of operative relation to its coöperating retaining roller without interrupting the operative relation of the other pressing roller and its coacting retaining roller.

4. In spinning and twisting machines, a pair of retaining rollers, a pair of coöperating pressing rollers, and a common displaceable axis for the latter, in combination with a pair of independent levers arranged to bear upon said axis one at each end thereof, whereby said axis may be displaced to separate said pressing and retaining rollers at either end or at both ends simultaneously.

5. In spinning and twisting machines, a pair of retaining rollers, a pair of coöperating pressing rollers, and a common displaceable axis for the latter, in combination with a presser element interposed between and common to said pressing rollers and a pair of independent levers arranged to bear upon said axis one at each end thereof, whereby said axis may be displaced to separate said pressing and retaining rollers at either end or at both ends simultaneously.

6. In spinning and twisting machines, a pair of retaining rollers, a pair of coöperating pressing rollers, and a common displaceable axis for the latter, in combination with a pair of independent levers arranged to bear upon said axis one at each end thereof, whereby said axis may be displaced to separate said pressing and retaining rollers at either end or at both ends simultaneously, together with means carried by said levers for holding the thread in the open position of the pressing roller.

7. In spinning and twisting machines, a pair of retaining rollers, a pair of coöperating pressing rollers, a shaft common to the latter and slide bearings for the opposite ends of said shaft, a presser element engaging said shaft at a point between said bearings, in combination with independent levers at the opposite ends of said shaft for displacing the latter at either end or at both ends simultaneously.

8. In spinning and twisting machines, a pair of retaining rollers, a pair of coöperating pressing rollers, a shaft common to the latter and slide bearings for the opposite ends of said shaft, a presser element engaging said shaft at a point between said bearings, in combination with independent levers at the opposite ends of said shaft for displacing the latter at either end or at both ends simultaneously, together with means carried by said levers for holding the thread in the open position of the rollers.

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

THOMAS A. BOYD.

Witnesses:

WALTER ARBE,
HUBERT HOWSON.