

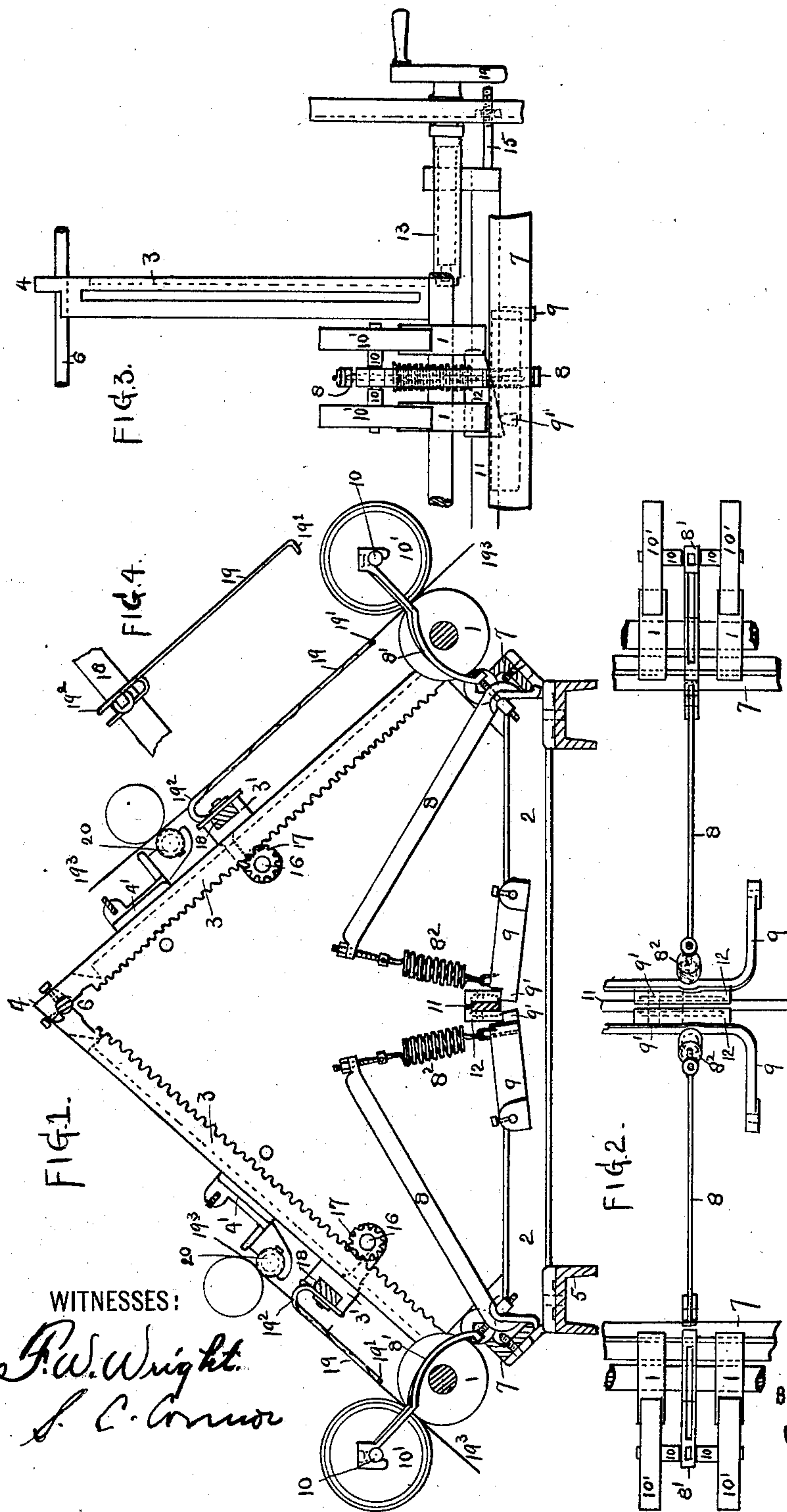
No. 680,017.

Patented Aug. 6, 1901.

T. A. BOYD.
ROVING, SPINNING, OR ANALOGOUS MACHINE.

(Application filed Nov. 30, 1900.)

(No Model.)



WITNESSES:

P. W. Wright
S. C. Connor

INVENTOR

T. A. BOYD

BY *Horvath and Horvath*
HIS ATTORNEYS.

UNITED STATES PATENT OFFICE.

THOMAS A. BOYD, OF GLASGOW, SCOTLAND.

ROVING, SPINNING, OR ANALOGOUS MACHINE.

SPECIFICATION forming part of Letters Patent No. 680,017, dated August 6, 1901.

Application filed November 30, 1900. Serial No. 38,215. (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, Scotland, have invented Improvements in Roving, Spinning, or Analogous Machines, of which the following is a specification.

My invention relates to improved means of supporting the draft-rollers and of regulating the pressure on the front draft-rollers in roving, spinning, and analogous machinery.

In the accompanying drawings, Figure 1 shows end view, and Fig. 2 plan, of draft arrangement and means of pressing the front draft-rollers. Fig. 3 shows front view of same; Fig. 4, plan view of wire rove-carrier.

On spinning-frames for certain kinds of work it is necessary to vary the amount of pressure put upon the front feed-rollers to suit the particular fibers of yarns which may be spun. At present the adjustment of the various feed-rollers on a spinning-frame is made upon pairs of rollers, and consequently different pairs are liable to vary in their adjustment. With the view of securing greater regularity in this adjustment I regulate the pressure throughout the whole frame or throughout considerable sections of it at one time, and, further, I relieve the rollers of their pressure or most of it when I stop the frame, so as to prevent damage to the yarn being spun and to the rollers themselves. My invention also includes improvements in the construction of the details for supporting and pressing feed-rollers such as are referred to. At present the feed-rollers are carried in many cases on brackets resting in an inclined position on the top of the spinning-frame. The upper ends are bolted to a top central rail, and the lower and outer ends are bolted to longitudinal rails. From various causes the lower ends get loose and slide outward, thus altering the alinement of the feed-rollers.

In carrying out my invention in one arrangement I construct the supports for the feed-rollers 1 on the two sides of a frame by using a horizontal member 2 and two diagonal members 3 3, which together form a triangular bracket 4, the roller-bearings 4' being adjustably fixed on the two outer sides of the triangle. The framing of the spinning-

frame has two main rails 5 5, one at each side and running parallel with each other from end to end of the frame. On the tops of these rails I place at suitable intervals the triangular brackets 4 described, and upon these brackets the various lines of drawing or feed rollers are placed in bearings. Along the apex of the triangular brackets 4 I carry a bar 6, to which they are fixed. At the lower and outer ends of the triangular brackets 4, below and behind the under feed-rollers, I fix a rail 7 7 on each side of the frame and running the whole length of it. Upon these rails I fulcrum levers 8, which are connected by links 8', one to each roller-spindle 10, carrying a pair of upper feed-rollers 10'. These levers 8 project from the rails 7 7 on each both sides toward the center of the frame, and to the ends of those levers I apply a connection, with a bar passing from end to end of the frame. I prefer to place between each of the triangular brackets 4, below the pressure-lever 8 on both sides of the frame, swing-levers 9, centered on studs parallel with the feed-rollers. I connect the pressure-levers 8 each by means of an adjustable spiral spring 8² to the swing-levers 9, each of which as a rule has four of those levers attached to it. From end to end of the framing I carry a horizontal bar 11, and on this bar I fix cams 12, with an inclined face looking downward. Each swing-lever 9 has a projection 9', passing to the under side of the cams. When the horizontal bar 11 is moved endwise in one direction, it depresses all the swing-levers 9 by means of the cams 12, and the swing-levers 9 draw the pressure-levers 8 downward, thereby pressing the top front feed-rollers 10' on the lower rollers 1, and when the horizontal bar 11 is moved in the opposite direction the levers 9 are allowed to rise and lessen the pressure. At the end of the spinning-frame I place a screw 13 and hand-wheel 14 to move the horizontal bar 11 endwise one way or the other. I place an adjustable stopper 15 to regulate the extent of the movement of the horizontal bar, and through it the pressure on the feed-rollers throughout the frame is regulated.

I place on the racks 3 of a spinning-frame brackets 3', having projections in which are

carried shafts 16, with pinions 17 gearing in the teeth of the rack 3. On the bracket 15 I mount a bar 18, passing from end to end of the frame. This bar has a traverse motion 5 applied to it, which gives it a short to-and-fro movement endwise. On the bar I fix a wire 19, placed at the level of the top of the front and back rollers and at or about right angles to them. The wire 19 behind 10 the front roller 1 has a short bend 19' at right angles. At its inner or back end 19² it is bent downward, so that it can be secured to the traversing bar 18 without the fixing-screw interfering with the upper part of the wire 15 19. The rove 19³ is delivered up by the back roller 20, then passed around the wire 19 spirally, and carried through between the front under roller 1 and its top roller 10'. It will thus be understood that the rove 19³ 20 is supported by the wire 19 as it passes from the back to the front roller. The absence of the intermediate rollers allows the back and front rollers to be brought much closer together for certain classes of work, while the 25 carrying of the rove on a wire 19 enables it to be supported much closer to the nip of the front roller 1 than if an intermediate roller or rollers were used. In this way very short fibers can be spun with larger top and under 30 rollers than otherwise could be used. Different lengths and diameters of wires can of course be used for different kinds of yarns. The bend 19' at the front end of the wire 19 prevents the coils of the rove 19³ from getting off the wire 19. The traverse given to 35 the bar 18, which carries the wires 19, prevents wearing of the draft-rollers.

Having now particularly ascertained and described my invention and in what manner

the same is to be performed, I declare that 40 what I claim is—

1. Roving, spinning and analogous machinery provided with means for regulating the pressure on the front feed-rollers throughout a section of or throughout the whole of 45 the frame for the purposes stated.

2. In roving, spinning and analogous machinery, the combination of a main frame, feed-rollers and means for applying pressure to the front feed-rollers, with supports for 50 the feed-rollers on both sides of the frame, said supports comprising a horizontal and two diagonal members forming a triangle so as to resist the pressure put upon the front feed-rollers, substantially as described. 55

3. In roving, spinning and analogous machinery, the combination of levers fulcrumed on the framing and extending toward the center of the frame with a bar extending from end to end of the frame which bar operates 60 the whole of the pressure-levers, substantially as and for the purposes described.

4. In roving, spinning and analogous machinery, the combination of a pair of feed-rollers, a link acting on one of the rollers and 65 a pressure-lever to which the link is connected, with a swing-lever having a spring connection with the pressure-lever and a horizontal bar provided with cams to act on the pressure-lever, substantially as described. 70

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

T. A. BOYD.

Witnesses:

THOMAS BLAIR,
CHARLES WILSON.