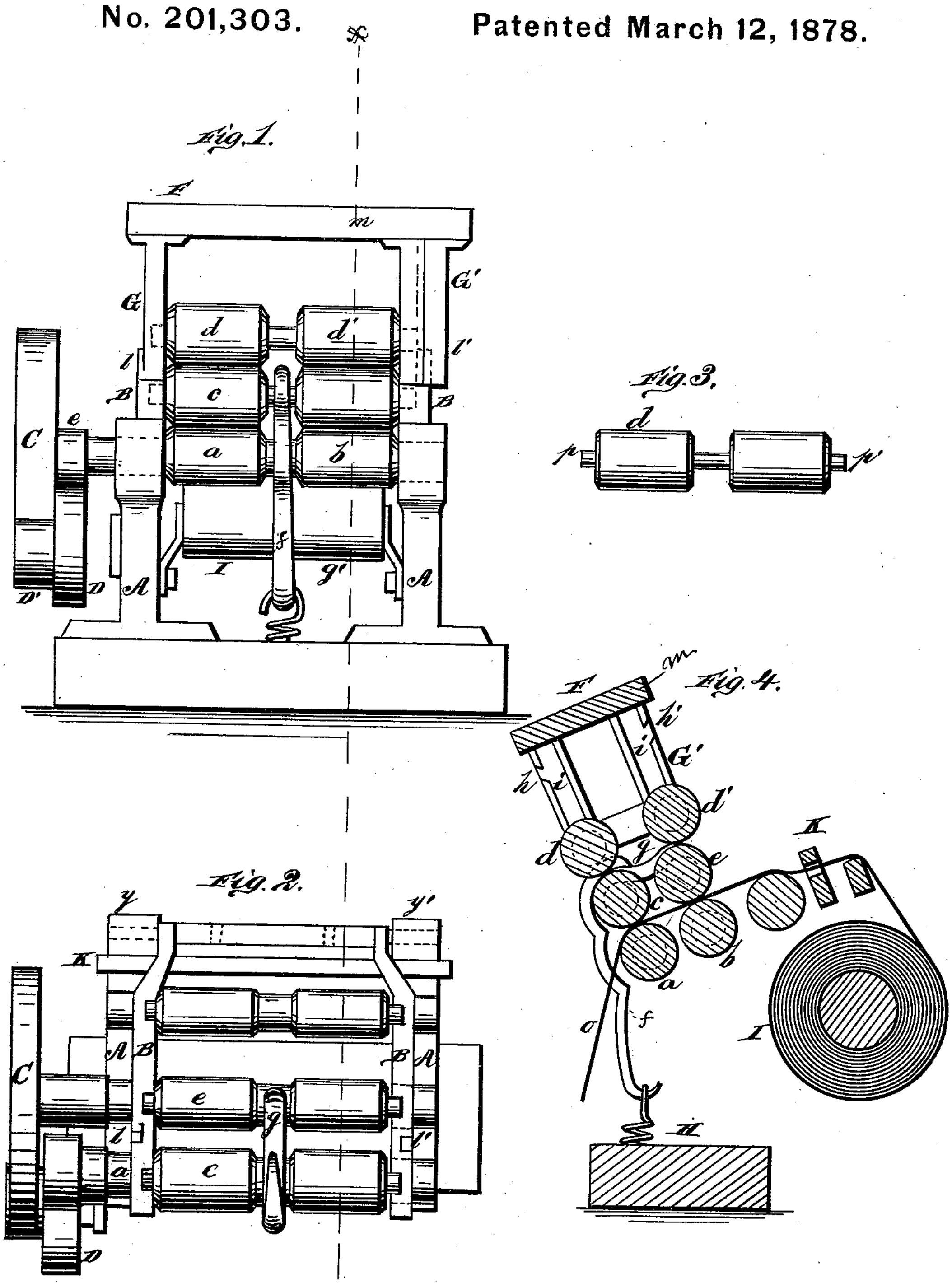
F. TWITCHELL & C. A. RICHARDSON.

Clearer-Roll Frame for Drawing and Spinning Machines.

No. 201,303. **Patented March 12, 1878.**



WITNESSES

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UNITED STATES PATENT OFFICE.

FRANKLIN TWITCHELL AND CHARLES A. RICHARDSON, OF NASHUA, N. H.

IMPROVEMENT IN CLEARER-ROLL FRAMES FOR DRAWING AND SPINNING MACHINES.

Specification forming part of Letters Patent No. **201,303**, dated March 12, 1878; application filed April 19, 1877.

To all whom it may concern:

Be it known that we, FRANKLIN TWITCHELL and CHAS. A. RICHARDSON, of Nashua, in the county of Hillsborough and State of New Hampshire, have invented a new and useful Improvement in Clearer-Roll Frames for Drawing and Spinning Machines, of which the following is a specification:

In the accompanying drawings, Figure 1 represents a front vertical view of the elongating and paying-out part of a common ring-spinning frame with our improvement attached. Fig. 2 represents a plan of the same with our improvement removed. Fig. 3 represents our scavenger-roll. Fig. 4 represents a section of Figs. 1 and 2 on line *x*; also an inside end view of the bracket G of our improved attachment.

Similar letters of reference indicate corresponding parts.

The object of our invention is to furnish a convenient device for licking up the bits of flying cotton in the manufacture of thread, so arranged as to be conveniently handled.

The invention consists, mainly, of a roller and a frame which retains the roller in its place, in connection with the ordinary frames used in the manufacture of thread or yarn in a cotton-manufactory, and may be used to great advantage on spinning-frames and stretcher-rolls on railway-heads and drawing-frames, in any place where it is desirable to gather up the stray bits of cotton.

Referring to the drawing, A represents the frame which supports the various mechanism. B B are parts of a frame which hinges to A at *y* and *y'*, and sustains and keeps in place the rollers C and *e*. This frame, with its supported rollers, may be raised from the rollers *a* and *b* at will. On this frame are two vertical projections, *l* and *l'*, on which the brackets of the frame F rest, and by which it is supported.

The rollers *a* and *b* are fluted and made of iron. *b* revolves with the gear C, and *a*, through the intermediate gear D and D', revolves with *e* much faster than *b*. Over those two fluted rollers *b* and *a* revolve the leather-covered rollers *c* and *e*. These rollers are impelled by friction from the rollers *b* and *a*, and are held closely in connection with them by the spring H through the parts *f* and *g*.

In Figs. 2 and 4, K is a guide-bar, with holes, through which the roving is guided to its right place between the rollers.

The roving is a thread of slightly-twisted cotton. It is held on the bobbin I, and after being drawn between the rollers *a b* and *c e*, as shown in Fig. 4, it is twisted into a perfectly-completed thread by what is called a "ring-twist."

So far we have described a common ring-spinning frame. We now proceed to describe our improved attachment.

Resting on and supported by the projections *l l'*, which extend from the frame B, is, as shown in Figs. 1 and 4, the frame F, which supports the scavenger-rollers *d* and *d'*. This frame F consists of the block *m*, to which are attached the brackets G and G'. These brackets are grooved on their inner sides through their whole length vertically, except at their lower end, where the groove is closed, so as to retain the roller when the frame F is lifted from its connection with B. At the top and on one side of the grooves, on one of the two brackets, are openings, by which the roller is removed from the frame.

These rollers *d* and *d'* are shown by Fig. 3, and are made of wood or iron, and are covered with woolen cloth, the better to lick up the waste cotton. They have bearings extending from their ends, which rest in the grooves *i* and *i'* of the brackets G G', and, for greater convenience, are cut away or nicked in the middle of the roller, dividing it into two parts. These rollers are held above the rollers *c* and *e* by the grooved brackets G G', and rest with all their weight upon them, being free to move vertically in the grooves *i* and *i'*. This freedom permits the rollers to bear with equal pressure on *c* and *e*, whether the rolls are bare or covered with a thick accumulation of waste.

Having described our invention, we now proceed to describe its operation. The end of the roving which is held on the bobbin I is passed through the two holes in the guide-bar

K, and between the fluted iron rolls *a* and *b* and the leather-covered rolls *c* and *e*, as shown in Fig. 4, the roving being stretched to much greater length by the greater speed of the roller *a* than *b*. After passing between rollers *a* and *c*, the roving is twisted by a device not shown in the drawings.

Now, having shown the working of the machine, it is obvious that if at any time it is found desirable to remove the scavenger-rollers, it can be most conveniently and expeditiously done by lifting the frame, with the rollers, from its supporting projections *l* and *l'*, and, when desired, can be quickly replaced.

What we claim, and desire to hold by Letters Patent, is—

The detachable single frame F, having the standards G G', grooved at *i*, closed at their bottoms, and provided with the openings *h h'*, in combination with the scavenger-rollers *d d'*, having journals *p p'*, working in the grooves *i* of the frame, and adapted to be applied to a ring-spinning frame, substantially as described, and for the purposes set forth.

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