

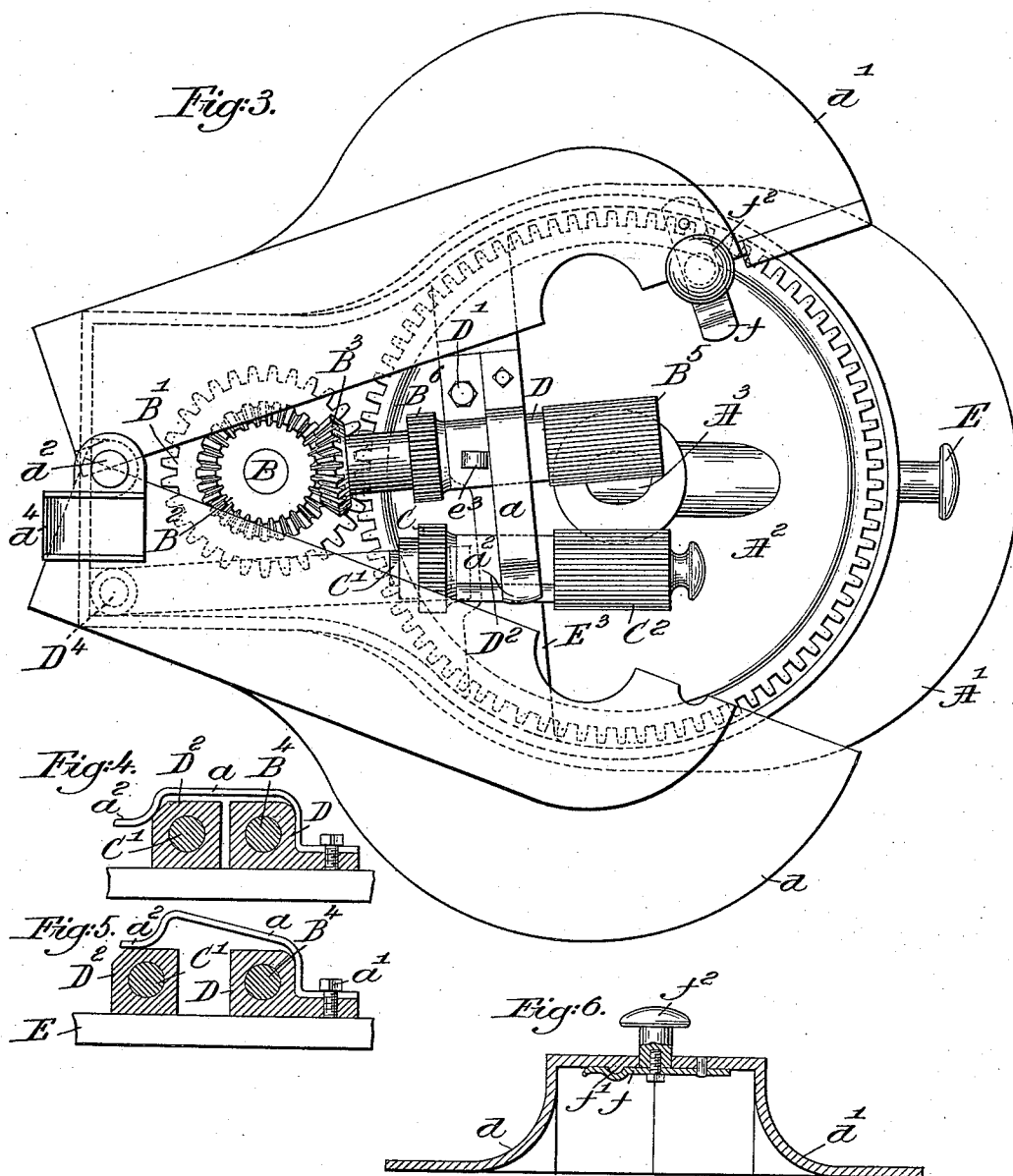
(No Model.)

2 Sheets—Sheet 2.

J. T. MEATS & J. S. EATON.
COILER.

No. 572,433.

Patented Dec. 1, 1896.



Witnesses.

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UNITED STATES PATENT OFFICE.

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ASSIGNORS TO THE MASON MACHINE WORKS, OF SAME PLACE.

COILER.

SPECIFICATION forming part of Letters Patent No. 572,433, dated December 1, 1896.

Application filed January 20, 1896. Serial No. 576,155. (No model.)

To all whom it may concern:

Be it known that we, JOHN T. MEATS and JOSEPH S. EATON, of Taunton, county of Bristol, and State of Massachusetts, have invented an Improvement in Coilers, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object to improve and simplify the construction of coilers used to coil textile material in cans.

In our invention we have mounted the feed-rollers of the coiler in a peculiar manner, whereby they may have ample lateral movement to prevent breakage in case the material which should pass between the rolls becomes wound thereon, a condition which is not infrequent. The roller, which yields to the accumulation of material on it, is so supported that when it once yields to increase of pressure the pressure thereafter during the separation of the rolls is kept substantially uniform, no matter what may be the distance of the movement of one roll from the other. We have constructed the cover and casing of the coiling mechanism so that it may be readily opened to gain free access to the coiling devices for inspection or oiling without necessity of breaking the sliver.

Particular features of our invention will be hereinafter more fully described, and pointed out in the claims at the end of this specification.

Figure 1 shows in top or plan view a sufficient portion of a coiler to enable our invention to be understood; Fig. 2, a view showing the cover and casing and some other usual parts in section; Fig. 3, a plan view with the cover separated to expose the rolls, the latter being separated and the trumpet omitted. Fig. 4 is a cross-section of the boxes in which the roller-shafts rotate, the boxes being in their closed positions; Fig. 5, a like view with the boxes separated as they will be when a roll has accumulated sliver upon it; and Fig. 6 is a section in the line *xx*, Fig. 1.

The pillar or column A (partially shown in Fig. 2) has a suitable foot to rest on the floor, and at its upper end it supports the bed-plate A', cut away centrally to receive the large

coiler-gear A², having an inclined passage A³ to receive the sliver and deliver it into the usual cans, (not shown,) which stand directly under the said gear. The pillar has a shaft B, driven by power in usual manner, the said shaft having near its upper end a gear B', which engages and rotates the coiling-gear A², and immediately above the gear B' the said shaft carries a bevel-gear B², which engages a bevel-gear B³, fast on and rotating the shaft B⁴ of the main cylinder-roll B⁵, said shaft also carrying a pinion B⁶, which engages the pinion C, fast on the shaft C', carrying the cylinder-roll C².

The main shaft B⁴ has its bearing in a box D, held in place by a suitable screw D'; but the shaft C' has its bearing in a box D², connected to or forming a part of an arm or radius-bar D³, pivoted at D⁴, so that said bearing can swing laterally when the material passing between the rolls becomes caught and coiled about one or both rolls, the bearing then sliding on the cross-pieces or track E², attached to the casing E', adapted to turn about a horizontal pivot E², held in the bed-plate. By thus removing the pivot D⁴ a considerable distance from the rolls any unusual lateral movement of the roll C² will throw it out of gear with the roll B⁵, as shown in Fig. 3, thereby instantly stopping further coiling or winding movement of the roll C². The bearing-box D² may, however, have this provision of bodily lateral movement by any suitable means other than the long radius-bar D³.

The casing has a projection E, which may be engaged by hand when it is desired to turn the casing up and uncover the gearing inside of it.

The movable bearing is acted upon by a friction device (shown as a spring *a*) held in place by a screw *a'*, so shaped as to overlap the bearing D² to hold the rolls B⁵ and C² together, to enable the said rolls to properly act on the sliver and feed the same into the guide A³.

In case the sliver becomes wound about one of the rolls it will continue to accumulate and the rolls must separate or the mechanism will break. The bearing D² may yield under these circumstances, and as it moves (see

Fig. 5) the friction device *a* continues by its end *a*² to act on the bearing and insures that the friction or resistance which the bearing has to overcome in order to move is uniform.

5 If a spiral compression-spring should be used, the pressure to overcome would be gradually increased.

By enabling the roller *C*² to yield laterally in a horizontal plane its range of motion is 10 greatly increased and there is no danger of its striking any other part, which would stop it or result in breakage.

Instead of the particular friction device shown we may use any other equivalent friction device acting on the bearing *D*² or its 15 carrying-arm.

The cover-plate is composed of two parts *d* *d'*, mounted on a pivot *d*², fixed by a screw *d*³ in a lug attached to the interior of the casing *E'*, and the part *d* has attached to it the 20 sliver-guide *d*⁴, which guides the sliver on its way into the trumpet *e*. The trumpet *e* is carried by an arm *e'*, pivoted at *e*² on an ear *e*³, herein shown (see Fig. 3) as erected on 25 the bearing *D*. By mounting the trumpet independently of the cover and dividing the cover the rolls *C*² and *B*⁵ and their driving-gear may be readily made accessible by only separating the cover, one part of the cover 30 having a suitable catch, as *f*, shown as a spring adapted to engage a lug *f'* on the other part, the spring having an attached button *f*², which may be depressed to disengage the spring from the lug.

35 In our invention by making the cover in two parts and mounting the same on a vertical pivot the cover may be readily swung apart horizontally and fully uncover the rolls and their driving mechanism, the sliver remaining in the guide and trumpet, and by 40 tipping the casing up about the pivot *E*² the coiler-gear may be reached and removed, if desired.

Having described our invention, what we 45 claim as new, and desire to secure by Letters Patent, is—

1. In a coiler, the combination with a main roll *B*⁵, its shaft, a bearing for the shaft, and means to rotate the shaft, of a second shaft 50 having a roll *C*², pinions on said shaft to cause the said main shaft to revolve the said second shaft, a bearing for the said second shaft and a radius-bar carrying the said bearing, said radius-bar being mounted on a vertical pivot 55 located substantially as described, whereby the separation of the said rolls by the accu-

mulation of fiber disengages the said pinions, said radius-bar moving freely in the arc of a horizontal circle, substantially as described.

2. In a coiler, a trumpet, a coiler-gear, and 60 a pair of rolls mounted side by side to feed the sliver into said coiler-gear, a horizontally-movable bearing for one of said rolls, said bearing having a flattened side, combined with a friction device adapted to ride on the 65 flattened side of the bearing to thus insure uniformity of pressure on the material wound on the roll, substantially as described.

3. In a coiler, the coiling-gear, feed-rolls 70 located above it and relatively movable horizontally, and a spring cooperating with the shaft carrying one of said rolls to retain the rolls in yielding relation, combined with a two-part cover mounted on a vertical pivot 75 and movable in a horizontal plane from over and to fully expose the said rolls and their actuating-gear, each part of the cover being movable independently of the other, substantially as described.

4. In a coiler, the two-part centrally-divided 80 cover mounted on a vertical pivot, one of said parts having attached to it a sliver-guide, combined with a trumpet sustained independently of said cover and with the pair of rolls *B*⁵, *C*², one of the shafts of said rolls being 85 movable in a horizontal plane away from the other of said shafts, substantially as described.

5. The shaft *B*⁴, its stationary bearing, and the shaft *C'* and its movable bearing, said two 90 shafts being provided with rolls, combined with a spring suitably secured to the machine, said spring shaped to yieldingly embrace said movable bearing, the said spring exerting 95 uniform pressure on the top of the said bearing when the rolls are unduly separated, substantially as described.

6. In a coiler, a casing mounted on a horizontal pivot, a trumpet carried by said casing, 100 combined with a cover mounted on a vertical pivot carried by said casing, and centrally apertured to fit snugly around said trumpet, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of 105 two subscribing witnesses.

JOHN T. MEATS.
JOSEPH S. EATON.

Witnesses:

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