

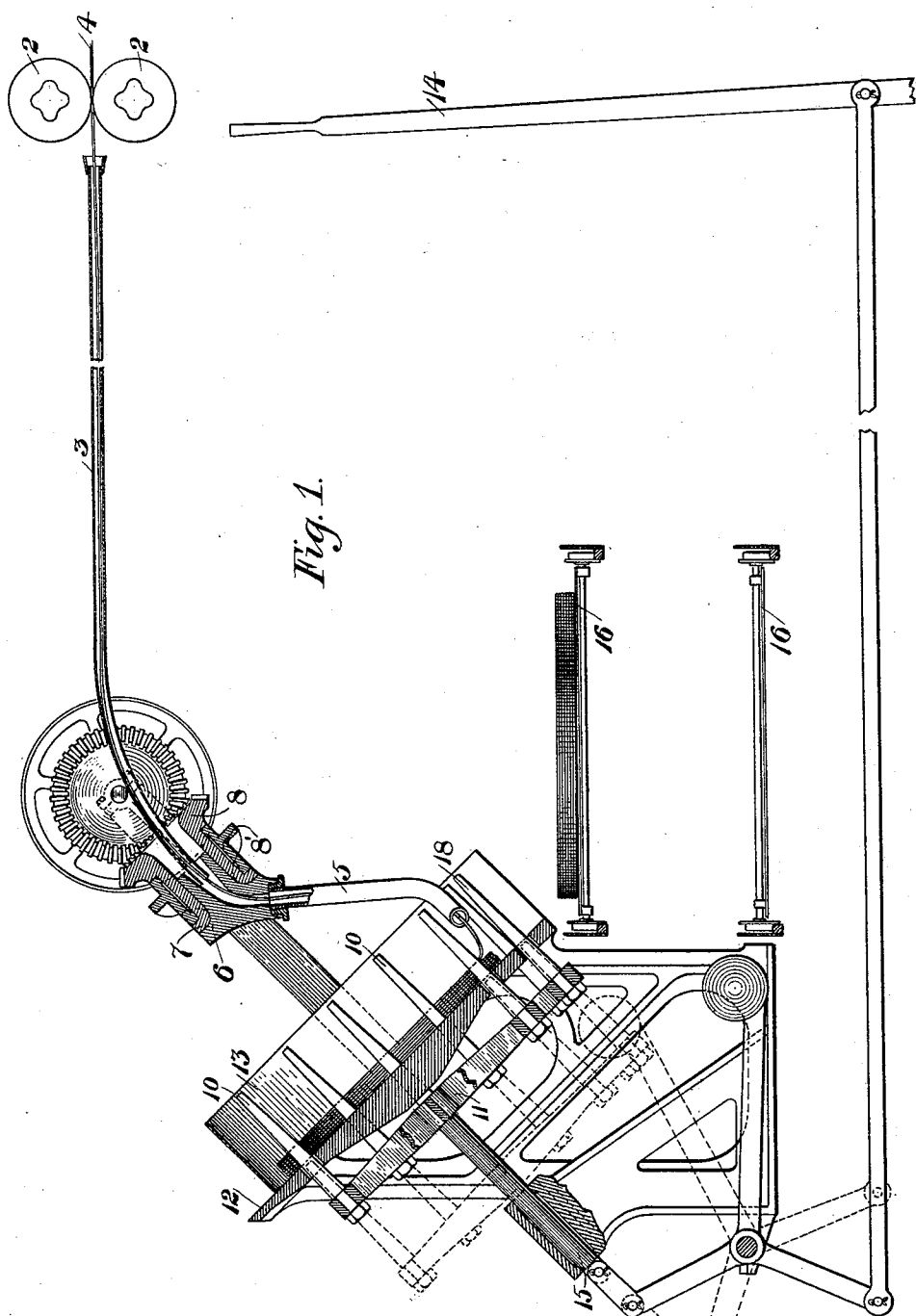
(No Model.)

2 Sheets—Sheet 1.

J. STEVENSON, Jr. & C. J. JOHNSON.
METAL COILING APPARATUS.

No. 520,942.

Patented June 5, 1894.



Witnesses
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S. M. Corwin

Inventors
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their Attorneys

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Fig. 3.

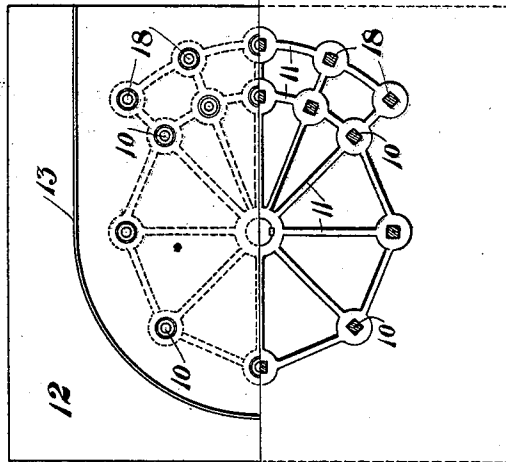
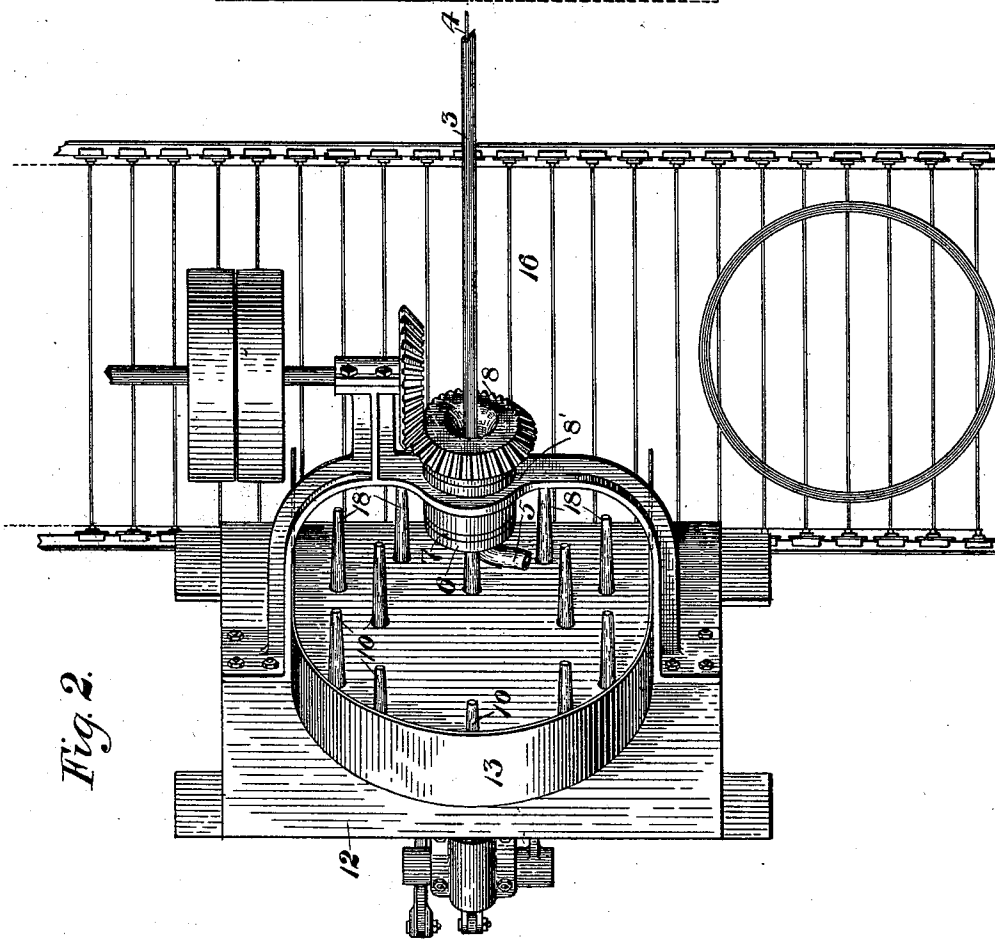


Fig. 2.



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UNITED STATES PATENT OFFICE.

JOHN STEVENSON, JR., AND CHARLES J. JOHNSON, OF NEW CASTLE,
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METAL-COILING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 520,942, dated June 5, 1894.

Application filed September 19, 1892. Serial No. 446,276. (No model.)

To all whom it may concern:

Be it known that we, JOHN STEVENSON, Jr., and CHARLES J. JOHNSON, both of New Castle, in the county of Lawrence and State of Pennsylvania, have invented a new and useful Improvement in Metal-Coiling Apparatus, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an elevation, partly in vertical section, of our improved rod-coiling apparatus. Fig. 2 is a front elevation; and Fig. 3 is a plan view, partly in section, showing the spokes of the reel.

The object of our invention is to provide a rod-coiling apparatus of simple construction, and adapted to permit the removal of the coil more easily than other apparatus heretofore known to us.

In the drawings, 2 represents the last pass of the rolls of a wire-rod mill.

3 represents the usual tubular guide leading from the rolls to the coiling apparatus, which is the subject of our invention, and 4 is the rod shown in transit from the rolls to the coiler.

The coiling apparatus proper comprises a rotary apertured coiler or lay-off 5, having a hollow neck 6 fitted within a tubular collar 7, which forms the journal of a gear-wheel 8. The neck 6 is detachable from the lay-off 5 and the collar 7, so that when worn out it may be replaced, and the collar is journaled in a suitable bearing 8'. The coiler is rotated by gearing as shown, and its revolution effects in the ordinary manner the coiling of the rod, which passes therethrough from the guide-tube 3, as above explained.

The rod as it is delivered from the lay-off is coiled around a frame or drum, which consists preferably of spokes 10, projecting from a head 11 or other holding device and passing through a stationary bed-plate 12 around which there may be a guard-rim 13. The spokes of the frame are movable lengthwise through the bed-plate, so that they may be retracted to the position shown by dotted lines in Fig. 1 for the purpose of permitting the removal of the coiled rod. Such motion may be effected by means of a lever 14 me-

chanically connected with a longitudinally sliding-rod 15 fixed to the head 11.

The bed-plate 12 is not horizontal as are the ordinary beds on which wire rods are coiled around the receiving-frame or drum, but is set at an inclination so that when the frame or drum is withdrawn from the coil the latter may slide down the face plate or may be easily pulled down the same, the rim 13 being open at the lower end of the face-plate to permit the passage of the coil. The journal of the lay-off has its axis substantially at right angles to the plane of the bed-plate, and is therefore inclined somewhat from the vertical.

The operation is as follows:—The frame or drum is made to project beyond the bed-plate 12, as shown in Fig. 1; the rod propelled by the rolls is delivered to the revolving coiler from the tube 3, and is laid in a coil around said frame or drum, which serves to effect the pulling of the last end through the tube 3, and to prevent its sticking therein when it has lost the propulsive force of the rolls. When the rod has been completely coiled the operator, by motion of the lever 14, retracts the frame or drum, moving it below the level of the bed-plate 12 and releasing the coil, whereupon the coil slides down the bed-plate upon a receiver, preferably consisting of an endless conveyer 16, which operates to carry it off to another place in the mill. The frame or drum may then be projected again in readiness to receive another coil. In order to confine the first end of the rod, if it should be delivered by the lay-off at the point adjacent to the opening at the foot of the rim 13, we prefer to provide the head 11 with a second series of spokes 18, situate at this place and projecting through the bed-plate outside the path of rotation of the lay-off, so that the rod shall be coiled between the spokes 10 and 18, and shall be held in place by the latter.

The advantages of our invention will be appreciated by those skilled in the art. The apparatus is simple, not apt to get out of order, and affords means for removal of the coiled rod with greater ease than in prior apparatus.

Modifications in the form, construction and

relative arrangement of the parts may be made by those skilled in the art without involving departure from our invention as stated in the following claims, each of which sets forth an item of invention unqualified by limitations peculiar to other claims.

We claim—

1. In metal-coiling apparatus, the combination with a coiler, of a receiving-bed on which the metal is coiled; said bed being inclined to the horizontal at an angle between ninety degrees and the limiting angle of friction between the bed and the metal substantially as described.
2. In metal-coiling apparatus, the combination with a coiler, of a receiving-bed on which the metal is coiled, and means constructed to hold said coil during the act of coiling, and to release it at the conclusion thereof said bed being inclined to the horizontal at an angle between ninety degrees and the limiting angle of friction between the bed and the metal; substantially as described.
3. In metal-coiling apparatus, the combination of a rotary coiler, a receiving-bed, and a drum or frame movable therethrough; said bed being inclined to the horizontal at an angle between ninety degrees and the limiting angle of friction between the bed and the metal substantially as described.
4. In metal-coiling apparatus, the combination of a rotary coiler, a receiving-bed, a drum or frame, and an inclosing rim; said bed being inclined to the horizontal at an angle between ninety degrees and the limiting angle of friction between the bed and the metal substantially as described.
5. In metal-coiling apparatus, the combina-

tion with a rotary coiler, of a receiving-bed, a drum or frame movable therethrough, and an outer rod-confining frame between which and the drum or frame first named the rod is coiled; said bed being inclined to the horizontal at an angle between ninety degrees and the limiting angle of friction between the bed and the metal substantially as described.

6. In metal-coiling apparatus, the combination of a rotary coiler and a receiving-plate or bed, inclined to the horizontal at an angle between ninety degrees and the limiting angle of friction between the bed and the metal said coiler being journaled on an axis substantially at right angles thereto; substantially as described.

7. In metal-coiling apparatus, the combination with a coiler, of a receiving-bed on which the metal is coiled, and a conveyer at the lower end thereof; said bed being inclined to the horizontal at an angle between ninety degrees and the limiting angle of friction between the bed and the metal substantially as described.

8. In metal-coiling apparatus, the combination of a rotary coiler, an inclined receiving-bed, a movable drum or frame, an inclosing rim open at the lower end, and a movable outer rod-confining frame opposite said open end; substantially as described.

In testimony whereof we have hereunto set our hands this 13th day of September, A. D. 1892.

JOHN STEVENSON, JR.
CHARLES J. JOHNSON.

Witnesses:

JOHN S. TAGGART,
ROBERT GRAY.