

V. E. EDWARDS.

ROD REEL.

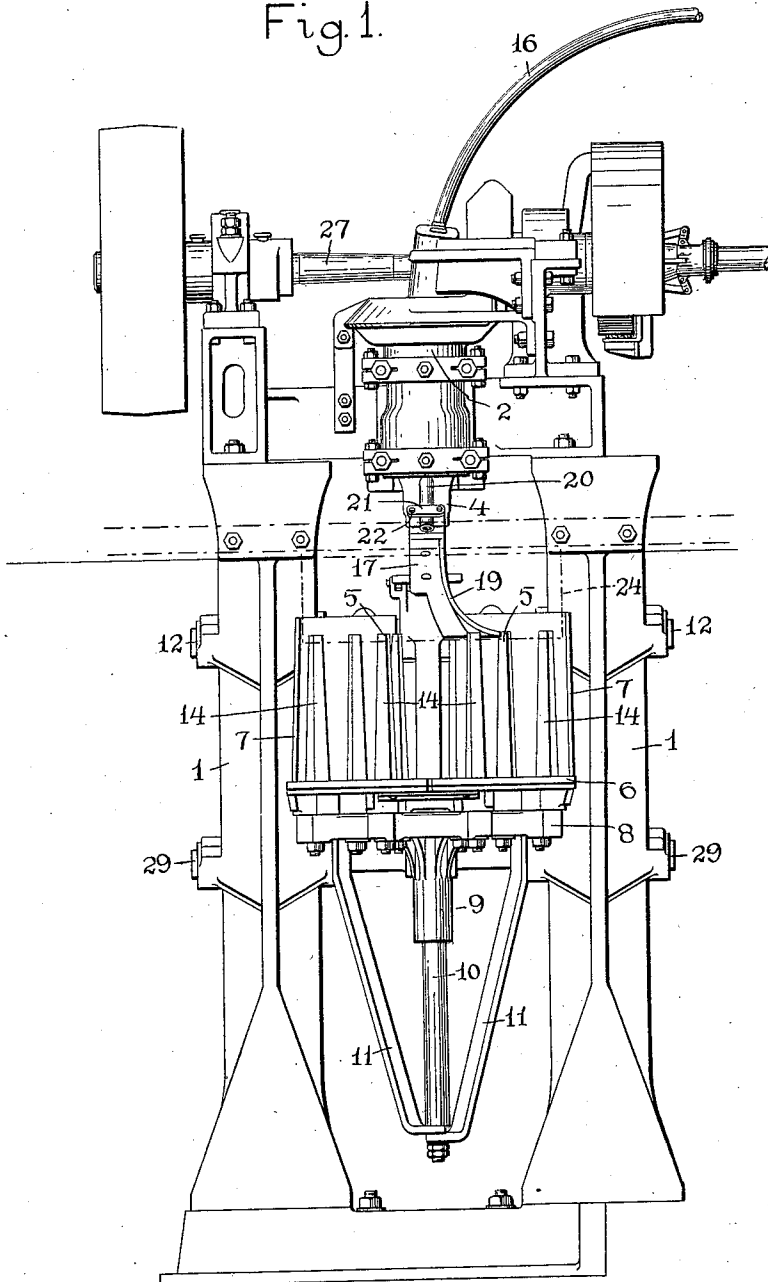
APPLICATION FILED SEPT. 29, 1905.

Patented Nov. 14, 1911.

2 SHEETS—SHEET 1.

1,008,893.

Fig. 1.



Witnesses

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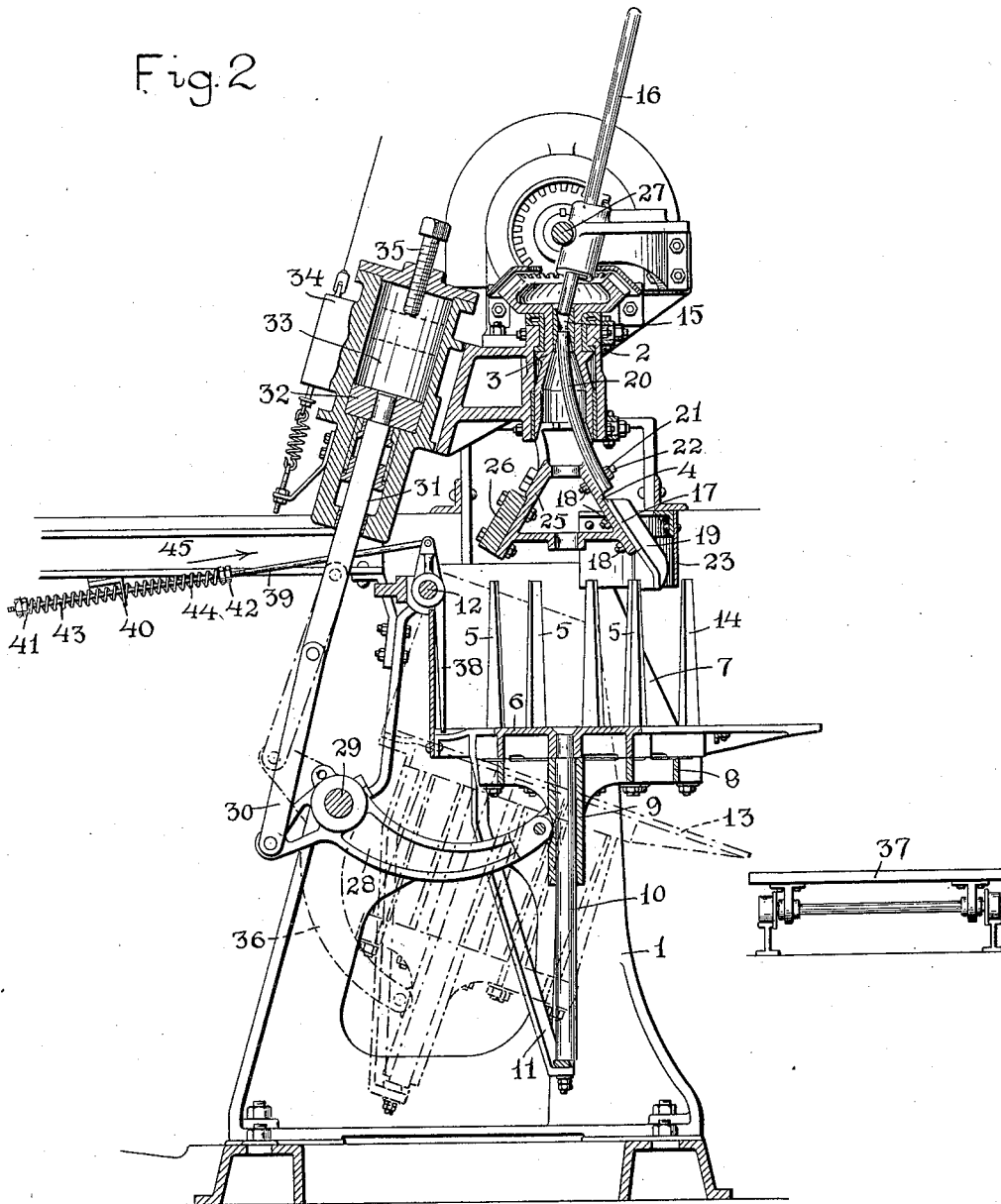
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2 SHEETS-SHEET 2.

Fig. 2



Witnesses

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UNITED STATES PATENT OFFICE.

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ROD-REEL.

1,008,893.

Specification of Letters Patent. Patented Nov. 14, 1911.

Application filed September 29, 1905. Serial No. 280,580.

To all whom it may concern:

Be it known that I, VICTOR E. EDWARDS, a citizen of the United States, residing at Worcester, in the county of Worcester and Commonwealth of Massachusetts, have invented a new and useful Improvement in Rod-Reels, of which the following is a specification, accompanied by drawings forming a part of the same, in which—

Figure 1 represents the front view of a rod reel embodying my invention. Fig. 2 is a side elevation shown in central vertical sectional view.

Similar reference letters and figures refer to similar parts in the different views.

My present invention relates to certain improvements in a rod reel for coiling wire or wire rods and it comprises means for taking the wire or wire rod from the rolling mill and coiling it by means of a revolving laying arm upon a coil supporting table and delivering the coil from said table when the operation of coiling has been completed, and the reel forming the subject of my present application is an improvement upon the wire coiling device forming the subject of U. S. Letters Patent No. 667,870, issued to me Feb. 12, 1901.

Referring to the accompanying drawings 1 denotes the supporting framework provided with a journal bearing 2 in which is journaled the hub 3 of a revolving laying arm 4 by which the rod is coiled in an annular space around the vertical pins 5 and upon the horizontal table 6. Surrounding the rear and sides of the horizontal table 6 is a curved guide-plate 7 between which and the vertical pins 5 the rod is coiled. The vertical pins 5 are held in a spider 8 and extend upwardly through openings in the horizontal table 6.

The spider 8 is provided with a hub 9 capable of a vertical sliding movement upon a spindle 10 which extends downwardly from the horizontal table 6 and is supported at its lower end by braces 11 from the under side of the table 6. The table 6 and attached guide-plate 7 are pivoted upon a shaft 12 held in the framework of the machine, and at a point near the edge of the guide-plate and at a considerable distance above the horizontal table 6, so that as the latter swings upon the pivotal shaft 12 a lateral swinging movement to the rearward will be given to the table 6, causing the front edge

of the table to be lowered without lowering the rear edge of the table and causing the table to be moved rearwardly from the position shown in full lines in Fig. 2 to the position indicated by broken lines 13. In addition to the vertical pins 5 around which the wire is coiled, the spider 8 supports near the front of the table a series of pins 14 outside the path of the coiling rod as it is deposited upon the table 6 by the revolution of the laying arm 4. The hub 3 of the laying arm is provided with a concentric opening 15 to which the rod is delivered from the rolling mill through a delivery tube 16. Removably attached to the outside of the laying arm 4 is a shoe 17 consisting of a steel plate attached to the laying arm by bolts 18 and having an upwardly projecting curved flange 19. The rod is conducted from the concentric opening 15 to the shoe 17 by a curved guide-pipe 20 having its upper end inserted in the concentric opening 15 and its lower end removably attached to the laying arm 4 by means of a strap 21 and bolts 22. The shoe 17 and guide-pipe 20 form a guideway for the rod having a continuing outer curvature in the same direction tangential to the axis of the revolving laying arm. By giving this curved section of the rod guideway a continuous outward curve to the point of delivery of the shoe 17, I prevent ballooning of the rod after it leaves the lower end of the guide-pipe 20.

Intersecting the path of the advancing end of the rod as it is fed to the reel is a stop plate 23, said stop plate having been removed from Fig. 1 in order to disclose the shoe 17 but its position is indicated in Fig. 1 by the broken lines 24, which causes the advancing end of the rod to be deflected downward into the annular coiling space on the table 6. Opposite the laying arm 4 is a similar arm 25 to which is attached a weighted block 26 which serves as a counterbalance to the shoe 17 and the guide-pipe 20. Rotary motion is imparted to the laying arm coil and guide-pipe 20 and shoe 17 by means of miter gears from a revolving countershaft 27.

The hub 9 is pivotally connected with one end of a rocking arm 28 supported upon a fixed shaft 29. The opposite end of the rocking arm 28 is pivotally connected by a link 30 with the outer end of a piston rod 31,

attached to the piston 32 inclosed in a cylinder 33, through which steam or water under pressure may be admitted alternately on opposite sides of the cylinder by means of a valve controlling mechanism contained in a valve box 34, but not shown, as its construction and operation will be well understood.

By applying steam to the under side of the piston the latter will be moved upwardly until it strikes the end of an adjusting screw 35, causing the rocking arm 28 to be swung into the position indicated by the broken lines 36 in Fig. 2. In the normal position of the table 6 its supporting surface is held in a horizontal position and supported upon the spider 8. As the arm 28 is swung into the position shown by the broken lines 36 the table 6 is dropped vertically downward and also swung laterally to the rearward, swinging on the pivotal shaft 12 which causes the supporting surface of the table to swing in the arc of a circle. The downward swinging movement of the arm 28 not only allows the coiling table 6 to assume the position shown by the broken lines 13 but also slides the spider 8 on the spindle 10, thereby withdrawing the pins 5 and 14 from the opening in the table, leaving the supporting surface of the table free to allow the coil to slide therefrom upon a truck or other receptacle 37.

The swinging motion of the rocking arm 28 is limited by the adjustable screw 35 to bring the supporting surface of the table 6 into an inclined position within the angle of repose in which gravity is insufficient to cause the coil to slide from the table. The movement of the coil from the table 6 in its inclined position is effected by means of a spring actuated lever 38 pivoted on the shaft 12 and having its lower end bearing against the outer side of the coil as it is coiled upon the supporting table 6. The upper end of the lever is pivotally connected with a rod 39 which passes through a hole in a bracket 40 and is provided with nuts 41, 42 between which and the bracket 40 are spiral springs 43 and 44.

As the table 6 is lowered and swung to the rearward with the coil pressing against the lower end of the lever 38 the lever will be swung rearwardly, causing the rod 39 to be drawn in the direction of the arrow 45, thereby compressing the spiral spring 43 and holding it under tension until the pins 5 and 14 are withdrawn from below the supporting surface of the table, when the tension of the spring 43 will be exerted to rock the lever 38 on the shaft 29 and push the coil from the inclined table upon the truck 37. By the above described method of delivering the coil from the coiling table 6, the table 6 will not require to be lowered far enough to enable gravity to move the coil from the

table, and the delivery of the coil from the table is accomplished instantaneously the moment the retaining pins have been withdrawn below the supporting surface of the table and the initial force required to start the coil in its sliding movement is supplied by the tension of the spring 43 without depending upon the uncertain force of gravity.

What I claim as my invention and desire to secure by Letters Patent is:—

1. A rod reel, provided with a supporting framework in which is journaled the hub of a laying arm, said hub provided with a longitudinal opening, a laying arm extending downward from said hub, and a curved guide tube with its lower end removably attached to said laying arm and its upper end inserted in said opening without attachment to said hub.

2. A rod reel, provided with a supporting framework in which is journaled the hub of a laying arm, said hub provided with a longitudinal opening, a laying arm extending downward from said hub, a curved guide tube with its lower end removably attached to said laying arm and its upper end inserted in said opening without attachment to said hub, and a shoe supported by said laying arm separate from said guide tube.

3. A rod reel, provided with a supporting framework in which is journaled the hub of a laying arm, said hub provided with a longitudinal opening, a laying arm extending downward from said hub, a curved guide tube with its lower end removably attached to said laying arm and its upper end inserted in said opening without attachment to said hub, and a shoe removably held on said laying arm in line with but separate from the lower end of said guide tube.

4. A rod reel, having a horizontal supporting table to receive a coiled rod, said table pivoted above the plane of the coil supporting surface, means for swinging said table on its pivot, thereby imparting a lateral movement to said table as it assumes an oblique position, and means operated by the lateral movement of said table for applying pressure to the coil in a direction parallel with the surface of the table.

5. In a rod reel, the combination with a table pivoted above the plane of its supporting surface, of means for swinging said table on its pivot, and means for applying pressure to one side of a coil supported on said table by the lateral movement of the table during its swinging motion.

6. In a rod reel, the combination with a supporting framework, of a rod supporting table pivotally connected with said framework, operative mechanism for swinging said table on its pivotal connection comprising a piston equipped cylinder and an adjusting screw held by said cylinder in the path of the piston.

7. A rod reel, having a horizontal supporting table to receive a coiled rod, means for swinging the table into an oblique position on which the coil is held at an angle of repose, a movable lever bearing against the coil, and means for moving said lever operated by the swinging movement of said table.

8. In a rod reel, the combination of a horizontal coil supporting table pivoted above its supporting surface, means for swinging said table on its pivot, means for limiting its swinging movement, means for retaining a coil on said table during its swinging movement, means for withdrawing said retaining means, and means for imparting a yielding pressure to the coil held on said table.

9. In a rod reel, the combination with a rod supporting table, of means for tilting said table, means for applying a yielding pressure to a coil on said table, means for retaining the coil against said pressure during the tilting movement of the table, and means for releasing the coil.

10. In a rod reel, the combination with a rod supporting table, of means for tilting said table about an axis above the coil supporting surface of the table, whereby a lat-

eral swinging movement is imparted to the table, means for retaining the coil on said table during its tilting movement, means for withdrawing said retaining means at the end of said tilting movement, and a spring actuated lever bearing against the coil as the table is swung laterally.

11. In a rod reel, the combination with a rod supporting table, of means for swinging said table on an axis above the coil supporting surface of the table from a horizontal position to an inclined position in which a coil will be supported at an angle of repose, a yielding lever arranged to bear against one side of the coil and a spring applied to said lever to press it against the coil.

12. In a rod reel, the combination with a rod supporting table pivoted upon a shaft above the coil supporting surface of the table, means for moving said table on its pivotal shaft, a lever pivoted on said shaft and a spring applied to said lever to force it against the coil.

Dated this 18th day of September 1905.

VICTOR E. EDWARDS.

Witnesses:

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