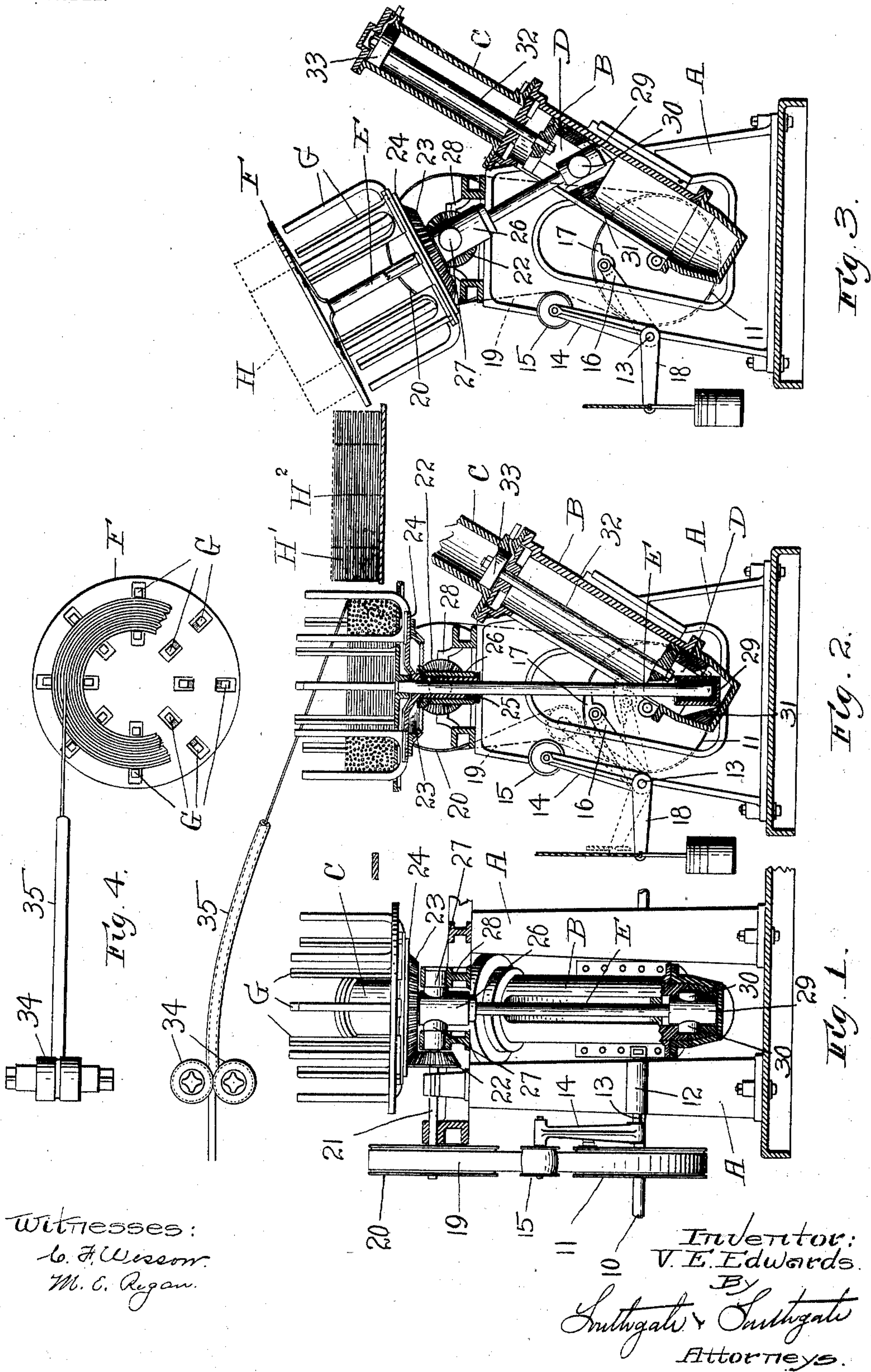


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V. E. EDWARDS.
ROD OR WIRE REELING OR COILING DEVICE.
APPLICATION FILED MAR. 15, 1902.

NO MODEL.



UNITED STATES PATENT OFFICE.

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ROD OR WIRE REELING OR COILING DEVICE.

SPECIFICATION forming part of Letters Patent No. 760,323, dated May 17, 1904.

Application filed March 15, 1902. Serial No. 98,360. (No model.)

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 State of Massachusetts, have invented a new and useful Rod or Wire Reeling or Coiling Device, of which the following is a specification.

In my Patent No. 667,870, granted February 12, 1901, I have shown, described, and claimed a reeling or coiling device for rod or wire mills in which the reel occupied a horizontal position while the rod or wire was being coiled thereon and in which the delivery of the coil or bundle of wire was effected by inclining or tilting the platform of the reel and by withdrawing the pins from the platform, so that the coil or reel of wire would slide laterally off of the inclined platform. This invention was shown as applied to a reeling or coiling device of the stationary type—that is to say, the platform and pins did not turn or rotate, the reeling or coiling of the wire being effected by a revolving spout.

The object of the present invention is to apply the general idea of this delivery device described and claimed in my previous patent to a reeling or coiling device which rotates or turns to effect the reeling or coiling operation.

To this end the present invention consists of a rod or wire coiling device comprising a reel and a stripping-platform, said platform occupying a horizontal position while the rod or wire is being coiled thereon, means for rotating the platform and reel while the wire is being coiled thereon, and means for tilting the platform and for causing a relative movement between said platform and reel to provide for a lateral sliding delivery of the bundle or coil off of said platform. The reel may consist of a tub, pins, or other similar device, the pin construction being illustrated. The tilting operation and the relative movement between the stripping-platform and reel are preferably simultaneously effected. The axis of the reel is normally vertical and stands in this posi-

tion while the wire or rod is being coiled. The preferred way to cause the relative movement between the stripping-platform and reel is to raise the platform above the reel as the parts are swung or brought to inclined position. The reeling or coiling is thus done with the reel in a horizontal position, which is considered desirable, and the delivery is effected by sliding down a smooth slope somewhat greater than the angle of repose. This easy sliding motion delivers the coil without musing, which is very important.

The invention further consists of certain important points of construction hereinafter particularized in the claims.

Referring to the accompanying drawings, forming part of this application for patent, Figure 1 is a front view of a device constructed to embody my present invention. Fig. 2 is a sectional elevation taken at right angles to Fig. 1. Fig. 3 is a view similar to Fig. 2, illustrating the delivery operation; and Fig. 4 is a plan showing the way the wire or rod is led to the reeling device.

Referring to said drawings and in detail, A designates a suitable frame, secured to which is an inclined slotted guiding-cylinder B. A cross-head D is fitted to slide in the guiding-cylinder. Stepped in the cross-head D is a shaft E, on the end of which is secured the stripping-platform F of the reel.

G designates the inner and outer circle of the guiding-pins, which together with said platform make up the receptacle for the wire or rod.

H designates the finish-coil just stripped and ready to slide.

H' designates the finish-coil after it is slid from the platform out onto a coil-conveyer H².

The foregoing are the principal parts of the reel.

The actuating and driving connections for the same may be arranged as follows: 10 designates a driving-shaft secured on which is a pulley 11. A bearing 12 is secured to the frame A, and the shaft 13 is journaled therein. An arm 14 is secured on said shaft. Said arm

carries a stud at its end on which is journaled a tightener-pulley 15. An arm 16 is also secured on said shaft and the same carries a brake 17, bearing on the inside of the pulley 11. An arm 18 is also secured on said shaft 13. This arm may be weighted. A cord is connected thereto, which is pulled to start the reel in operation and which is slacked off to stop the operation. Said tightener-pulley 15 bears on the driving-belt 19, which is trained around said pulley 11 and the driving-pulley 20. When the cord is pulled to lift the arm 18, the belt is tightened by the tightener-pulley 15 and power is communicated from the driving-pulley 11 to the pulley 20 to operate the reel. When the cord is released, the tightener-pulley 15 is moved away from the belt and the reel is stopped. This forms one convenient way of applying power to the driving-pulley 20. The driving-pulley 20 is arranged on a shaft 21, journaled in bearings secured on the top of the frame A. On the end of the shaft 21 is arranged a bevel-pinion 22, which meshes with a bevel-gear 23, secured on a frame or platform 24, which carries the pins G, which project through the base F. When the driving-pulley 20 is turned, the reel made up of the platform and pins will be rotated. This forms one convenient mechanism for rotating the reel. The said platform 24 is provided with a bushing 25, in which the shaft E is journaled. The said bushing is fitted in a bearing 26, which bearing has projecting trunnions 27 27, which are fitted in bearings 28 28, secured to the frame. A collar is generally arranged on the lower end of the bushing 25 to keep the same in place in the bearings 26. The trunnions 27 27 are arranged in line with the shaft 21 or in line with the axis of the bevel-pinion 22. By this construction the reel can be tilted or inclined about the said axis without affecting or disturbing the means for rotating the same.

The cross-head D is made in three parts which are secured together by suitable screws, as shown, and the said three parts hold a step-bearing 29 by means of trunnions 30 30 projecting therefrom. By this arrangement the said step-bearing 29 can turn in the cross-head D. The end of the cross-head is made conical, as shown, and a conical cap or head 31 is secured on the end of the guiding-cylinder B, so that when the cross-head D is forced to its lowest position it will be brought to an accurate predetermined location.

Projecting from the cross-head D is a piston-rod 32, which passes through a head or stuffing-box between the two cylinders B and C and which has a piston 33 arranged thereon.

Suitable passages are arranged in the cylinder C, so that pressure can be admitted to either side of said piston, suitable valves and pipes being arranged for this purpose, which need not be herein described.

34 designates the last rolls of the mill, and 35 designates the guiding-pipe, which directs the rod or wire to the reel.

The guiding-pipe is shown in the drawings shorter and above the position it usually occupies in practice, the last rolls and guiding-pipe being simply indicated to illustrate the invention.

The operation is as follows: The reel normally stands in the position shown in Figs. 1 and 2. The end of the rod or wire is led to the reel, and the means for rotating the reel are started in operation, so that the rod or wire will be coiled or reeled up into a bundle. When the coiling or reeling operation is completed, pressure is admitted under the piston 33. This will raise the cross-head D and will thereby incline the reel and elevate the platform above the pins to effect a lateral delivery of the coil or bundle, as shown in Fig. 3. This operation will take place because the said cylinders occupy an inclined position. The slotted inclined cylinder B thus forms a guiding means which is inclined to the axis of the reel to effect the simultaneous tilting of the reel and the elevation of the stripping-platform above the reel. After this delivery has taken place pressure is admitted on the other side of the piston 33 and the cross-head D forced to its lowest position, restoring the reel accurately to its normal position.

While pressure-operated means is shown as the preferred arrangement for effecting the delivery operation, I am aware, of course, that mechanical or other devices may be employed for this purpose without departing from the scope of my invention as defined in the claims, and I am also aware that many changes may be made in designing an apparatus to embody my invention without departing from the scope thereof as expressed in the claims.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a rod or wire coiling device, the combination of a frame, a reel mounted to rotate relatively to the frame, means for rotating the reel, a stripper-platform, and means for tilting the platform and for simultaneously causing a relative movement between the platform and reel to allow a sliding lateral delivery of the bundle or coil.

2. In a rod or wire coiling device, the combination of a frame, a reel mounted to rotate relatively to the frame, means for rotating the reel, a stripper-platform, and means for tilting the platform and for moving the same above the reel to allow a sliding lateral delivery of the bundle or coil.

3. In a rod or wire coiling device, the combination of a frame, a reel and stripper journaled in said frame, the axis thereof occupying a vertical position while the rod or wire is being coiled, means for rotating the said

reel and stripper for the coiling operation, and means for tilting said stripper and for causing a relative movement between said stripper and reel.

5 4. In a rod or wire coiling device, the combination of a frame, a reel and stripper journaled in said frame, the axis thereof occupying a vertical position while the rod or wire is being coiled, means for bodily rotating said
10 reel and stripper for the coiling operation, and means for tilting said stripper and simultaneously causing a relative movement between said stripper and reel.

15 5. In a rod or wire coiling device, the combination of a reel and stripper, said reel occupying a horizontal position while the rod or wire is coiled thereon, and means for inclining and raising said stripper above the said reel.

20 6. In a rod or wire coiling device, the combination of a reel made up of a stripping-platform and pins, said platform occupying a horizontal position while the rod or wire is being coiled thereon, means for rotating said
25 platform and pins for the coiling operation, and means for tilting said platform and for raising the same above the pins to provide for a lateral delivery of the bundle or coil off of said platform.

30 7. In a rod or wire coiling device the combination of the framing, a rotary reel and a stripper-platform pivoted to said frame on a line substantially intersecting and perpendicular to the axis of the reel, and means for
35 turning the platform and reel on the pivot and for moving the platform above the reel to allow a sliding lateral delivery of the bundle or coil.

40 8. In a rod or wire coiling device, a revolvable reel, a stripping-platform, said platform occupying a horizontal position while the rod or wire is being coiled thereon, a bushing projecting from said reel, a shaft extending from said platform through said bushing, means
45 for rotating said reel and platform, and means for elevating the lower end of said shaft to a point above and to one side of its normal position, whereby the reel will be inclined and the platform raised to provide for a lateral
50 delivery of the bundle or coil off of said platform.

55 9. In a rod or wire coiling device, the combination of a reel, a stripping-platform, said platform occupying a horizontal position while the rod or wire is being coiled thereon, a bushing projecting from said reel, a trunnion-bearing in which said bushing is journaled, a shaft

extending from the platform through said bushing, a bevel-gear secured to the said frame, a bevel-pinion arranged in line with said trunnions, and means for raising the lower end of said shaft along a line inclined to the normal axis of the reel to provide for a lateral delivery of the coil.

10. In a rod or wire coiling device, the combination of a reel, a platform, said platform occupying a horizontal position while the rod or wire is being coiled thereon, a shaft extending from said platform, guiding means for the lower end of said projecting shaft inclined to the normal axis of the reel, and means for raising the lower end of said shaft along the inclined guiding means.

11. In a rod or wire coiling device, the combination of a reel, a platform, a shaft projecting down from said platform, an upper trunnion-bearing therefor, an inclined guiding device, a cross-head arranged to cooperate therewith, a trunnion step-bearing in said cross-head for the end of the shaft, and means for raising and lowering the cross-head.

12. In a rod or wire coiling device, the combination of a reel, a platform, a shaft projecting down from said platform, a cross-head having a conical end, in which said shaft is stepped, guiding means having a conical end, and means for raising and lowering the cross-head.

13. In a rod or wire coiling device, the combination of a reel, a platform, said platform occupying a horizontal position while the rod or wire is coiled thereon, a shaft projecting down from said platform, a cross-head, in which the end of said shaft is stepped, inclined guiding means for said cross-head, a cylinder in line with said guiding means, and an operating-piston therein connected to said cross-head.

14. In a rod or wire coiling device, the combination of a reel, a platform, said platform occupying a horizontal position while the rod or wire is coiled thereon, a shaft projecting therefrom, a cross-head mounted in an inclined slotted guiding-cylinder, in which the end of said shaft is stepped, a cylinder in line with the guiding-cylinder, and an operating-piston therein connected by a piston-rod to said cross-head.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

VICTOR E. EDWARDS.

Witnesses:

LOUIS W. SOUTHGATE,
JOHN G. CHAMBERLIN.