(No Model.) 2 Sheets—Sheet 1.

P. L. DAY.

REEL GUIDE AND REEL.

No. 423,674. Patented Mar. 18, 1890.

Fig 3 -

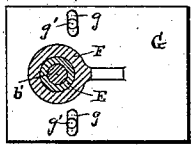


Fig 4 -

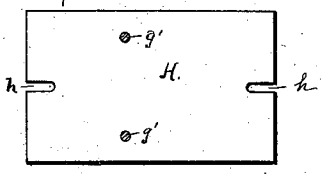


Fig 2 -

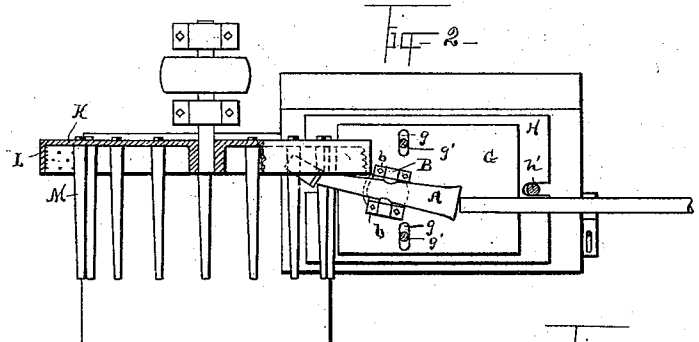
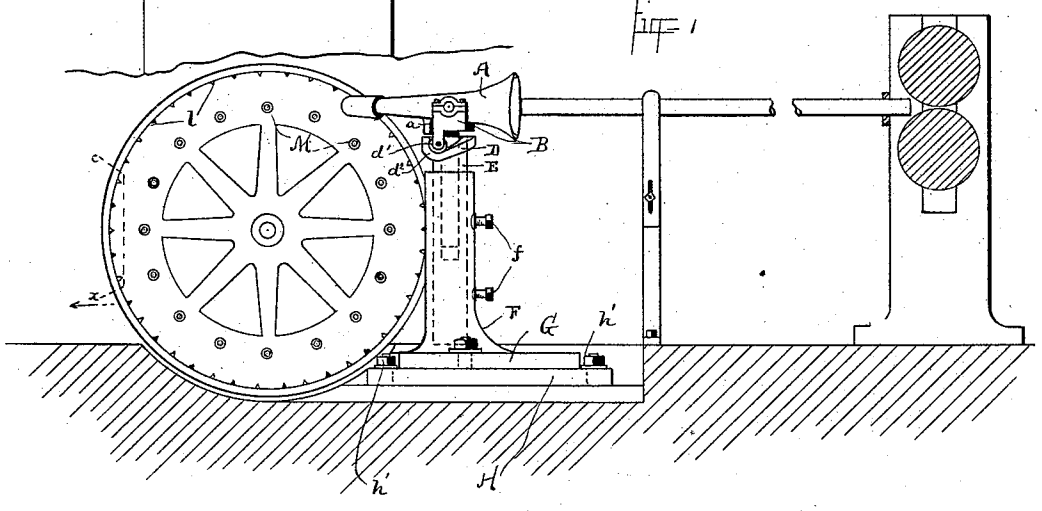


Fig 1



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(No Model.) 2 Sheets—Sheet 2.

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Fig 8.

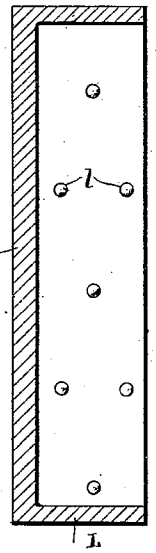


Fig 7.

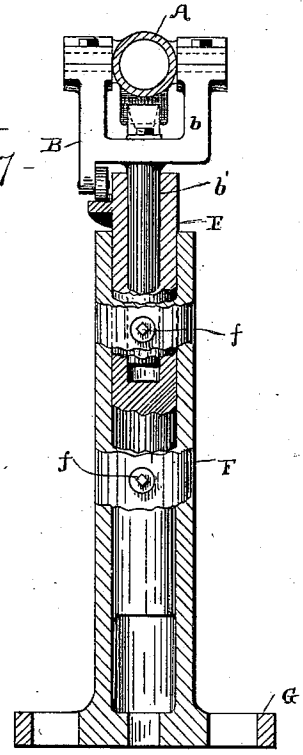


Fig 5.

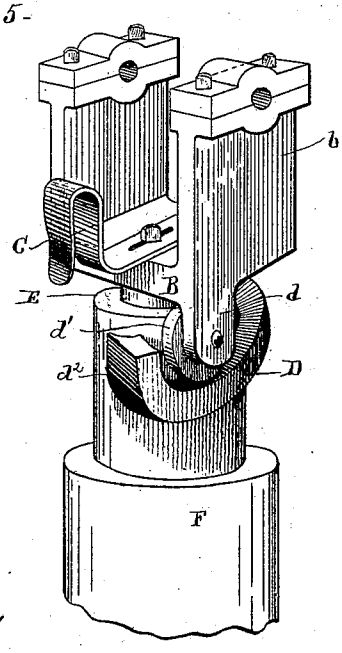
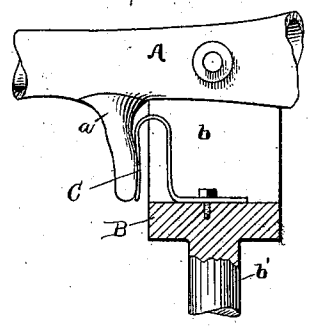


Fig 6.



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UNITED STATES PATENT OFFICE.

PATRICK L. DAY, OF CLEVELAND, OHIO, ASSIGNOR OF ONE-HALF TO WILLIAM ARKLESS, OF SAME PLACE.

REEL-GUIDE AND REEL.

SPECIFICATION forming part of Letters Patent No. 423,674, dated March 18, 1890.

Application filed October 29, 1889. Serial No. 328,569. (No model.)

To all whom it may concern:

Be it known that I, PATRICK L. DAY, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, and State of Ohio, have invented certain new and useful Improvements in Reel-Guides and Reels, of which the following is a specification, the principle of the invention being herein explained, and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

One part of my invention relates to a guide constructed, when left to itself, to automatically direct its discharging extremity toward a predetermined point, the object of such construction being, that when said guide is suitably located with reference to a reel, said guide may normally have its discharging extremity directed toward a point of the reel best adapted to cause the rod which discharges from said guide to be caught by and coiled on the reel. Hence when the guide has discharged the last portion of one length of rod, it may automatically swing into position best suited to cause the first portion of the next length of rod discharged therefrom to be engaged by the reel, so as to suitably coil said length of rod thereon.

Certain other parts of the invention relate to the specific construction of the guide mechanism, and to the specific construction of a reel in itself, all as will be hereinafter described, and finally pointed out in the claims.

Referring to the drawings, Figure 1 is a view in side elevation of my preferred form of mechanism for carrying out the principle of my invention. Fig. 2 is a plan view thereof with a certain portion of the reel cut away. Fig. 3 is a detail plan view of the bed-plate, to which the standard of the guide-supporting mechanism is attached. Fig. 4 is a detail plan view of a lower bed-plate, on which said standard bed-plate rests. Fig. 5 is a detail in perspective of the swinging guide-support and the downwardly-inclined way on which it has bearing. Fig. 6 is a detail in side elevation of certain portion of the guide, and also shows in section the guide-support. Fig. 7 is a detail rear view of the guide-support and its connecting mechanism with certain of the mechanism cut away. Fig. 8 is a detail sectional view representing the formation of the reel-flange and the reel-disk.

The guide A is horizontally pivoted to a guide-support B, so that it may have pivotal movement in a vertical plane. The guide-support B is provided with two ears *b*, between which it is located, and to which it is thus horizontally pivoted. A spring C is located between the said ears and attached to said guide-support, and provides spring-bearing for lug *a*, which latter depends from the lower side of the guide, the construction thereof being such that the spring tends to maintain the discharging extremity of the guide in proper raised position for its work of discharging the rod within the reel. The side piece of the guide-support farthest from the plane of the reel-disk is provided at its forward portion with a depending hanger *d*, to which is journaled an anti-friction roller *d'*. This roller has bearing on the inclined way D, formed on side of standard E, said inclined way being formed inclined downwardly in a direction from the front toward the rear of said standard, so that the inclination of said way D is toward the transverse plane of the forward portion of the reel and adapted to cause the guide-support when having bearing on said downwardly-inclined way to direct the guide toward the reel-disk, and thereby cause the discharging-rod to be introduced into the reel within the circular plane of the reel-flange. The guide A is located adjacent to the forward portion of the reel, and relatively to the disk and the flange of the reel, so that the discharging extremity of said guide, when the guide is in free normal position and with roller *d'* against stop d^2, is directed toward the front of the disk of the reel so as to deliver the first portion of the discharging-rod between the disk and the flange of the reel. Said downwardly-inclined way D is formed at its downward extremity with a stop d^2, against which the roller *d'* abuts when the guide-support has been swung in rotary action down said downwardly-inclined way and so as to locate the guide in proper position for discharge of the rod beneath the reel-flange. Said stop thus maintains the

guide-support in such proper position to cause the guide to be maintained in said desired position for the discharge of the rod.

Instead of employing an anti-friction roller it is apparent that the hanger *d* might itself be placed in direct contact with the downwardly-inclined way D.

The guide-support B is provided with a central depending pin *b'*, which is loosely fitted and has rotary movement in the socket-standard E, and said standard is loosely fitted in the sleeve-standard F, which latter is rigidly connected to bed-plate G. Said bed-plate G is in turn supported by bed-plate H, and the latter may rest on any suitable foundation. Bed-plate H is formed, respectively, at its forward and rearward portions with a longitudinal slot *h*, and in said slots fastening bolts *h'* are adapted to operate and permit longitudinal adjustment of plate H under due manipulation of the bolt-nuts. Plate G is provided, respectively, at its two sides with a transverse slot *g*, in which work fastening-bolts *g'*, and under the manipulation of said bolt-nuts the said plate G may be transversely adjusted. Set-screws *f* are threaded in vertical line in sleeve-standard F, and have end bearing against socket-standard E, so that under due manipulation of said set-screws said socket-standard may be vertically adjusted.

The flange L of the reel is formed at a right angle to the disk K of the reel, and the reel-arms M extend horizontally beyond said reel-flange, so that the greater portion of the lengths of said arms are outside of the circular plane of the reel-flange. The reel-flange is provided on its inner periphery with spuds *l*, designed to engage with the entering end of the rod so as to aid in causing the latter to be caught by the reel, and so properly form the coil of rod.

In the operation of the invention as the first portion of a rod or wire enters the guide A, the latter being in normal position with its discharging extremity inclined toward the reel-disk, said entering end of the rod or wire is, by reason of such direction of the guide, directed toward the front of the reel-disk and beneath the reel-flange, and said first portion of the rod or wire is thereby caused to be caught by the rotating reel, and the coil of wire or rod to be properly formed. As the reel rotates in such formation of the coil the coiling-rod has transverse movement on the reel-arms, and has lateral play in and out on said reel-arms, such lateral play being permissible by reason of the free swinging action of guide-support B. As soon as one length of rod or wire has in such process of coiling passed out from the guide A, the latter automatically swings back to its position, which it at first had when the entering end of said rod passed through it, and said guide A thereby assumes suitable position for the reception of the entering end of another length of rod, so as to properly direct the same beneath the reel-flange and thereby cause the rod to be properly coiled on the reel. Said automatic return of the guide to its normal position when free from the influence of the coiling-rod is thus productive of an economical and valuable result in the coiling of rods and wire.

The various movements and adjustments of the guide-supporting mechanism possible under their respective constructions, as shown in the drawings and hereinbefore set forth in this description, contribute toward the efficiency of the guide, all as is apparent to one skilled in the art.

The foregoing description and accompanying drawings, set forth in detail, mechanism in embodiment of my invention, change may be made therein, provided the principles of construction respectively recited in the following claims are employed.

I therefore particularly point out and distinctly claim as my invention—

1. The combination of a reel, a guide, and a swinging guide-support, said members constructed and relatively located, substantially as set forth, whereby said guide-support automatically swings the discharging extremity of said guide toward the front of the disk of said reel.

2. The combination of a reel having a flange projecting from its disk, a guide, and a swinging guide-support, said members constructed and relatively located, substantially as set forth, whereby said guide-support automatically swings the discharging extremity of said guide toward the front of the disk of said reel, so as to deliver the first portion of the discharging-rod between the disk and the flange of said reel.

3. The combination, with a guide, of a swinging guide-support and a downwardly-inclined way on which the latter has travel, and thereby automatically directs said guide toward a desired point, substantially as set forth.

4. The combination, with a guide, of a swinging guide-support, a standard to which said guide-support is loosely connected by pin and socket, and a downwardly-inclined way on which a side piece of said guide-support travels so as to automatically direct said guide toward a desired point, substantially as set forth.

5. A reel having the inner periphery of its flange provided with the spuds *l*, substantially as set forth.

In testimony that I claim the foregoing to be my invention, I have hereunto set my hand this 24th day of October, A. D. 1889.

P. L. DAY.

Witnesses:
J. B. FAY,
E. E. PATE.