

(No Model.)

L. RIVERS.

WIRE REEL.

No. 302,591.

Patented July 29, 1884.

FIG. 1.

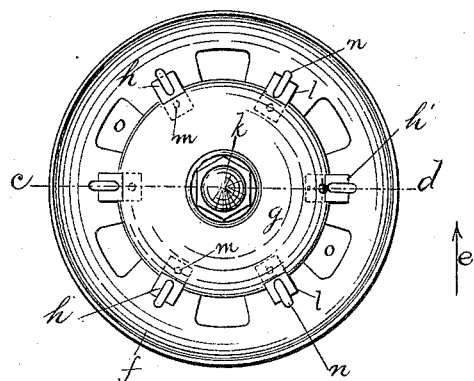


FIG. 3.

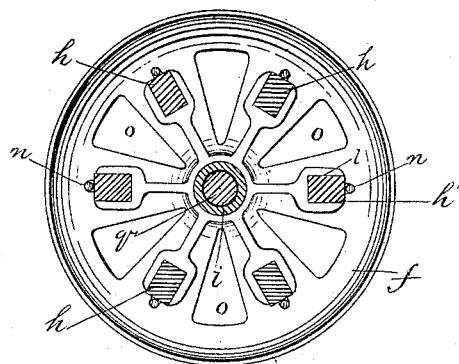


FIG. 2.

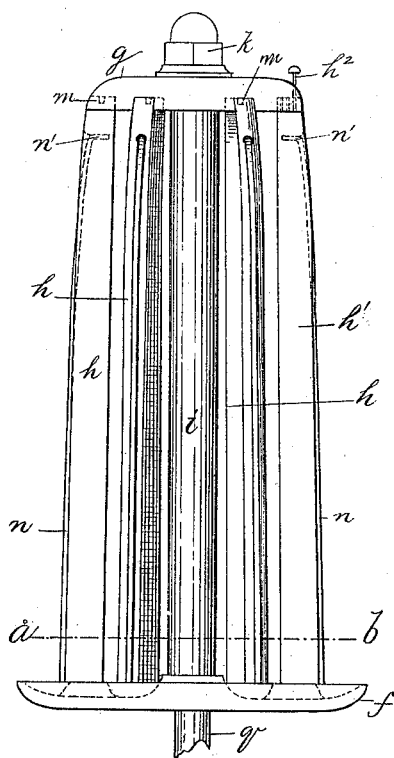
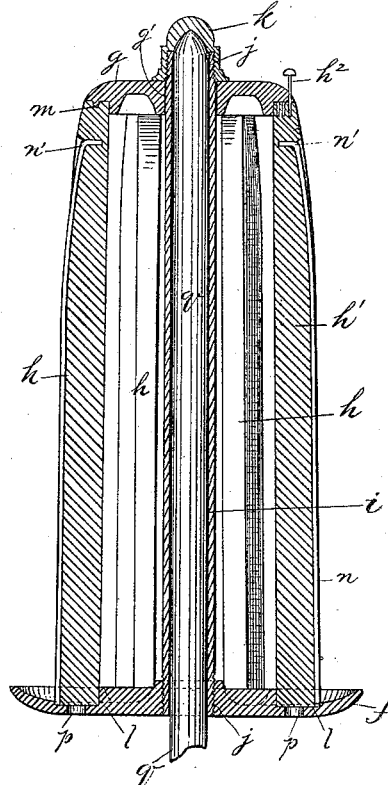


FIG. 4.



Witnesses;

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# UNITED STATES PATENT OFFICE.

LEWIS RIVERS, OF WORCESTER, MASSACHUSETTS.

## WIRE-REEL.

SPECIFICATION forming part of Letters Patent No. 302,591, dated July 29, 1884.

Application filed February 4, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, LEWIS RIVERS, of Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Wire-Reels; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 represents a wire-reel in plan view with my improvements applied thereto. Fig. 2 represents a side view or elevation of the reel shown in Fig. 1. Fig. 3 represents a transverse or cross section through the reel, taken on line *a b*, Fig. 2, looking down, showing a plan view of the bottom plate of said reel; and Fig. 4 represents a central vertical section through the reel, taken on line *c d*, Fig. 1, looking in the direction indicated by arrow *e*, same figure.

My invention relates to improvements on what are known as "wire-reels" or "wire-blades" in the manufacture of wire and similar strands of metal, said "reels" or "blades" being employed for supporting and holding the coils of wire in the tanks or other receptacles containing the liquor used for coating said wire preparatory to the operation of drawing the same through the reducing-dies in the ordinary way.

Said invention consists in the construction and arrangement hereinafter more fully described, whereby said reels or blades are greatly strengthened and made more durable, while at the same time they may be more easily adjusted or taken apart for repairs or renewal of any of the parts than those now in use.

To enable those skilled in the art to which my invention belongs to make and use the same, I will proceed to describe it more in detail.

In the drawings, *f* represents the bottom plate of the reel or blade; *g*, the top plate, and *h h'* the vertical arms or spokes extending between said bottom and top plates. The part marked *i* is a vertical hollow shaft, which is provided with threads *j* for a short distance from both ends. The bottom of said hollow shaft *i* is rigidly screwed into a central thread-

ed opening formed in the bottom plate, *f*, while its upper end passes through a smooth opening, *g'*, formed in the top plate, *g*, and extends a short distance above the top of said plate, as is shown in Fig. 4 of the drawings, so that a hollow holding-nut, *k*, may be screwed onto its end, and turned up tight against the top surface of said plate *g*, to hold the several parts of the reel or blade securely in position after the arms or spokes *h h'* have been fitted in place, as shown in the drawings. The bottoms of the arms or spokes *h h'* are held at the bottom in recesses or sockets *l*, formed in the bottom plate, *f*, and their upper ends in sockets formed in the top plate, *g*, and by means of studs or pins *m*, also formed on the bottom of top plate, *g*, which latter enter correspondingly-shaped holes formed in upper ends of the arms or spokes.

By the aforesaid construction and arrangement it will be seen that by turning the hollow nut *k* against the top plate, *g*, as before described, after the arms *h h'* have been adjusted in position, as shown in the drawings, the several parts of the reel or blade are very securely and rigidly held in position, and when any of the arms require to be repaired or renewed the operation may be performed in a very easy and expeditious manner by simply turning the nut *k* so as to allow the parts to be removed, and then tightening it up again after the adjustment or renewal of said parts.

In practice I design to make all the parts of my improved reel or blade, with the exception of the arms or spokes *h h'*, of metal or a composition of metals such as will resist as far as is possible the chemical action of the liquor in which the reel or blade is immersed and turns in the process of "drawing" wire. The arms I propose to make of wood in the ordinary way; but, if preferred, those also may be made of hollow metal of the above description. Provision is made for tightening the coil of wire upon the reel or blade when it becomes loose, or, if it does not fit tightly over said reel, by making one of the arms or spokes *h'* adjustable. Its lower end is held in place in the same manner as the other arms, *h*; but its upper end is arranged to be drawn forward by hand, and fastened by a pin, *n*,

inserted vertically through the top plate, *g*, several vertical openings being made in the upper end of the arm *h'*, so that it may be fastened in several adjusted positions. All of the arms are provided upon their outer sides with the usual vertical guard wires or rods, *n*, fastened at the bottom in a circular socket formed in the bottom plate, *f*, and at the top by driving the bent end *n'* into the body of the arms. The reel or blade is suspended and turns on a central vertical shaft or spindle, *q*, rigidly fastened to the bottom of the tank or other receptacle which contains the liquor for preparing the wire for drawing. Said upright spindle *q* extends up through the hollow shaft *i*, and abuts against the hollow nut *k*, which acts as the fulcrum for the reel. It is made conical-shaped, and the top of the spindle also correspondingly shaped, as is shown in Fig. 4, so as to produce less friction and a proper action of the reel. The bottom plate, *f*, of the reel is provided with openings *o* between the arms *h h'*, and openings *p* under said arms, to allow the liquor to flow out when the reel is removed from the receptacle in which it is placed.

It will be obvious to those skilled in the art to which my invention appertains that by the employment of a hollow shaft, *i*, such as hereinbefore described, which acts as a long bearing for the pivot-spindle *q*, a much more even and regular turning motion is imparted to the reel in drawing or uncoiling the wire from the same than by the old form or style of reels now in use. Then, again, the reel, as a whole, is much stronger, and consequently more dura-

ble and less liable to get out of repair, than the said old form of reels.

Although my improved reel or blade is more especially designed for use in "wire-drawing," after the wire has been coated by immersion in a suitable liquor, as before described, and "drawn" or reduced while said coating is still moist, it may be employed for holding wire at any other stage in its manufacture without departing from the principle of my invention.

Having described my improvements in wire reels or blades, what I claim therein as new and of my invention, and desire to secure by Letters Patent, is—

1. A wire reel or blade having metallic bottom and top plates, a central vertical hollow shaft, and a hollow holding-nut, in combination with the vertical connecting arms or spokes of said reel or blade, and its vertical central pivot-spindle, constructed and arranged substantially as shown and described, for the purpose stated.

2. In a wire reel or blade, the combination of the bottom plate, the connecting tubular shaft, its holding-nut, and the arms or spokes provided with vertical openings in their upper ends, with the metallic top plate provided with vertical studs or pins adapted to fit and hold in the vertical openings in the arms or spokes aforesaid, substantially as and for the purpose set forth.

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Witnesses:

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