(No Model.)

E. L. WARREN.

WIRE REEL AND TUB.

No. 320,421. Patented June 16, 1885.

Fig. 1.

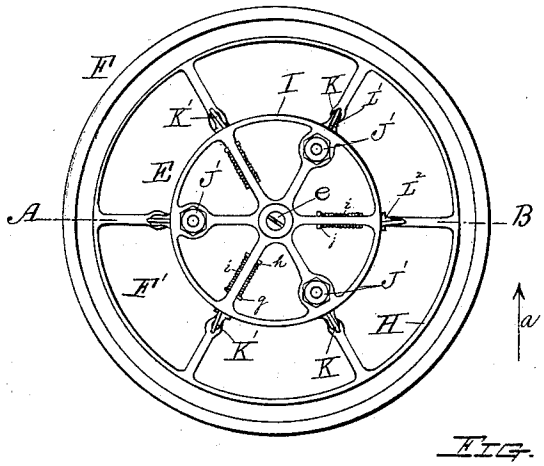

Fig. 3.

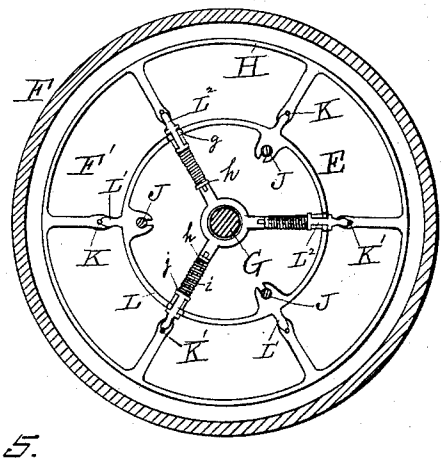

Fig. 5.

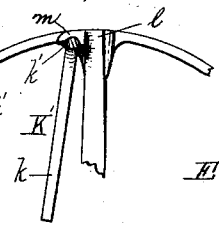

Fig. 2.

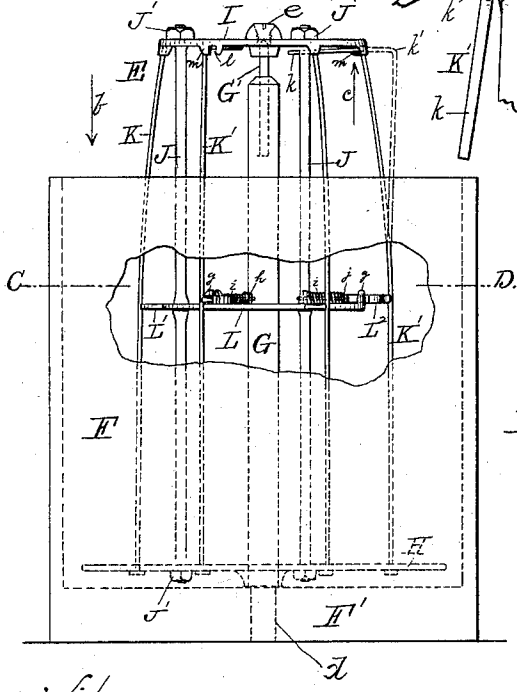

Fig. 4.

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UNITED STATES PATENT OFFICE.

EDWARD L. WARREN, OF WORCESTER, MASSACHUSETTS.

WIRE REEL AND TUB.

SPECIFICATION forming part of Letters Patent No. 320,421, dated June 16, 1885.

Application filed December 3, 1884. (No model.)

To all whom it may concern:

Be it known that I, EDWARD L. WARREN, of Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Combined Wire Reel and Tub; 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 top or plan view of my aforesaid combined wire reel and tub. Fig. 2 represents a side view of the parts shown in Fig. 1 looking in the direction of arrow *a*, same figure, with a portion of the side of the tub broken away to more clearly illustrate parts of the reel covered by the same in said side view. Fig. 3 represents a horizontal section through the reel and tub taken on line C D, Fig. 2, looking in the direction indicated by arrow *b*, same figure. Fig. 4 represents a central vertical section through the reel and tub taken on line A B, Fig. 1, looking in the direction of arrow *a*, same figure; and Fig. 5 represents upon an enlarged scale an under side view of a portion of the reel, hereinafter more fully described.

My invention relates to combined wire reels and tubs employed, respectively, for holding the coils of wire and liquid used in the ordinary process of drawing, or otherwise reducing said wire to smaller sizes, and consists in the novel construction and arrangement of said reel and tub, hereinafter more fully set forth.

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

In the drawings, E represents the wire reel, and F the tub or jar in which said reel is contained and arranged to revolve horizontally, as hereinafter described. I make the tub or jar F of glazed earthenware or similar material, cylindrical in shape, and with a thick bottom, F′, provided at the center with a vertical opening, *d*, in which the lower end of the upright pivotal standard G is inserted and held. Said standard being made of wood and driven tight into the opening in the bottom F′, is held in a very firm and rigid manner, being facilitated by the swelling of the wood, caused by immersion in the liquid contained in the tub or jar F. The standard G is provided at its upper end with a metal rod or spindle, G′, having a rounded or pointed end, which acts as a pivot for the reel to turn upon. If preferred, the standard G may be made entirely of metal, provided with a threaded lower end, and screwed into a threaded opening in the bottom F′, in lieu of the construction before described. The reel E is made with a bottom frame, H, provided with a central opening, H′, through which the standard G passes, and with a top frame, I, provided with a central socket upon its under side made to fit the upper pointed end of said standard, and also with a central pivot screw, *e*, made of hardened steel, and recessed at its lower end to fit the end of the pivot-spindle G′. Said frames H and I are fastened to the ends of rods J, by means of nuts J′, the ends of said rods being provided with threads *f* for the purpose, and the frame parts with openings through which to pass said threaded ends. Three or more of said connecting-rods may be used, as desired.

In addition to the connecting rods J, the reel is provided with an outer row of rods K K′, which act as guards to hold the coils of wire in position upon the reel. In this instance I have represented six of said guard-rods, one half being made stationary and the other half adjustable in the manner and for the purpose hereinafter described. If preferred, however, a greater or less number than the above may be employed. The stationary rods K are held in sockets formed in the top and bottom frames, I H, and may be removed from the reel for renewal when worn out by usage by simply unturning the holding-nuts of one of the frames, so as to allow the ends of the rods being removed from their respective sockets in said frames. Both the stationary and adjustable rods K K′ are braced outward at or about the center of the same by means of a horizontal frame part, L, having stationary arms L′ for bracing the stationary rods K, and adjustable sliding parts L^2 for bracing the adjustable rods K′. Said sliding braces L^2 are fitted to slide forward and back in guides *g h*, formed on the frame part L, and are forced outward by means of spiral springs *i*, fitted over said sliding parts between their shoulders *j* and the guides *h*,

formed on the frame part. The outer ends of all the braces are recessed or grooved to fit the rods, thus preventing said rods slipping off of the braces when in use. The frame L is supported in slots formed in rods J. The upper end of each adjustable rod K′ is provided with an arm, *k*, extending toward the center of the reel, which is made by making said rod longer than the stationary ones and bending the end at right angles to the main rod, as shown in the drawings. A guide, *l*, and stop *m* are also formed on the under side of the top frame, I, at its outer edge, for each of the adjustable rods K′, said rods being held, when in a contracted position as shown by full lines in the drawings, against their respective stops *m*, and when expanded or sprung out, as shown by dotted lines, with the bent portion *k* in the guide *l*. An under side view of said guide and stop is fully shown in Fig. 5 of the drawings with the rod in position against the stop, being the position occupied by said adjustable rods preparatory to placing the coils of wire over the reel. The top of the reel being made a little smaller in diameter than from its center down, the aforesaid operation may be readily performed, while at the same time they are held in position and prevented from snarling after having been placed on the reel by the outward pressure produced by the spiral springs *i* against the rods when detached at their upper ends, said expansion producing the proper friction upon the coils of wire to prevent their turning independent of the reel, and thus preventing their snarling when drawn forward and uncoiled by the wire drawing or reducing apparatus in the usual way.

In filling the reel the attendant first presses back the upper ends of the adjustable arms through the guides *l*, and fits the rounded ends *k′* against the stops *m*, before described. He next places the required number of wire coils over the reel and connects their free ends with the drawing or other reducing apparatus, and finally releases the upper ends of the rods, when they are sprung out and hold the coils ready for operation, the tub or jar in which the reel is placed being previously filled with the usual liquid employed for facilitating the reducing operation.

Prior to my invention it has been customary to make the tubs for holding the aforesaid liquid of wood; but for various well-known reasons they do not prove entirely satisfactory, one of the principal objections being that if allowed to become dry when not in use they fall apart, or the joints open so as to unfit them for further use. Then, again, they are not durable, owing to the chemicals used, and require to be often renewed, which is a source of constant and unnecessary expense.

By the use of my improved tubs, which have now been in constant use for the past year, the most satisfactory results are obtained, they being impervious to the action of the liquids employed and perfectly secure from leakage.

Having described my combined wire reel and tub or jar, what I claim therein as new and of my invention, and desire to secure by Letters Patent, is—

1. The combination of the bottom frame part, H, provided with a central vertical opening, and with sockets to receive the lower ends of guard rods K K′, and frame part I, provided with sockets, guides, stops, and a central pivot screw for the purpose described, with the holding-rods J, their nuts J′, standard G, guard-rods K K′, central frame part, L, provided with stationary and sliding braces, and the tub or jar F, constructed and arranged substantially as shown and described, for the purpose stated.

2. The combination of the stationary and adjustable guard rods K K′ with the bottom frame part, H, provided with a central vertical opening, and with sockets to receive the lower ends of said guard rods K K′, frame part L, provided with stationary and sliding braces, top frame, I, provided with sockets, guides, and stops for the rods K K′, frame-holding rods J, and their nuts J′, substantially as and for the purposes set forth.

3. The combination of the stationary and adjustable guard rods K K′ with the frame part L, provided with stationary braces L′, sliding braces L^2, guides *g h*, and spiral springs *i*, substantially as and for the purpose set forth.

4. In a wire-reel, the combination of the top frame, I, provided with guides *l* and stops *m*, with the adjustable guard rods K′, substantially as and for the purpose stated.

5. The combination of the tub or jar F, made of earthenware or similar material, with the standard G and wire-reel E, substantially as and for the purpose set forth.

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