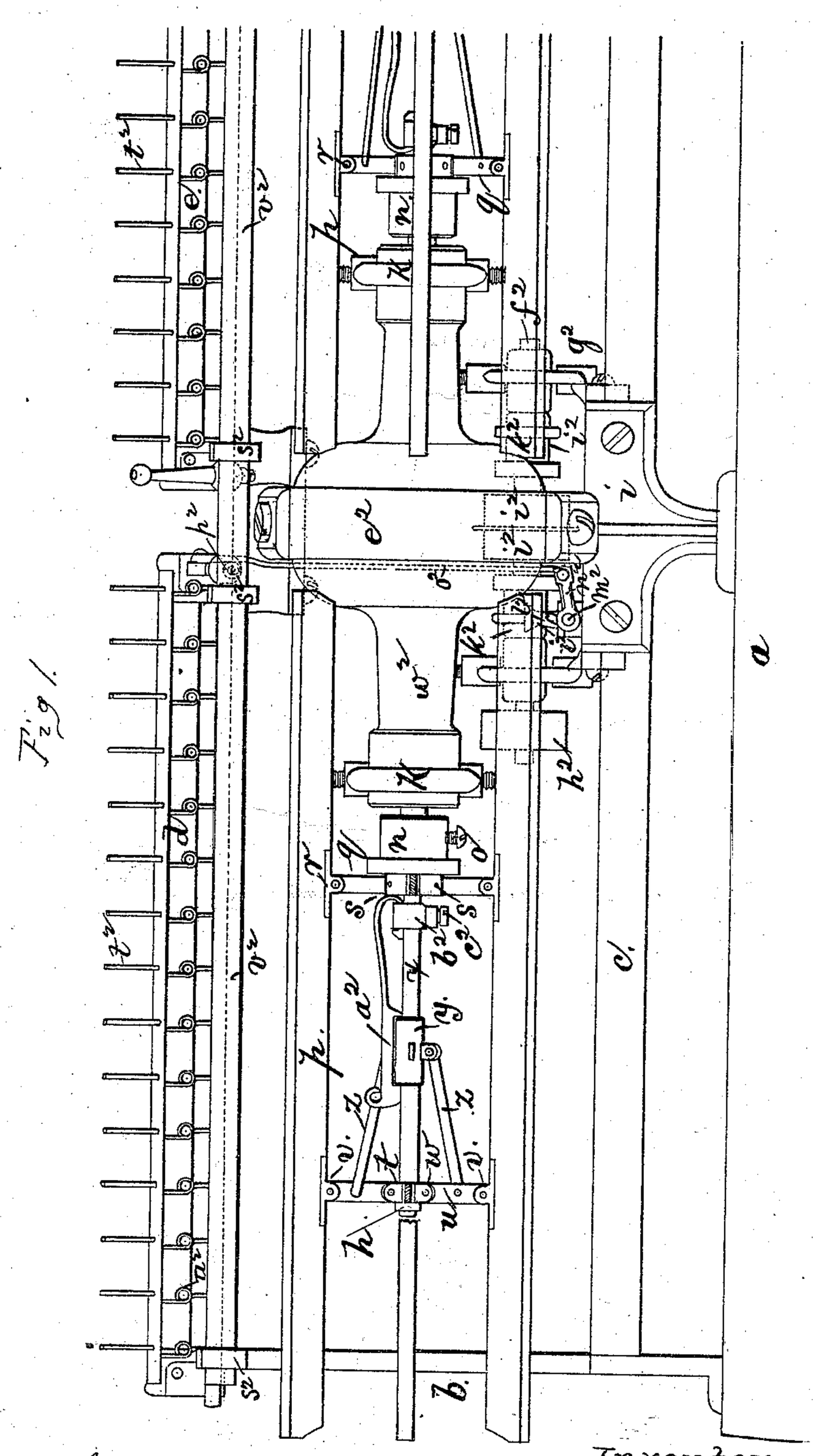
2 Sheets--Sheet 1.

W. H. LEACH.

Machines for Reeling Yarn.

No. 152,658. Patented June 30, 1874.



Witnesses.
Geo. T. Smallwood Jr.
R. N. Dyer.

Inventor
William H. Leach.
per John J. Halsted
atty.

2 Sheets--Sheet 2.

W. H. LEACH.

Machines for Reeling Yarn.

No. 152,658. Patented June 30, 1874.

Fig. 2.

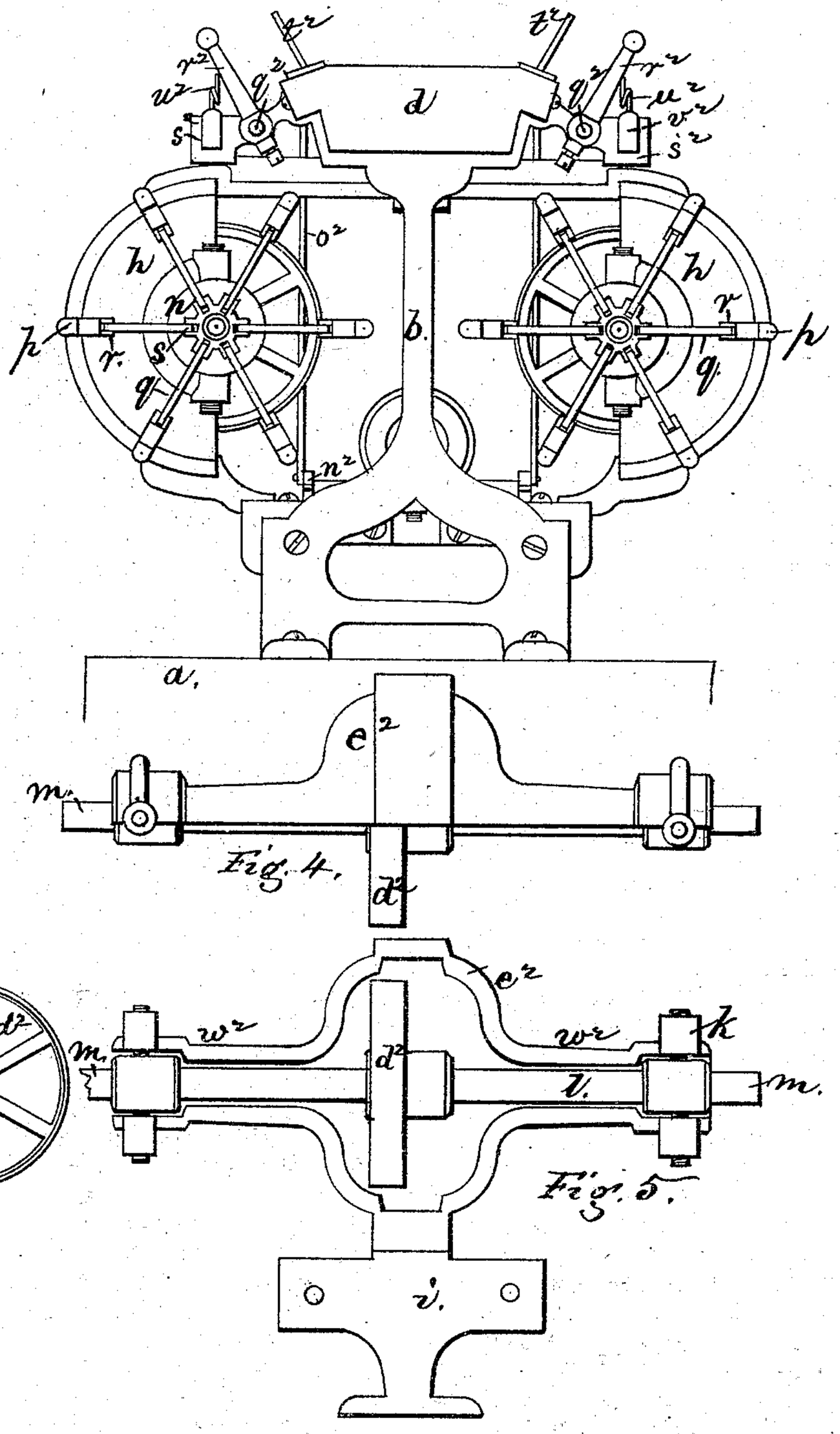


Fig. 4.

Fig. 3.

Fig. 5.

Witnesses.
Geo. T. Smallwood Jr.
R. N. Dyer.

Inventor
William H. Leach.
per John J. Halsted
Atty.

UNITED STATES PATENT OFFICE.

WILLIAM H. LEACH, OF UXBRIDGE, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR REELING YARN.

Specification forming part of Letters Patent No. **152,658**, dated June 30, 1874; application filed May 28, 1874.

To all whom it may concern:

Be it known that I, WILLIAM H. LEACH, of Uxbridge, in the county of Worcester and State of Massachusetts, have invented an Improved Yarn-Reel; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

The invention relates to the construction and arrangement of the parts of a yarn-reel or yarn-reel frame, and consists in details to be hereafter described.

The drawing represents a yarn-reel or reel-frame embodying my improvements.

Figure 1 represents the machine in side elevation. Fig. 2 is an end and sectional elevation thereof. Fig. 3 is an end view, Fig. 4 a top view, and Fig. 5 an inner side view, of one of the housing-stands.

a denotes the base or bed, for supporting the frame-work, which is shown as designed for four reels. *b b* denote two uprights at the opposite ends of the frame; *c c*, longitudinal beams connecting the uprights *d*; *e*, waste-boxes at the top of the frame. *h h h h* denote the four reels, two at each side of the frame. At the center of the frame, between the respective reels at each side thereof, is a housing-stand, *i*, at the opposite ends of which are adjustable bearings *k* that support a shaft, *l*, the opposite ends of each shaft projecting beyond the bearings, as seen at *m*, and to each end *m* is attached one of the yarn-reels *h*, each reel having a hub, *n*, provided with a screw, *o*, by which it is clamped to the shaft end. Each reel is made with a suitable number of bars, *p*, which bars are connected to the hub *n* by spokes *q*, (jointed to the bars, as seen at *r*, and to the hub, as seen at *s*,) and to a hub, *t*, (fixed upon the spindle) by spokes *u*, (jointed to the bars, as seen at *v*, and to the hub, as seen at *w*,) the hubs *n t* being connected by a spindle, *x*. Between the hubs *n t* of each reel is a runner, *y*, connected to the spokes *u* by links *z*, jointed to the spokes and runner, and by sliding this runner in one or the opposite direction the bars may be forced outward or drawn inward to expand or contract the reel. The bars are held in normal position by a spring latch or clasp, a^2, extending from an adjustable slide, b^2, placed on the spindle and held by a screw, c^2, the clasp locking the runner in position, and the latter being free to slide by drawing back the clasp. The hubs are fixed to the spindle, and by loosening the set-screw c^2, and moving the latch, the position at which the runner will be locked by the spring clasp or latch may be varied to increase or contract the size of the reel, as may be desirable.

As the reel is supported upon the end of the shaft, it will be obvious that the yarn may be readily removed from the reel without disturbing the shaft or removing the reel. This arrangement permits the parts to be greatly compacted, lessens the care necessary to attend the reel, and saves the employment of men to remove the shafts and reels.

Each shaft is shown as carrying at its center a pulley, d^2, (protected by the housing-cap e^2,) and between these shafts is the driving-shaft f^2, mounted in bearings g^2, carrying the driving-pulley h^2 and two loose pulleys, i^2, by which the pulleys d^2 are connected to the driving-shaft, two sliding clutches, k^2, splined to the shaft, serving to effect the connection of the loose pulleys to the driving-shaft.

Each clutch is operated by a vertical arm, l^2, of a clutch-shaft, m^2, having a horizontal arm, n^2, connected by a link, o^2, to a horizontal arm, p^2, extending from a long horizontal shipper-rod, q^2, said rod having arms r^2, by which the clutches may be operated from either end, or at the center of the frame. This rod turns in bearings in brackets s^2, extending from the waste-boxes, and is placed between the spool-pins t^2 rising from the box, and the yarn-guides u^2 fixed to rails v^2 that rest in slots at the ends of the brackets.

By my construction of the frame the shipper-rod is enabled to occupy this accessible position, and all the parts are brought within the ready reach of the operative.

Each housing-stand is supported upon the adjacent beam *c*, and, if necessary, upon the bed *a*, and has the cap or hood e^2 for covering the outer side of the adjacent wheel, and two neck-pieces, w^2, that cover the outer sides of the shaft, and serve to support at their outer ends the two boxes, in which are journaled the opposite ends of the shaft.

I have described each shaft as bearing two reels; but it may, of course, carry only one.

I claim—

1. The two shafts *l l* and the driving-shaft f^2 placed centrally between them, and carrying the driving-pulley h^2, sliding clutches k^2, and loose pulleys i^2, substantially as shown and described.

2. The clutch-shaft m^2, arms n^2, link o^2, rod q^2, and arms r^2, combined and arranged with the arms l^2, pulleys i^2, driving-pulley h^2, and the shafts f^2 and *l*, substantially as shown and described.

3. The housing-stand *i*, having the cap e^2 and the necks w^2 that support the opposite boxes *d e*, substantially as shown and described.

4. A frame, having the four reels arranged and driven from the center-shaft f^2, substantially as shown and described.

Witnesses: WM. H. LEACH.

LAWSON A. SEAGRAVE,

BRADFORD STETSON.