(No Model.)

C. H. MORGAN.

WIRE REELING MACHINE.

No. 543,884. Patented Aug. 6, 1895.

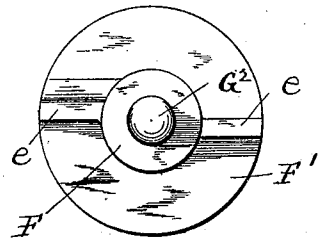

Fig. 2.

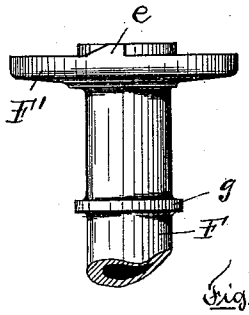

Fig. 3.

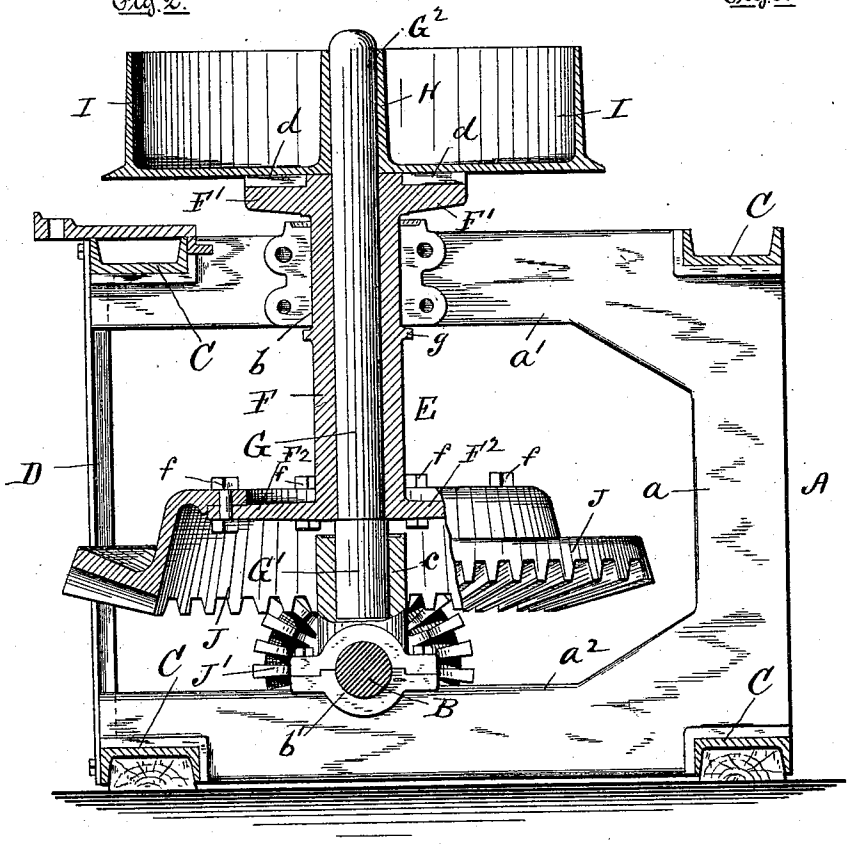

Fig. 1.

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Inventor/
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By his Attorney.
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UNITED STATES PATENT OFFICE.

CHARLES H. MORGAN, OF WORCESTER, MASSACHUSETTS.

WIRE-REELING MACHINE.

SPECIFICATION forming part of Letters Patent No. 543,884, dated August 6, 1895.

Application filed July 9, 1890. Serial No. 358,142. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. MORGAN, a citizen of the United States, and a resident of Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Wire-Reeling Mechanism, of which the following is a specification, reference being had to the accompanying drawings, forming a part of the same, and representing such portions of a wire-drawing apparatus as will fully illustrate my present invention.

Figure 1 represents a transverse sectional view of the framework upon which the operative mechanism for reeling the wire is supported and showing such reeling mechanism in sectional view. Fig. 2 represents a top view of the flanged end of the vertical spindle upon which the reel is supported, and Fig. 3 is a side elevation of the upper end of the cast shell forming a part of the reel-supporting spindle.

Similar letters refer to similar parts in the different figures.

My invention relates to the mechanism by which a rotary motion is imparted to a wire-drawing block or drum and also to the framework by which the same is supported; and it has for its object to simplify and strengthen the operative mechanism through which rotary motion is transmitted to the drawing-block and to render such mechanism more accessible.

A denotes one of a series of upright supporting-frames, consisting of the upright portion *a* and the upper and lower horizontal portions *a'* and a^2, all cast in a single piece and together forming the three sides of a rectangular supporting-frame, provided in the upper horizontal portion with the vertical journal-box *b*, one half of which only is represented in the drawings, which is cast integrally with the frame A. The lower horizontal portion a^2 supports the horizontal journal-box *b'*, one half of which is cast integral with the frame A. A series of these upright frames, only one of which is shown in the drawings, are placed in alignment with the horizontal driving-shaft B, and they are united by the longitudinal tie-bars C C C C, and the free ends of the horizontal portions of each of the frames A are united by the vertical tie-bar D, which serves to maintain the horizontal portions *a'* and a^2 in fixed relations. The tie-bar D is readily detached from the cast frame A, forming an open space through which the horizontal shaft B can be removed and the operative portion of the machine rendered accessible.

B denotes a horizontal driving-shaft journaled in boxes *b'* supported by the lower horizontal portion of the frame A, and the upper or cap portion of the box *b'* is provided with a step-bearing *c*, which supports the vertical spindle E, held in the box *b* and projecting above the framework A. The spindle E consists of an outer shell F, provided with the radial flanges F' and F^2 at its upper and lower ends, and an internal core G with its ends projecting above and below the shell F, the lower projecting end G' entering the step-bearing *c* and the upper projecting end G^2 entering the concentric sleeve H in the drawing block or reel I.

The drawing-block I is held concentrically with the vertical spindle E by the sleeve H and the projecting end G^2 of the core G and it is supported vertically by the upper end of the outer shell or sleeve F. The under side of the drawing-block is provided with radial ribs *d d*, and the upper surface of the flange F' is provided with the corresponding radial ribs *e e*, which engage the ribs *d d* as the vertical spindle E is rotated, thereby communicating rotary motion to the block I. To the lower flange F^2, I attach the bevel-gear J, which is engaged and driven by the beveled pinion J' upon the horizontal driving-shaft B. It has been customary in machines of this class to attach the clutching device by which the drawing-block was engaged and also the bevel-gear J directly to a vertical shaft G, which was supported in a step-bearing *c* and journaled in a vertical bearing *b*, causing all the torsional strain to be received by the vertical shaft G.

By the construction illustrated in the accompanying drawings and embodying my invention the bevel-gear J is attached by a series of bolts *f f* to the outer edge of the radial flange F^2, thereby reducing the strain upon the connecting-bolts by increasing the radial distance of the bolts from the axis of the vertical shaft.

The clutching device and the flange F^2 are connected by and cast integral with the shell F, which is therefore made to receive the torsional strain incident to the rotation of the block I in the operation of drawing the wire through the reducing-dies.

The shell F is journaled in the vertical bearing, and the core G serves to sustain the weight of the shell and its connected parts, consisting of the bevel-gear J and the clutching device by which the drawing-block is rotated.

An annular rib *g* upon the shell F prevents the spindle from being lifted and raising the bevel-gear J out of engagement with the driving-pinion J'. The shell F and core or central portion G are conveniently united by casting the shell around a core of iron or steel held in the mold in proper position, but both can be cast in a single piece.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination with a drawing block or wire reel and a horizontal driving shaft, of an intermediate mechanism consisting of a cast metal shell journaled in a vertical bearing and rotated by said driving shaft, an iron or steel shaft inclosed in and united to said shell and forming a core, and a clutching device cast integrally with said shell and arranged to engage said drawing block, or wire reel, substantially as described.

2. The combination with a driving shaft and a drawing block, or wire reel, provided with a concentric sleeve, of the intermediate mechanism, consisting of a cast metal shell journaled in a bearing, a clutching device formed integrally with said shell and arranged to engage said drawing block, or wire reel, and an iron, or steel, core, inclosed in and united to said shell and projecting from the upper end of the shell to enter the concentric sleeve in said drawing block, or wire reel, substantially as described.

3. The combination with a drawing block or wire reel, and a driving shaft of an intermediate shaft consisting of a cast metal shell driven by said driving shaft, a clutching device formed integrally with said cast metal shell and arranged to engage said drawing block, or wire reel, whereby the torsional strain is received by said shell and an iron or steel core inclosed in and united to said shell and projecting from the lower end thereof, and a step bearing supporting the projecting end of said core, substantially as described.

4. The combination with a drawing block, or wire reel, of a rotating driving shaft, a beveled pinion carried on said shaft, an intermediate spindle consisting of a cast metal shell, an iron or steel core inclosed in and united to said shell, a clutching device arranged to engage said drawing block or wire reel and cast integrally with said shell, a radial flange cast integrally with said shell, and a beveled gear attached to said flange and engaging said beveled pinion on the driving shaft, substantially as described.

Dated at Worcester, in the county of Worcester and State of Massachusetts, this 7th day of July, 1890.

CHAS. H. MORGAN.

Witnesses:
RUFUS B. FOWLER,
VICTOR E. EDWARDS.