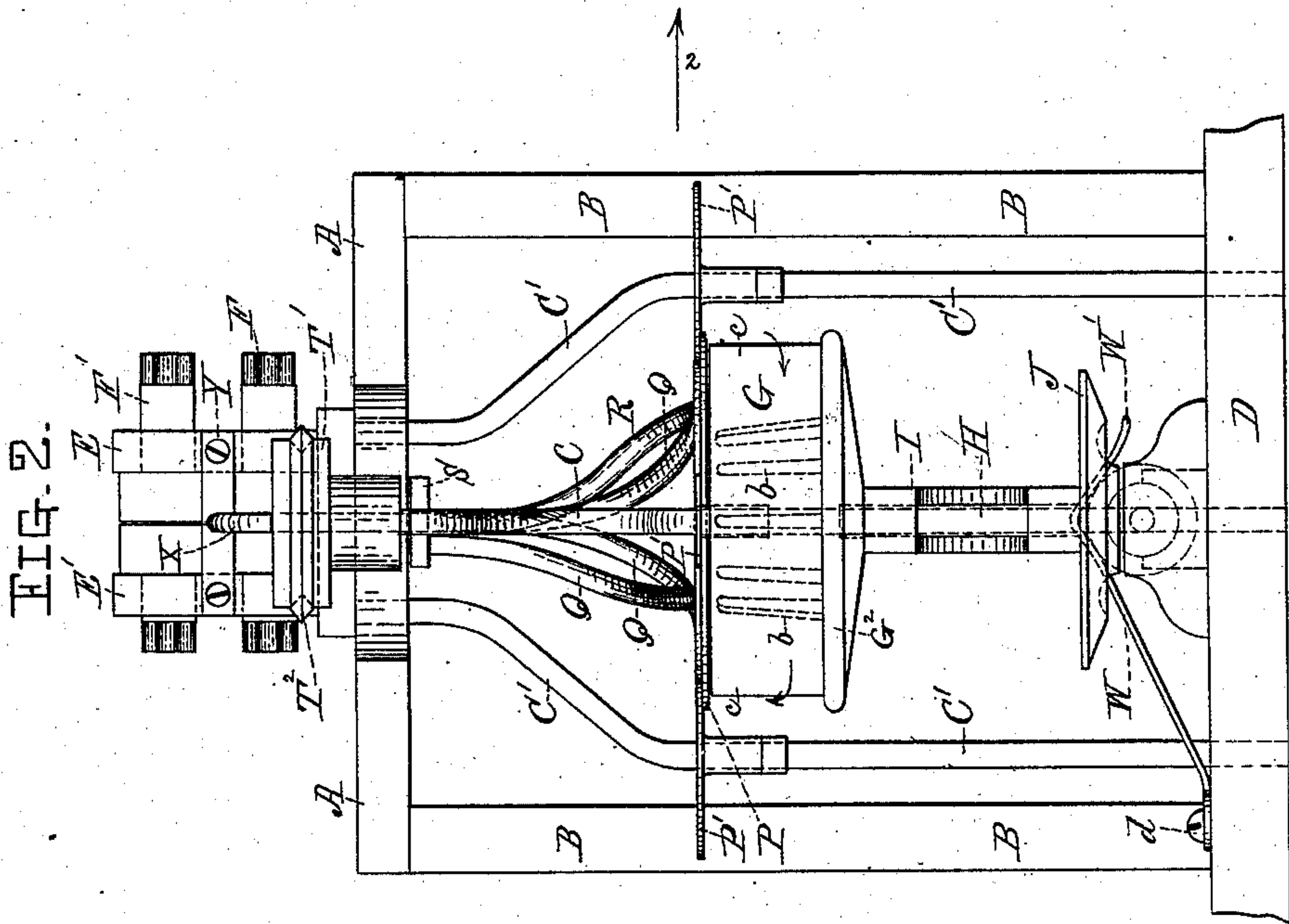
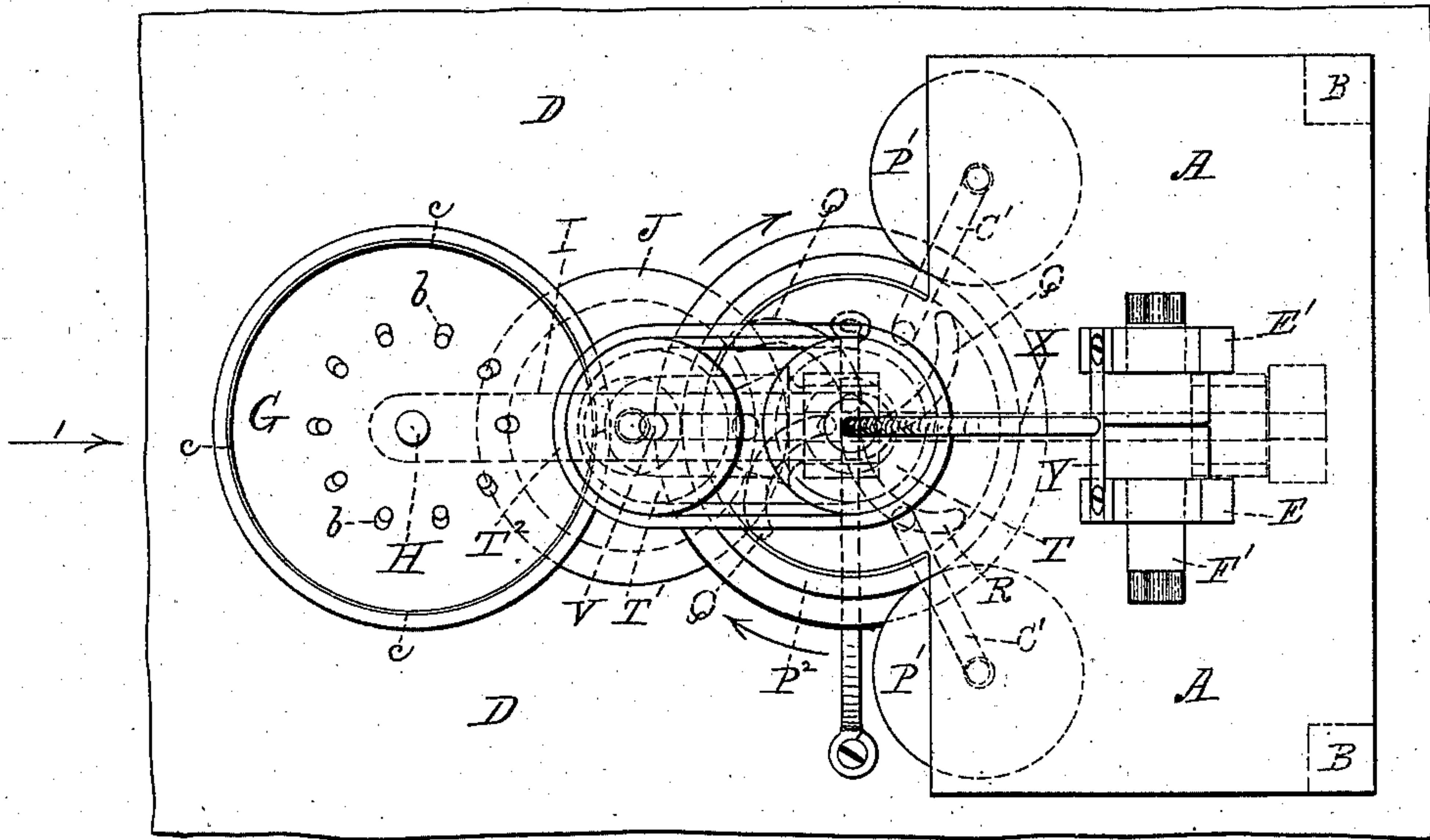


C. H. MORGAN & F. H. DANIELS.
Reel for Coiling Wire-Rods.

No. 224,942.

Patented Feb. 24, 1880.

FIG. 1.



Witnesses,

Inventors,

Thos. C. Dodge

Edwin C. Moore

C. H. Morgan
Fred H. Daniels.

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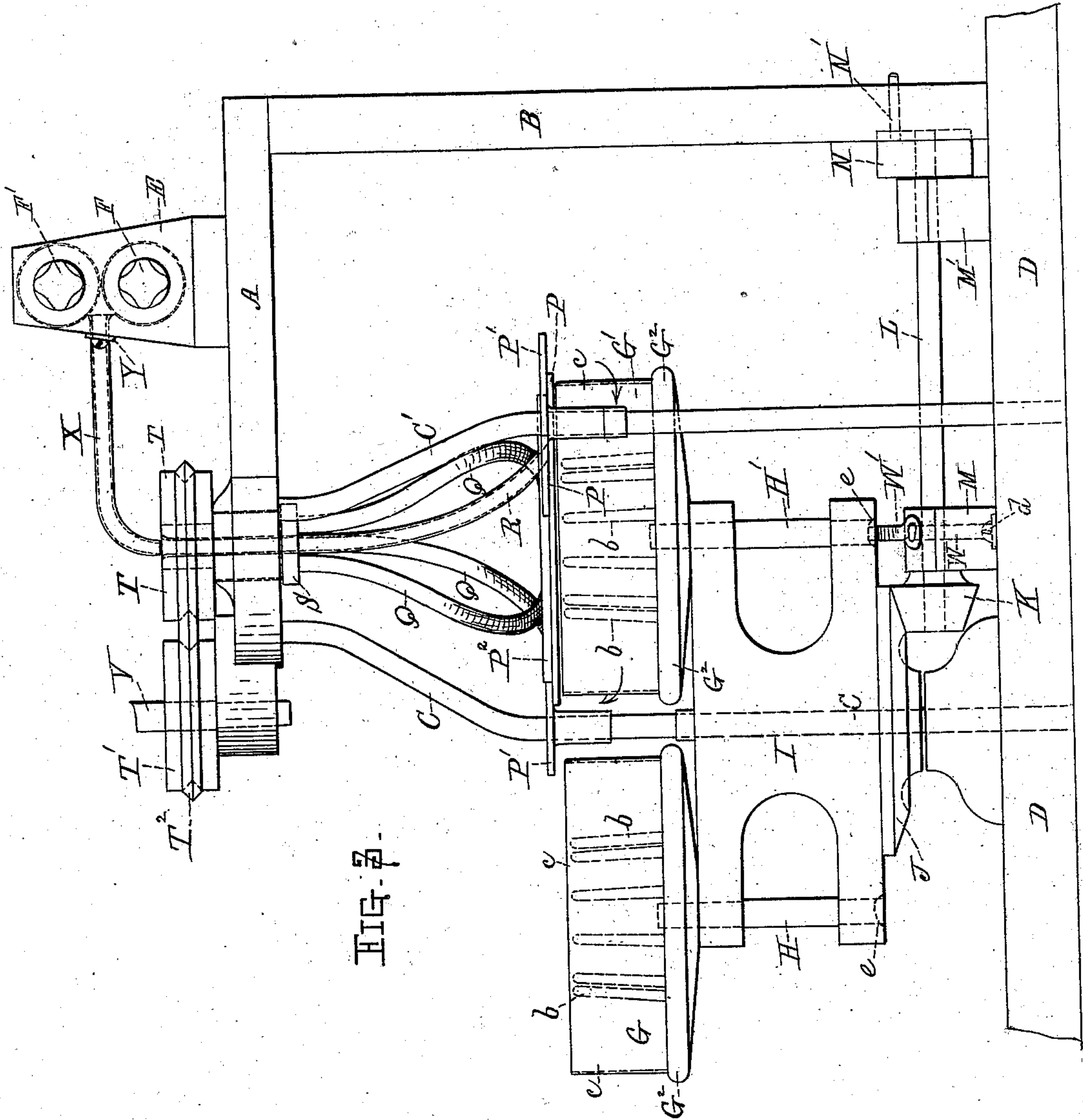


FIG. 2.

Witnesses,

Thos. H. Dodge
Edwin C. Moore

Inventors,

Chas. H. Morgan
Fred H. Daniels.

UNITED STATES PATENT OFFICE.

CHARLES H. MORGAN AND FRED H. DANIELS, OF WORCESTER, MASS.;
SAID DANIELS ASSIGNOR TO WASHBURN & MOEN MANUFACTURING
COMPANY, OF SAME PLACE.

REEL FOR COILING WIRE RODS.

SPECIFICATION forming part of Letters Patent No. 224,942, dated February 24, 1880.

Application filed February 20, 1879.

To all whom it may concern:

Be it known that we, CHAS. H. MORGAN and FRED H. DANIELS, both of the city and county of Worcester, and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Reels for Automatically Coiling Wire Rods; and we 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 a wire-rod-coiling machine embracing our said improvements. Fig. 2 represents a rear or end view of the machine, looking in the direction indicated by arrow 1, Fig. 1; and Fig. 3 represents, upon an enlarged scale, a side view of the same, looking in the direction indicated by arrow 2, Fig. 1.

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

In the drawings, A represents a section of flooring, which is supported, by means of standards or posts B and C C', upon a foundation or bed, D. Upon flooring A are arranged and secured housings E E', upon which, in turn, are supported finishing-rolls F F', arranged to turn in the same.

The reels G G' of the machine are secured to the upper ends of fixed vertical shafts H H', which are secured in the slotted ends of a rotatable supporting-frame, I, arranged to turn upon standard or support C.

Upon the under side of rotatable frame I is, in this instance, formed or secured a bevel friction wheel or pulley, J, which rests upon and is operated by a smaller bevel friction-pulley, K, secured upon the end of a horizontal shaft, L, which is arranged to turn in bearings M M', secured to foundation D, being, in turn, driven by means of driving wheel or pulley N, secured upon its outer end, which may be connected with any suitable and convenient driving-power, or may be operated by a hand-crank, N', or in any other suitable manner.

In lieu of friction-wheels J and K, bevel-gears may be employed to operate reel-frame I.

Reels G G' are provided with ordinary coil-holding arms b, and also with tubular flanges c, which extend up from the base G² of the reel a little above the ends of the reel-arms, as fully indicated in the drawings, the purpose of the tubular flanges c being to prevent the rods from leaving or escaping from the action of the reels, and also to protect the finished rod from the cooling action of the atmosphere, in which case less annealing of the rod is required.

To further guard against the rods becoming suddenly cooled off, a plate or cover, P, is arranged over the place where the rods are coiled upon the reels, so that it will just clear the tops of the sides c of said reels. Plate P is supported and arranged to turn in said position by being secured to the lower ends of radial serpentine-shaped arms Q and R, which, in turn, are secured to the hub S of a driving-pulley, T, arranged to turn in a suitable bearing supported by standards C C'.

Cover P is prevented from wobbling about by means of friction-wheels P', which bear and turn against a rim, P², formed upon the top of said cover near its outer edge. Wheels P' are fitted to turn loosely upon standards C C'.

We are aware that said Charles H. Morgan has a pending application in which he claims a reel having two sets of arms, and we jointly do not claim said invention.

Arm R is made hollow, as represented by dotted lines, Fig. 3, and thereby serves the purpose not only of assisting to support cover P, but also, by being inserted in the center of the hub-bearing piece S of pulley T, as a guide-pipe for conducting the rod as it passes forward to the reel, as hereinafter described.

Pulley T may be driven to turn guide-pipe R and cover P by means of a belt, T², passed around a pulley, T', secured upon a driving-shaft, V, as represented in the drawings; or, if preferred, bevel-gears or any other suitable and convenient method may be employed.

Rotatable frame I is held in position, after one of the reels has been adjusted so as to come under the center of cover P, by means of a flat spring, W, (secured at d to foundation D,) which bears upon the under side of

said frame, the same being grooved out, as represented by dotted lines *e e*, Fig. 3, so that it will not easily slip off of the spring.

The operation of coiling a rod upon one of the reels of the machine may be briefly summed up thus: As the finished wire rod passes forward from between the last set or finishing-rolls *F F'* of a continuous or other rod-rolling mill, it first enters and passes through a horizontal guide-pipe, *X*, (bent down at its outer end, as represented in Fig. 3, and which is secured to a plate, *Y*, which, in turn, is secured to housings *E E'*), thence perpendicularly into and through serpentine-shaped guide-pipe *R*, which is turned or rotated with cover *P* in the direction represented by arrows in the drawings. The rod, as it leaves the end of the serpentine guide-pipe *R*, will be evenly deposited or laid around the arms *b* of the reel in consequence of the rotary motion of cover *P* and guide-pipe *R*. The coil having been completed, the attendant then rotates or causes to be rotated reel-frame *I*, so as to bring the empty reel under cover *P* and guide-pipe *R*, preparatory to coiling the next rod.

If preferred, instead of coiling the rods around arms *b* on reels *G G'*, the same may be deposited in a deep vessel, resembling an annealing-pot, around a central core or blade arranged in the same, which may be removed when filled, with the coils upon the same, by means of a crane, or in any other suitable and convenient manner.

Those skilled in the art to which our inven-

tion belongs will readily perceive the great practical advantages resulting from arranging and constructing a wire-rod-coiling machine as herein shown and described. It not only performs its office satisfactorily, but at the same time is simple in construction, and therefore not liable to get out of repair, while another great advantage, as before stated, is that, the rods being kept well covered and inclosed during the operation of coiling, they are not exposed to cold currents of air, thus requiring less annealing, consequently saving much time and expense in the manufacture of iron and steel rods.

Having described our improvements in reels for automatically coiling wire rods, what we claim therein as new and of our invention, and desire to secure by Letters Patent, is--

1. The combination, with the finishing-rolls of a wire-rod-rolling mill, of a guiding pipe or tube, *X*, and rotating coiling pipe or tube *R*, substantially as and for the purposes set forth.

2. The combination, with the reels *G G'*, arranged upon a rotatable frame in a wire-rolling mill, of the rotatable cover *P*, guide-tube *R*, and the mechanism for causing the cover and tube to rotate, substantially as and for the purposes set forth.

CHAS. H. MORGAN.
FRED H. DANIELS.

Witnesses:

THOS. H. DODGE,
EDWIN E. MOORE.