(No Model.) 3 Sheets—Sheet 1.

W. H. SAWYER.

MACHINE FOR DRESSING COVERED ELECTRICAL CONDUCTORS.

No. 380,053. Patented Mar. 27, 1888.

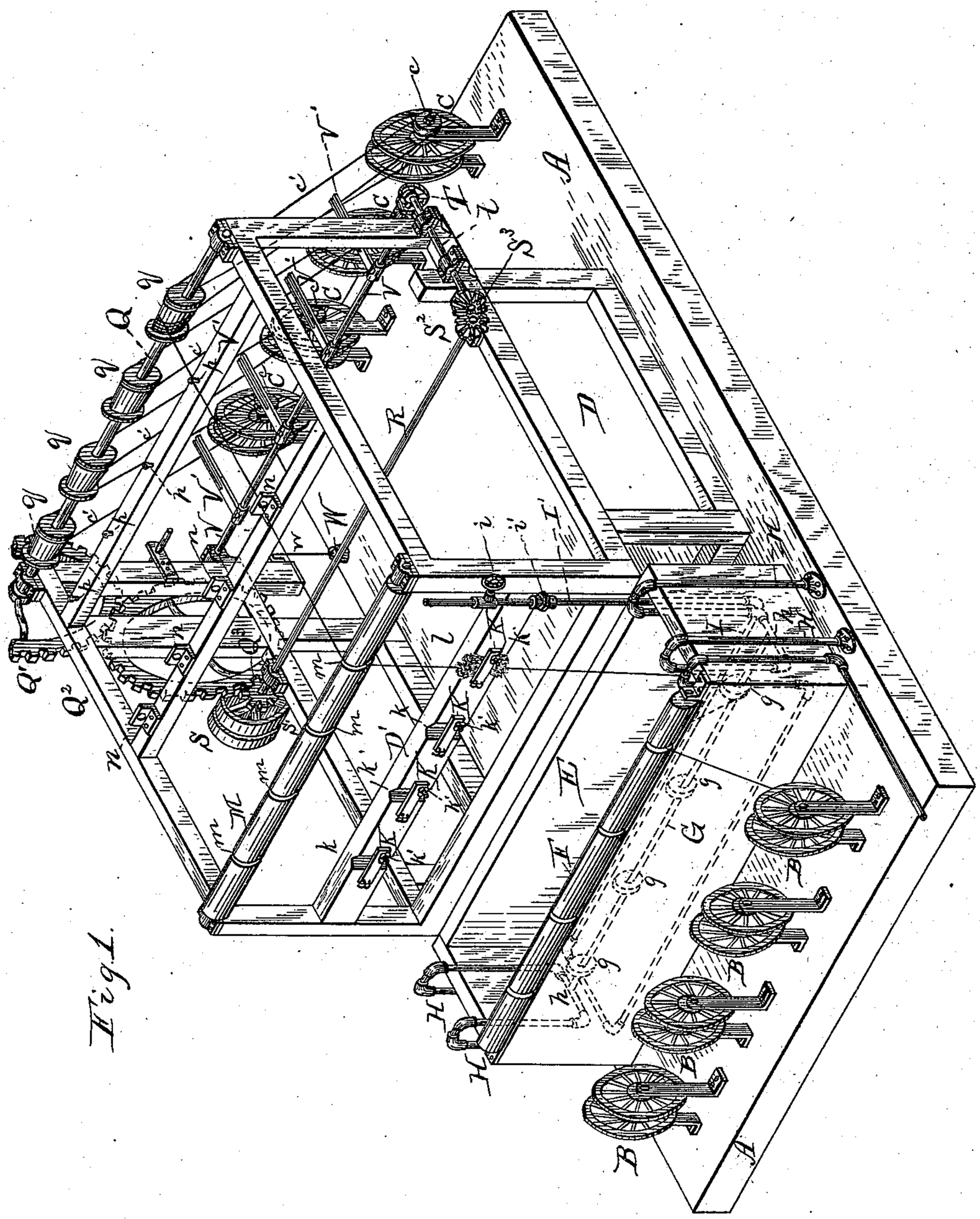

Fig. 1.

WITNESSES

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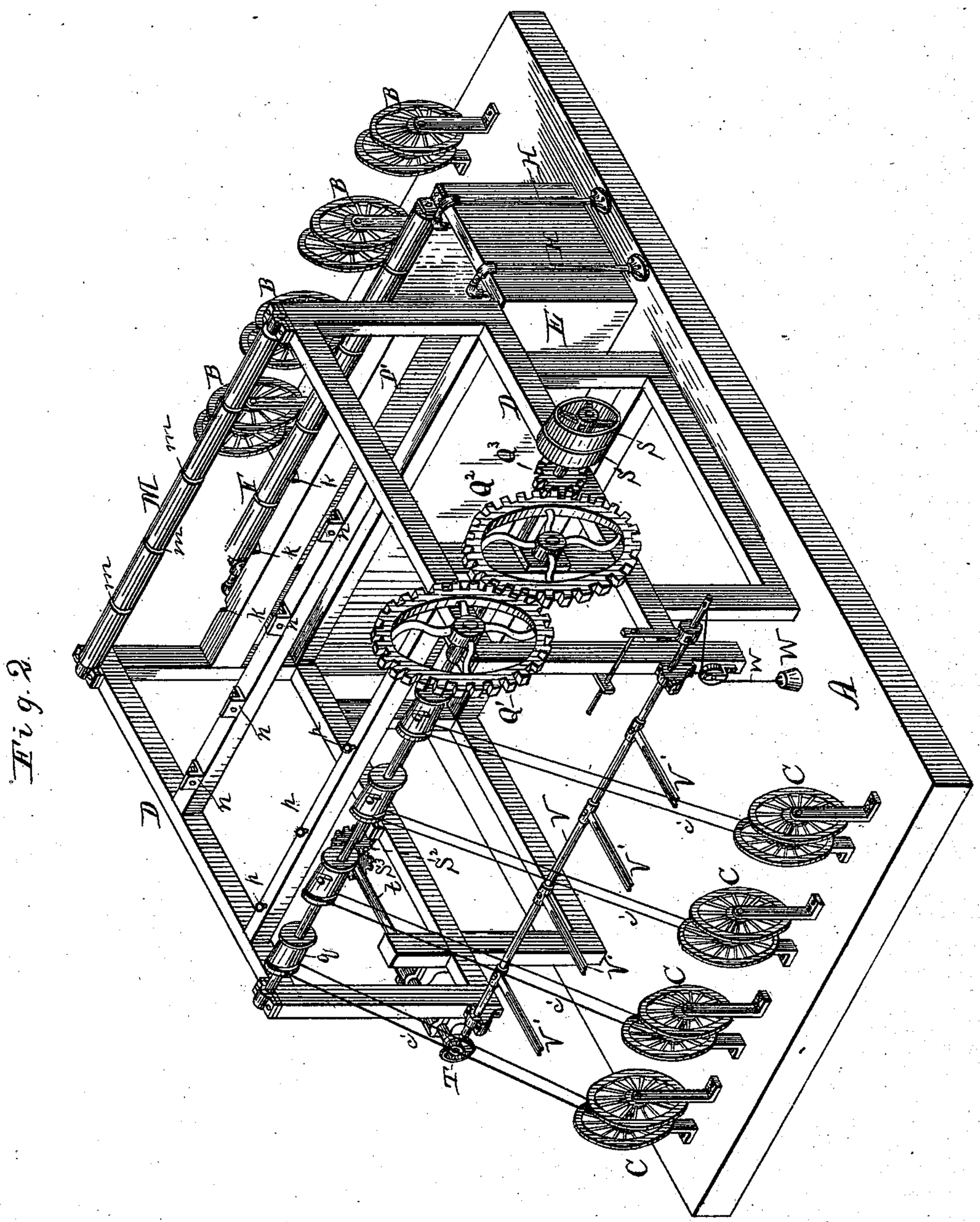

Fig. 2.

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Fig. 3.

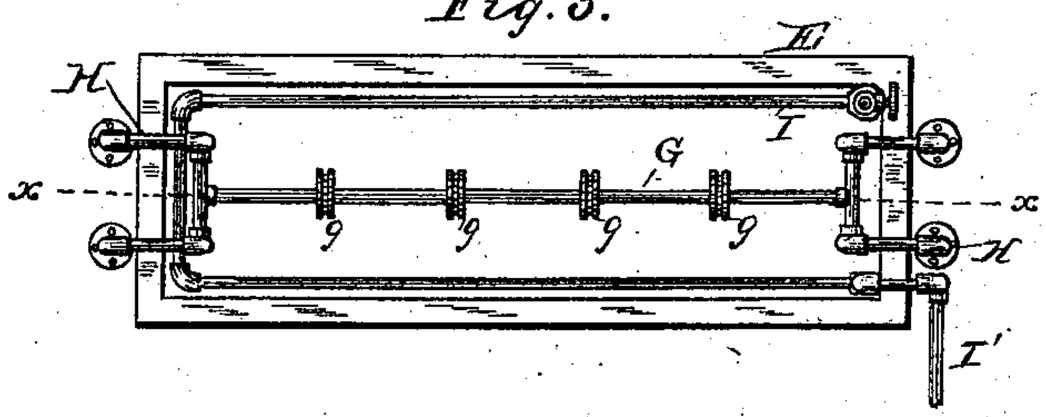

Fig. 4.

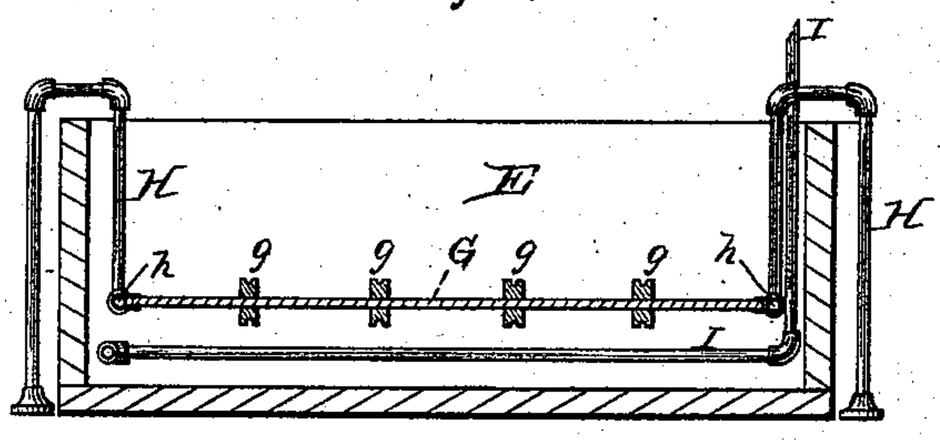

Fig. 5.

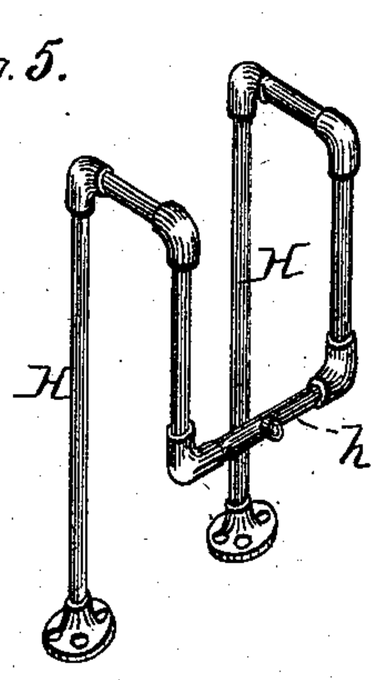

Fig. 6.

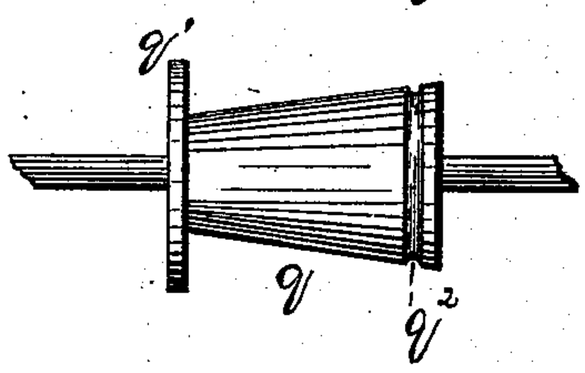

Fig. 7.

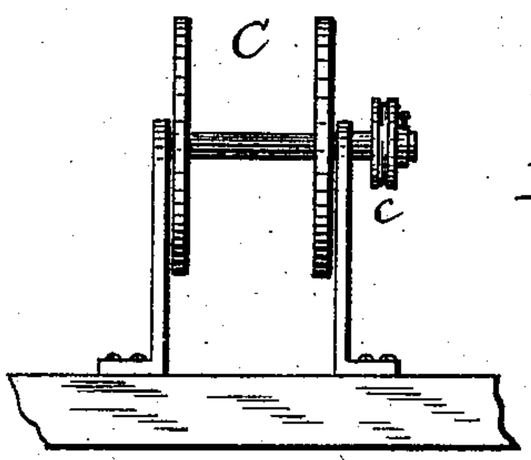

Fig. 8.

WITNESSES.

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UNITED STATES PATENT OFFICE.

WILLIAM H. SAWYER, OF PROVIDENCE, RHODE ISLAND.

MACHINE FOR DRESSING COVERED ELECTRICAL CONDUCTORS.

SPECIFICATION forming part of Letters Patent No. 380,053, dated March 27, 1888.

Application filed June 27, 1884. Serial No. 136,200. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. SAWYER, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Machines for Dressing Covered Electrical Conductors, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to an improved machine for serving cotton or other fibrous-covered wire with a dressing substance—such as paraffine or a compound of the same with one or more suitable materials—in order that the coverings may become saturated with such dressing substance and be thereby rendered more efficient for insulating the wire and protecting it from moisture.

My invention will be clearly understood from the following particular description, in connection with the accompanying drawings, in which I have illustrated a machine constructed to treat several wires simultaneously, though it will be understood that a machine may be made on the same principle for treating only one or any convenient number of wires at a time.

Figure 1 is a perspective view of the machine from the front side and one end, and Fig. 2 is a similar view from the rear side and opposite end. Fig. 3 is a plan view of the tank. Fig. 4 is a longitudinal section of the same on the line *x x* of Fig. 3. Fig. 5 is a perspective view of one of the supports of the pulley-shaft in the tank. Fig. 6 is a detached side elevation of one of the drawing-pulleys. Fig. 7 is a side elevation of one of the receiving-reels. Fig. 8 is a vertical section of one of the compressing-dies.

Referring to Figs. 1 and 2, A indicates a platform or floor, near one end of which are a number of suitably-mounted removable delivery-reels, B, which carry covered wire that is to be dressed, and near the other end is a similar set of receiving-reels, C, to receive the wire after treatment.

D is a frame for supporting various devices, which will be presently particularly referred to, and in front of this frame is a tank, E, for containing the dressing-substance through which the wires are to be passed. Just above the top of the front wall of this tank is mounted a roller, F, and near the bottom of the tank is a shaft, G, carrying a number of grooved guide-pulleys, *g*, which may be mounted either loose or fast upon said shaft in any well-known manner. The shaft G is supported at its ends by bars *h*, carried by standards H, fastened to the platform and hanging over into the tank. Any other convenient means may be used for supporting these pulleys *g*, but I prefer the shaft and overhanging standards on account of convenience in removing the pulleys when it is desired to clean out or repair the tank. A steam-pipe, I, which may lead from any suitable boiler, extends into the tank, and at its bottom is carried around in one or more coils, or to a sufficient extent to heat or keep melted the dressing substance, and projects at I′, from which point it may lead off to any suitable point to discharge, or the two ends of the pipe may be connected with any well-known apparatus for circulating hot water or steam. The pipe is provided with a suitable cut-off cock, *i*, and with union couplings *i′*, so that the part within the tank may be readily disconnected for removal when necessary.

Above the rear wall of the tank is a horizontal bar, D′, which forms a part of the frame D, and in this bar are notches *k*, (one for each pulley in the tank,) covered by clamp K, each having one end hinged, while its other end is provided with an aperture for a screw projecting from the bar, and having a thumb-nut, *k′*, by means of which the clamp may be adjusted at the desired pressure upon a tuft of cotton waste, rags, or other soft material, as shown at *l*, one of said tufts being interposed in each of the notches *k* back of the clamp K, so that the wire will be drawn through the tuft, which will wipe off surplus dressing.

Above the bar D′ and at the top of the frame is pivoted a roller, M, having circumferential grooves *m* for guiding the wires, and to the rear of this roller is a bar carrying compressing-dies *n*, each of which is simply a metal or wooden plate or block with a conical passage, as shown in Fig. 8, the small end of which hugs the wire closely, so as to compress and polish its covering.

To the rear of the dies is another bar carrying guide-eyes *p*, which guide the wires to the drawing-pulleys *q*, one of which is shown

in elevation in Fig. 6. It has the shape of a frustum of a cone, and is provided at one end with a flange or head, q', and at the other end with a groove, q^2. All the drawing-pulleys are carried by a shaft, Q, journaled in frame D, and having one projecting end provided with a gear-wheel, Q′, meshing with a similar wheel, Q^2, which in turn engages a pinion, Q^3, fixed upon the driving-shaft R, having its bearings at opposite ends of the frame. One projecting end of the driving-shaft carries the ordinary loose belt-pulley S and fast belt-pulley S′, and its other projecting end carries a bevel gear-wheel S^2, which meshes with another bevel gear-wheel, S^3, fixed upon a short shaft, *t*, mounted at right angles to the driving-shaft, and extending a little to the rear of the frame. Upon the rear end of this short shaft is fixed a heart-cam, T, the periphery of which is arranged to play against one end of a sliding bar, V, provided with rearwardly-extending forked arms V′, and having its other end connected by a cord, *w*, with a weight, W, the cord passing over a pulley, *w′*, so arranged that the gravity of the weight will be exerted to force the sliding bar against the heart-wheel.

Each of the receiving-reels C has upon its shaft a grooved pulley, *c*, which is connected with the grooved end of one of the drawing-pulleys *q* by a suitable cord or round belt, *c′*.

In operating the machine, belt-connection is made with a suitable motor, and the wires to be treated are respectively drawn from the delivery-reels B over the roller F. Then each is passed down under a pulley, *g*, in the tank, up through the wiper behind one of the clamps K, over the roller M, rearwardly through a compressing-die, (if such dies are used,) thence through a guide-eye, *p*, to a drawing-pulley, *q*, and is wound around this pulley four or five times, in order that said pulley may have a good hold upon it. It is then passed through the fork of one of the forked arms of the sliding bar V, and is connected to a receiving-reel C in proper position. When all the wires have been thus made ready, the tank is filled as nearly full as may be desired of paraffine, or any other known fusible substance or compound suitable for saturating the coverings of electrical conductors, and the steam or hot water is turned on through the pipe I. When the dressing substance is properly melted, the moving portion of the machine is started by shifting the driving-belt to the fast belt-puliey, as usual, and then while the drawing-pulleys draw the wires along and pay them off the receiving-reels will take them up and they will be laid smoothly upon said reels by the forked arms V′, which move slowly back and forth as the bar V is reciprocated by the heart-cam and the weighted end.

Having now fully described my invention and explained the operation thereof, I claim—

1. The combination, with the platform and frame, of the tank having a guide-roll mounted on its upper edge, and a shaft provided with guide-pulleys journaled in its lower inner portion, wipers secured to the side and comprising dies and guides secured in the top of the frame, a guide-roll journaled at one end of the frame, a shaft journaled at the opposite end, having conical drawing-pulleys thereon, the delivery and receiving reels, and means, substantially as described, for operating the several parts, as set forth.

2. The combination, with the platform, of the frame D, mounted thereon, a shaft journaled in the lower part of said frame and extending across the same, a short shaft secured to the side of the frame at right angles to the other shaft, said short shaft having a cam on one end and a beveled gear on the opposite end, which meshes with a corresponding gear on the first-named shaft, a weight-actuated finger-slide mounted on the side of said frame and engaging with said cam, a tank, a guide-roll and drawing-pulleys mounted on the top of the frame, the receiving and delivery reels, and means for operating the several parts, substantially as shown and described.

3. The combination, with the tank, of a shaft having pulleys thereon, double standards secured to the platform at each end of the tank, and extending upward and over the edge of and downward to a point near the bottom of the inside of the tank, said standards supporting said shaft, substantially as and for the purpose specified.

4. The combination, with the tank, delivery and receiving reels, and guiding devices, of the headed conical drawing-pulleys, and mechanism for operating said drawing-pulleys and receiving-reels, substantially as described.

5. The combination, with the tank having heating-pipes thereon, of a series of wipers secured in the notches of a side cross-bar of the frame, said wipers being held in place by adjustable strips, the wire guiding and compressing devices, the headed conical drawing-pulleys, the reciprocating guides, the reels, and the mechanism, substantially as described, for operating the several parts, as set forth.

6. The combination, with the tank and the wire-guiding devices, of a series of compressing-dies having conical openings therein, a series of headed conical drawing-pulleys, belts connecting the same with the receiving-reels, and the gearing for operating the pulleys, substantially as described.

7. The combination, with the frame of the machine, of a cross-bar having notches cut therein, and a pivoted bar extending across said notches, having one end adjustably secured, whereby the bars may be removed from over the notches, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM H. SAWYER.

Witnesses:

GILMAN E. JOPP,

W. A. HATHAWAY.