R. W. NORTON.

Machine for Making Wire Bells.

No. 106,951. Patented Aug. 30, 1870.

fig. 1

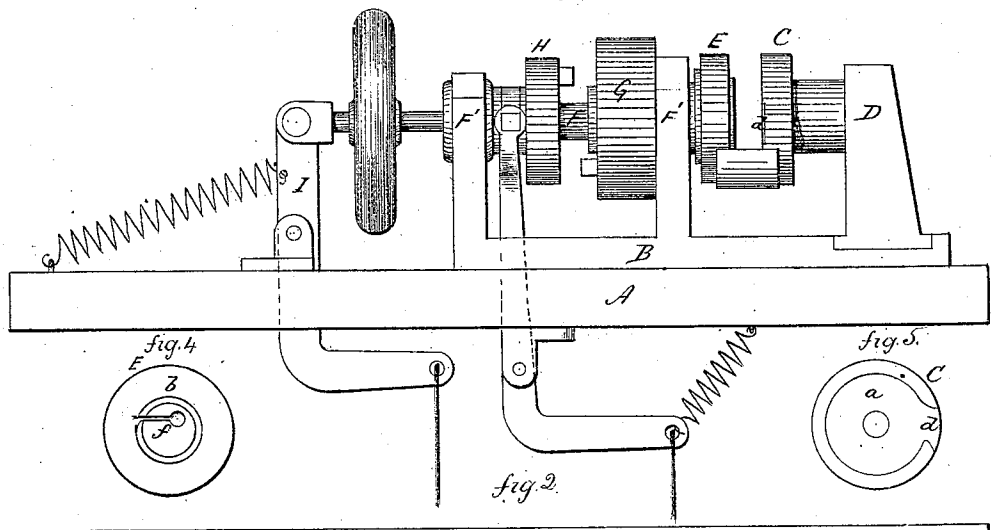

fig. 4

fig. 5.

fig. 2.

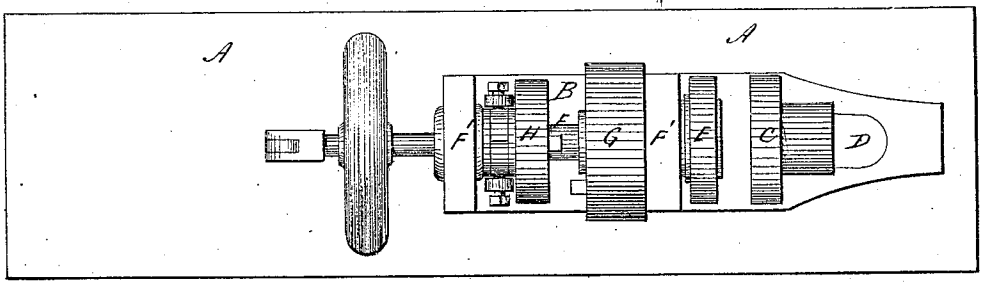

fig 6.

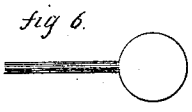

fig. 3

Witnesses,

D. H. Shumway

A. J. Libbits

Russell W. Norton

Inventor

By his Attorney

John E. Earle

United States Patent Office.

RUSSELL W. NORTON, OF NEW HAVEN, CONNECTICUT.

Letters Patent No. 106,951, *dated August* 30, 1870.

IMPROVEMENT IN MACHINES FOR MAKING WIRE BELLS.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, RUSSELL W. NORTON, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Machine for Making Wire Bells; and I do hereby declare that the following, when taken in connection with the accompanying drawing and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawing constitutes part of this specification, and represents in—

Figure 1, a side view;

Figure 2, a top view;

Figure 3, a longitudinal central section;

Figure 4, an end view of one of the heads;

Figure 5, an end view of the other head; and in

Figure 6, an end view of the wire preparatory to winding.

This invention relates to an improvement in making bells from wire, for various purposes.

Heretofore these bells have been wound by hand, simply coiling the wire, and then adjusting the several coils to each other.

The object of my invention is to avoid this adjustment, by causing the machine which winds the wire to discharge the bells completely adjusted, ready for use; and

It consists in a fixed head, combined with a revolving head, in one of which a projection is formed, and in the other a recess, the projection being of the diameter of the inner coil, and the recess enough larger to admit the several coils when wound upon the projection, the two surfaces holding the wire between them in proper relative position, so that, after winding, the bell is discharged properly adjusted.

A is the bench or table upon which the machine is set.

B, the bed-plate.

C, the fixed head, supported on an upright, D.

E is the other head, fixed to and so as to revolve with a mandrel, F, the said mandrel supported in bearings F'.

G is the pulley, through which power is communicated to the mandrel, by means of a clutch, H, by bringing the said clutch into contact with the pulley, as denoted in broken lines, fig. 3.

The head E also has a longitudinal movement imparted to it, by means of a lever, I, which presses the head E forward, and against the head C.

The head C has a recess, *a*, formed in its center, as seen in figs. 3 and 5, which is the depth of the diameter of the wire, and an opening, *d*, through the periphery.

The other head E has a projection, *b*, as seen in figs. 3 and 4, corresponding to the recess *a* of the other head, but of less diameter, that is to say, the diameter of the inner coil of the bell, and on this projection a recess, *f*, is formed, to receive the end of the bell-wire.

To wind the bell by this machine, I place the end of the wire, which is seen about full size in fig. 6, into the recess *f* in the head E, and force the head E up against the head C, as denoted in broken lines, fig. 3, the wire extending out through the opening *d*; then throw in the clutch, which causes the head E to revolve with considerable rapidity, and the wire is wound onto the projection *b* of one head, and into the space *d* of the other head, each successive coil lying closely upon the other, and held in proper relative position by the two heads, and, when fully wound and revolved sufficiently to retain its form, throw back the head E, and remove the bell, the reaction of the wire opening all the coils equally. The bell is in the exact shape required for use, and without the necessity of adjusting any of the coils or parts of the bell.

Either head may be caused to revolve, that is to say, they may be arranged the reverse of what I have described.

I claim—

Jointly, the construction, as herein described, of the recesses in the faces of the heads C and E, the arrangement of said heads with their faces in parallel planes, and with their axes in line with each other, and the combination therewith of mechanism to both rotate and reciprocate the head E, substantially as and for the purpose set forth.

R. W. NORTON.

Witnesses;

J. H. SHUMWAY,

A. J. TIBBITS.