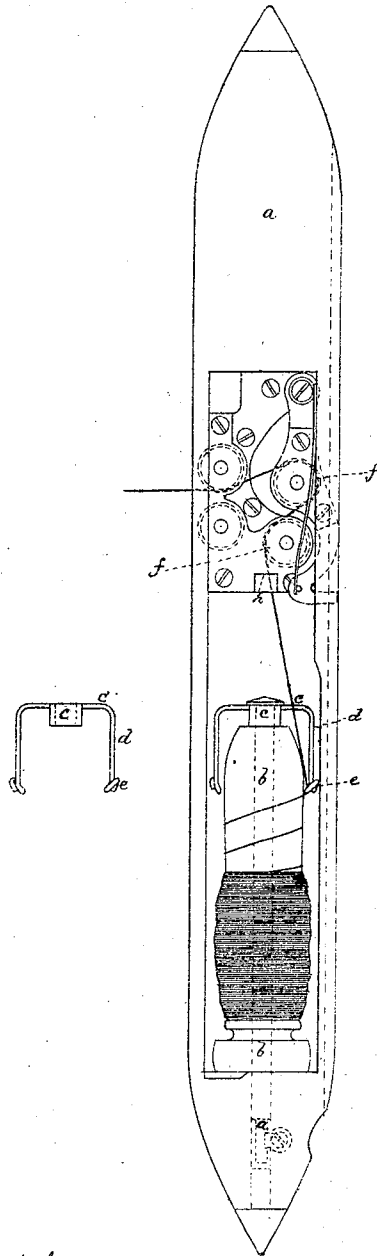


CHARLES H. WATERS & WILLIAM ORR, Jr.

Improvement in Shuttles for Weaving Wire Cloth.

117,837.

Patented August 8, 1871.



Witnesses.

C. F. W. Bushkunt,
H. J. Brown

Inventors.

Charles H. Waters
William Orr Jr.

UNITED STATES PATENT OFFICE.

CHARLES H. WATERS, OF GROTON, AND WILLIAM ORR, JR., OF CLINTON, ASSIGNORS TO CLINTON WIRE-CLOTH COMPANY, OF CLINTON, MASS.

IMPROVEMENT IN SHUTTLES FOR WEAVING WIRE-CLOTH.

Specification forming part of Letters Patent No. 117,837, dated August 8, 1871.

To all whom it may concern:

Be it known that we, CHARLES H. WATERS, of Groton, and WILLIAM ORR, JR., of Clinton, both in the Commonwealth of Massachusetts, have invented a new and useful Improvement in Shuttles for Weaving Wire-Cloth; and that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, in which—

Figure 1 is a plan view of the shuttle, showing the bobbin and delivery-rolls with our improvement applied; and Fig. 2 is a separate plan view of the revolving friction-finger, to be hereafter described.

Our invention relates to that class of shuttles which carries a bobbin having one head, and from which the wire is drawn off over the other end of the bobbin by the flight of the shuttle. In shuttles of this description the wire necessarily receives a turn of twist every time an amount of wire equal to the circumference of the roll of wire on the bobbin is drawn off; and, owing to the rigidity and elasticity of the material of the wire, it tends to kink under the action of such twist and make imperfect cloth. A device has been heretofore invented and put in use for controlling this tendency to kink by putting friction on the body of wire wound upon the bobbin, so as to keep the wire under restraint sufficiently for that purpose while being delivered from the bobbin. Our invention consists in certain means for putting such restraint upon the single thread of wire which is being delivered from the bobbin and before it reaches the delivery-rolls.

In the accompanying drawing, *a* represents the frame of the shuttle, in which is mounted in the usual manner a bobbin, *b*, having but one head, and over the opposite end of which the wire is drawn by the flight of the shuttle through the shed. We attach to the front end of the spindle, suitably formed for that purpose, on which the loaded bobbin is placed, a piece which we call a revolving friction-finger, *c*, and which is so constructed and attached to the front end of the spindle that it may revolve around the same, and which is made with an arm, *d*, extending in such direction that its salient end

shall lie near to the side of the bobbin in front of the mass of the wound wire. This salient end is formed with a loop or hole, *e*, through which the thread of wire, as it is drawn off from the bobbin, passes on its way to the delivery-rolls *ff*.

As the strand of wire is taken by the delivery-rolls in or about the line of the axis of the bobbin it will be seen that the line which the wire passes through, leading from the bobbin to the delivery-rolls through the said loop or hole *e*, is angular, and, consequently, the strain upon the wire, tending to bring it into a straight line, will keep it bearing hard against the edge of such loop or hole; and this pressure of the wire upon it causes the friction-arm *d*, on which it is formed, to revolve around its axis, (which, as before stated, coincides with the axis of the bobbin,) and thus keeps the running thread of wire under a constant and practically uniform restraint sufficient to hold it from kinking, as before mentioned.

We have shown in the drawing a guide or funnel, *h*, set in front of the delivery-rolls and in the line of the axis of the spindle, and through which the running thread of wire may be guided directly to the rolls. This may be dispensed with, although in practice we find it the better arrangement. We have also shown the rotating finger *c* as formed with two similar arms, one of which is lettered *e*; the other arm is merely for the purpose of balancing the arm *e*, and can be dispensed with, and, if used, its shape is immaterial.

What we claim as our invention, and desire to secure by Letters Patent, is—

The revolving friction-finger, constructed and operating as described, in combination with the wire-carrying bobbin, for the purpose of holding the running thread of wire under restraint as it is drawn through the delivery-rolls, substantially as described.

CHARLES H. WATERS.
WILLIAM ORR, JR.

Witnesses:
C. F. W. PARKHURST,
H. J. BROWN.