

J. M. STONE.
Spooling-Machines.

No. 139,930.

Patented June 17, 1873.

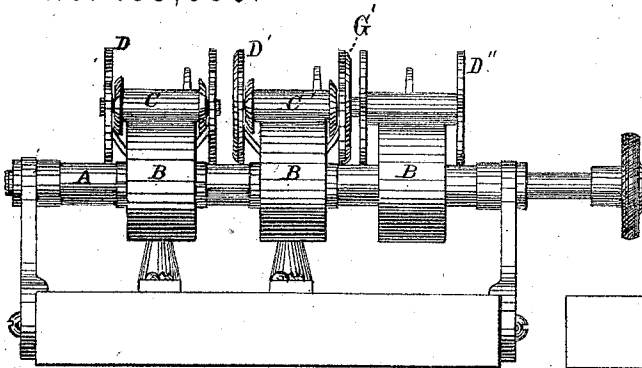


FIG. 1.

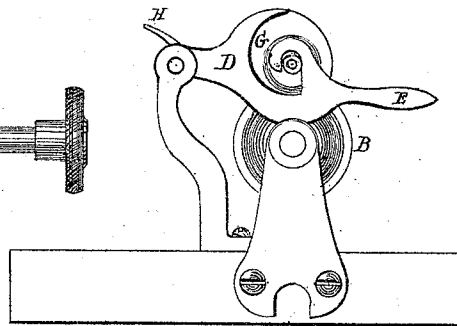


FIG. 2.

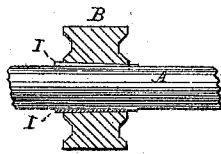


FIG. 5.

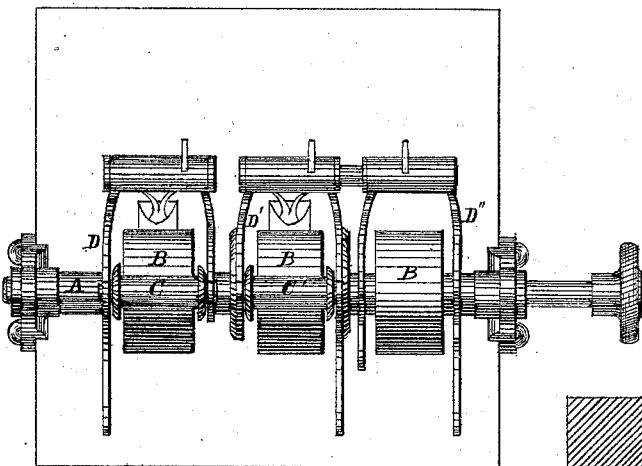


FIG. 4.

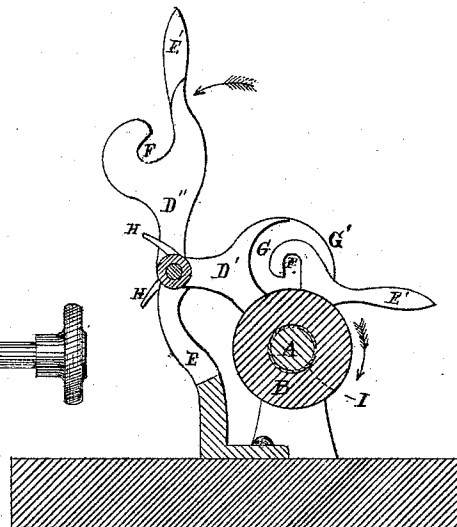


FIG. 3.

Witnesses.
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UNITED STATES PATENT OFFICE.

JOSEPH M. STONE, OF NORTH ANDOVER, MASSACHUSETTS, ASSIGNOR TO HIMSELF, GEO. L. DAVIS, JOHN A. WILEY, GEO. G. DAVIS, J. H. STONE, AND J. H. DAVIS, OF SAME PLACE.

IMPROVEMENT IN SPOOLING-MACHINES.

Specification forming part of Letters Patent No. **139,930**, dated June 17, 1873; application filed January 21, 1873.

To all whom it may concern:

Be it known that I, JOSEPH M. STONE, of North Andover, Essex County and State of Massachusetts, have invented certain Improvements in Spooling-Machines for winding yarn, &c., of which the following is a specification.

My improvements relate to that part of the mechanism of a spooler which carries the bobbin; and consists in combining, with the swinging-frame in which the bobbin revolves, a weighted handle, which serves to hold the bobbin upon the drum with sufficient force without the use of springs, as has been heretofore done, and also enables the swinging frame to be turned back to an upright fixed position when the yarn requires mending; and it also consists in making the spiral grooves and the bearing with their outer sides closed, and using in combination therewith a loose shaft or skewer, upon which the bobbin is mounted and which is removed from the bobbin when it is removed from the machine; and it also consists in combining, with the drum or pulley which drives the bobbin, a conical bushing by which the pulley is fixed upon its shaft, as will be described.

In the drawings, Figure 1 is a front elevation. Fig. 2 is an end elevation. Fig. 3 is a sectional elevation transverse to the shaft. Fig. 4 is a plan; and Fig. 5 is a section through one of the drums or pulleys, to show the conical bushing by which it is fixed upon the shaft.

Only so much of the machine is shown as will exhibit my improvements.

A is the drum-shaft, and B B B are the drums or pulleys, which drive the bobbins C C' in the usual way. The shaft is to be made of sufficient length to receive as many pulleys as may be desired. D D', &c., are swinging frames in which the bobbins C are held and revolve while they rest upon the surface of the drums. The frames at the back end are hung upon an axis in the tops of the standards E, which are fixed to the frame of the machine. The arms of the frame extend forward on either side of the bobbin, and in each is formed a bearing at F, in which the axis or

skewer of the bobbin revolves while it rests upon the drum. To the forward end of one or both of the arms is attached a weighted handle E', by the weight of which, in connection with the weight of the frame, the bobbin is pressed upon its drum with sufficient force to wind the yarn properly. In the construction of spoolers as heretofore practiced, the bobbin has been held down upon the drum by a spring attached to the frame, which prevented the frame from being turned up into a vertical position, as is seen in Fig. 3, when it was necessary to stop the bobbin. G, &c., are the spiral grooves which lead from the bearing F outward, as is shown in Figs. 2 and 3, into which the journals of the bobbin C fall and roll to the lowest position, when the frame D is turned up. H is a stop which is attached to the frame D in such a position that when it comes against the standard E the backward preponderance of the frame and bobbin will cause the frame to stand in an upright position and support the bobbin in the lowest point of the spiral grooves, from which the bobbin may be taken without obstruction. In Fig. 3 two forms of the groove G are shown, according to the direction in which the drum B and bobbins C are to turn, as shown by the arrows. In the middle frame represented in the drawings, the grooves G are modified by closing the outsides with plates G' attached to the frames and using a loose skewer, which is slipped into the hole in the center of the bobbin to form an axis for it, and is confined in the grooves endwise by the said plates; but in the case of the other bobbin shown, it is formed with gudgeons permanently attached to it as they have been heretofore used. In this last case, in handling the bobbins the yarn is liable to get soiled by coming in contact with the grease upon the gudgeons, which it is the purpose of the other construction to avoid, as the greasy skewer is removed from the bobbin when it is taken away. In Fig. 5 is represented in section the method of fastening the drums or pulleys B to the shaft A. The hole at the center is bored slightly conical and a little larger than the shaft, and a conical bushing, I, is made with

its interior diameter to fit the shaft and the exterior to fit the hole in the pulley B. This bushing is cut through upon one side so as to be slightly flexible, and by forcing it into the pulley in an axial direction the pulley is held firmly upon the shaft without any other devices.

What I claim is—

1. The spiral slots and bearings closed upon the outside by the plates G', in combination with the loose skewer to form an axis for the bobbin, substantially as described.

2. The weighted handle, in combination with the swinging frame, substantially as described.

3. The conical bush I, in combination with the shaft and the pulley having a conical bore, substantially as described.

JOSEPH M. STONE.

Witnesses:

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