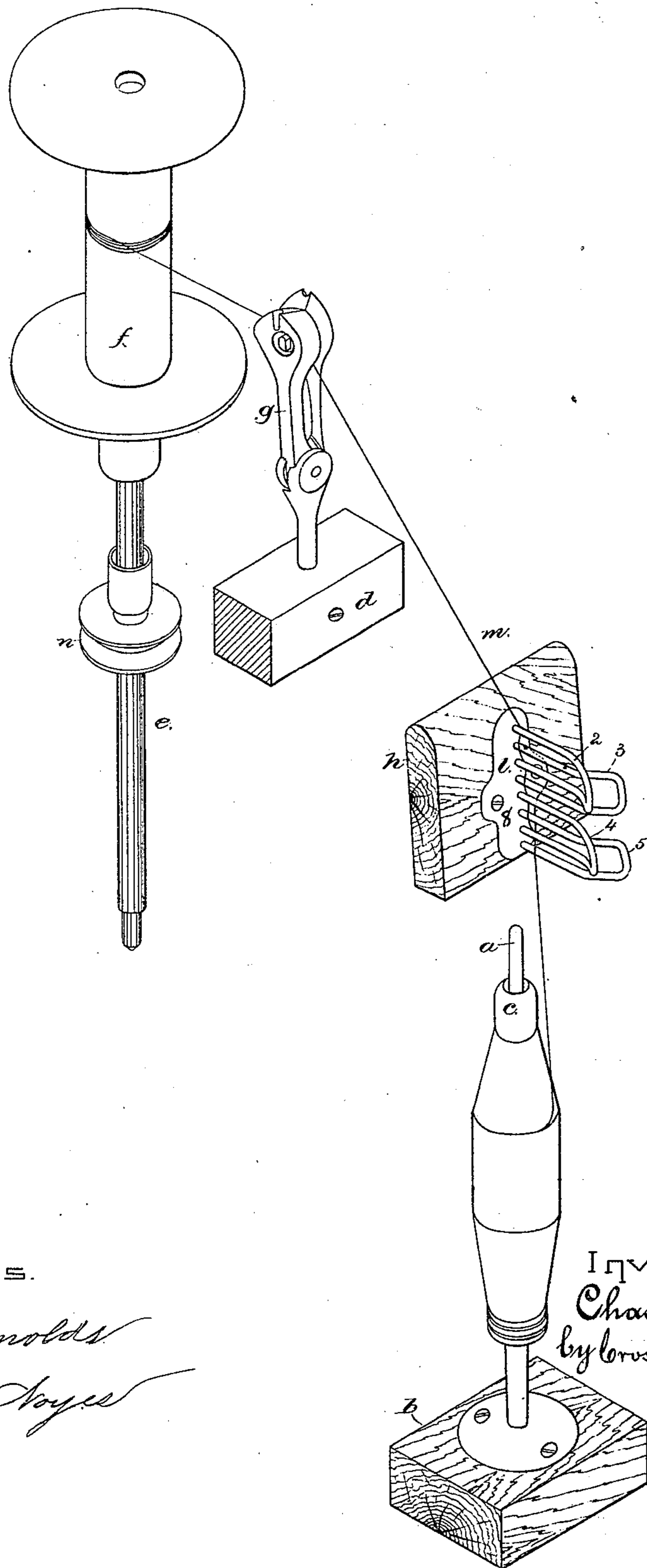


(No Model.)

C. SMITH.  
SPOOLING MACHINE.

No. 248,618.

Patented Oct. 25, 1881.



Witnesses.

*Arthur Reynolds*  
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# UNITED STATES PATENT OFFICE.

CHARLES SMITH, OF HOLYOKE, ASSIGNOR TO GEORGE DRAPER & SONS,  
OF HOPEDALE, MASSACHUSETTS.

## SPOOLING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 248,618, dated October 25, 1881.

Application filed April 7, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES SMITH, of Holyoke, county of Hampden, State of Massachusetts, have invented an Improvement in Spooling-Machines, of which the following description, in connection with the accompanying drawing, is a specification.

This invention in spooling-machines has reference to a novel tension device to operate upon the yarn preparatory to its passage through the yarn-guide, which raises and lowers the yarn as it is being wound upon the spool, the latter being rotated as usual by the spindle.

In spooling-machines as now ordinarily constructed the yarn, before its entrance through the yarn-guide, is passed over a flannel-covered bar, the yarn being held in contact with the said flannel by means of guide-eyes located in front of and at the rear of the said bar. The yarn soon cuts through this flannel covering, and as the latter becomes worn it becomes difficult to maintain such tension on the yarn as will enable it to be wound on the spool uniformly.

In this my invention I dispense with the usual flannel covering, and instead of it employ a tension device composed of a series of metal pins made as loops, so bent or flared with relation to each other as to afford an open space for the ready introduction of the yarn between the legs of the pins or loops.

This my invention is an improvement on that class of yarn-spooling machines represented in United States Patent No. 193,106, to which reference may be had.

The drawing represents, in perspective, a sufficient portion of a spooling-machine to illustrate my invention.

The skewer *a*, mounted upon the stationary rail *b*, or it may be the floor of the mill, the bobbin or cop *c*, placed thereon, the traverse-rail *d*, the spindle *e*, and the spool *f*, are and may be all as usual.

The yarn-guide *g*, as herein shown, is made substantially in accordance with United States Patent No. 130,058, to P. Laffin, July 30, 1872, to which reference may be had.

The stationary rail *h* has fixed to it my im-

proved tension device *l*, composed of four loops or staples, 2 3 4 5, those marked 3 5 having their upper or connected ends bent or curved outward away from and in a direction opposite the curvature of the outer ends of the loops 2 4, thus making an open or wedging mouth or space, in which the yarn *m* may readily enter and pass between the straight legs or wires of the said loops, as represented in the drawing, the said yarn being acted upon at opposite sides, and being bent more or less out of a straight or direct line, according to the amount of tension which it is desired that the tension device produce upon the yarn.

With a tension device constructed as shown the yarn may readily be placed in position to receive tension, the strain on the yarn keeping it between the loops. This tension device is easily and cheaply made, has been found in practice to be very durable, and enables the yarn to be wound upon the spool more evenly than with the old forms of tension devices.

The yarn guide *g* will be raised and lowered and operate upon the yarn in the usual manner to cause it to be wound from end to end of the spool, the latter being rotated by the spindle *e*, the whirl *n* of the said spindle being driven in the usual manner by a band. (Not shown.)

This tension device is of special value in saving time of the operator in tying on threads from the bobbin to the spools, one operator being enabled to attend fifty or more spindles, because of the readiness with which the yarn may be placed between the acting parts of the tension devices, the yarns placed near the flaring ends of the loops being drawn therein by the rotation of the spool.

In all other spooling-machines, so far as I am aware, much time has been wasted in winding the yarn about the tension devices or threading it through guide-eyes.

I claim—

1. The tension device *l*, composed of a foundation-plate, 8, and a series of metal loops bent outwardly at their upper ends and located, as described, to receive between them the yarn, all substantially as set forth.

2. The spindle of a yarn-spooling machine

to impart motion to the spool thereon, and the  
yarn-guide, combined with the bar, and the  
attached tension device 1, composed of a series  
of metal loops having their outer ends bent  
5 outwardly in opposite directions, and a founda-  
tion-plate to which said loops are secured,  
substantially as shown and described.

In testimony whereof I have signed my name  
to this specification in the presence of two sub-  
scribing witnesses.

CHARLES SMITH.

Witnesses:

EDWARD S. PACKARD,  
EWD. S. BRADFORD.