G. H. DODGE.

MACHINE FOR SPOOLING YARN, &c.

No. 6,435. Patented May 8, 1849.

Fig. 1.

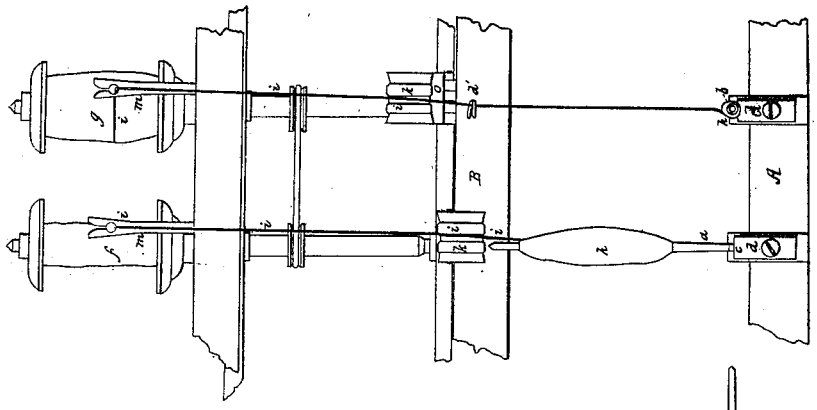


Fig. 3.

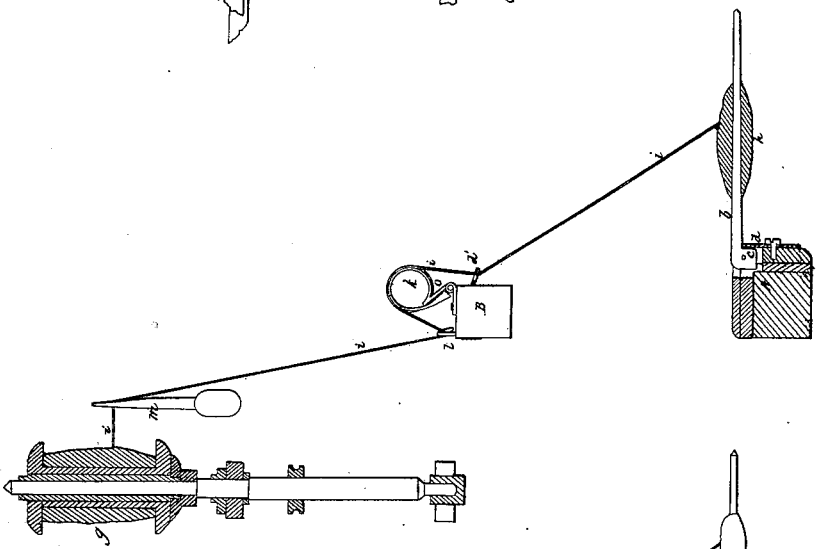
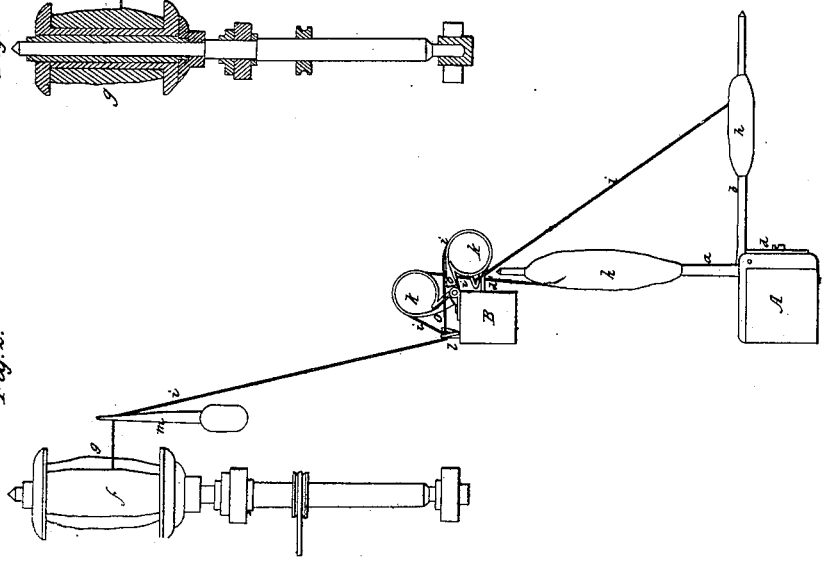


Fig. 2.



UNITED STATES PATENT OFFICE.

GEO. H. DODGE, OF ATTLEBORO, MASSACHUSETTS.

APPARATUS FOR SPOOLING YARN.

Specification of Letters Patent No. 6,435, dated May 8, 1849.

To all whom it may concern:

Be it known that I, GEORGE H. DODGE, of Attleboro, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Machinery for Spooling Yarn or Unwinding and Removing It from a Cop and Winding It on a Spool; and I do hereby declare that the same is fully described and represented in the following specification and accompanying drawings, letters, figures and references thereof.

Of the said drawings Figure 1 denotes a front side elevation of a portion of a spooling frame, sufficient to exhibit two cop spindles, and two spools disposed with respect to each other in the usual manner and having my improvements applied to them, one of the spindles and its spool and friction fetter, being represented in the positions they assume during the operation of spooling the yarn or winding it on the spool while the other spindle is shown in a horizontal position, and its friction fetter as turned up above its yarn guide, as will be hereinafter more particularly described. Fig. 2 is what may be termed an end elevation of the aforesaid contrivances or one taken at right angles to that first mentioned. Fig. 3 is a vertical section of the spindle friction fetter and spool, taken transversely of the spooling machine.

My improvements are applied to every spindle of the spooling frame, therefore it becomes necessary that I should only describe them in their application to one of the spindles thereof.

In the said drawings *a* and *b* represent two cop spindles supported by a horizontal rail or bar A. Each should be hinged or jointed to the rail A in such manner as to permit it to be turned downward from a vertical position into one sufficiently inclined to enable a person to readily place a cop on it, without any interference or contact with the guide rail B, above the lower part of which and nearly against which the upper part or nose of the spindle when said spindle is in a vertical position, is carried or placed as exhibited in the drawings. The lower part or joint of the spindle is formed with a small projection *c* against which a spring *d*, arranged as seen in the drawings, is made to bear and to preserve the spindle in an upright or vertical position, when it is so arranged. I do not however confine my invention to the aforedescribed mode of applying the spindle to the supporting rail, as I have contemplated another which may be adopted and which will also attain the end I desire. For instance the spindle may be attached to a small slide plate, so affixed to the supporting rail as to be capable of being drawn outward, and forced inward as occasion may require its outward movement being sufficient to carry the spindle far enough away from the guide rail, as to enable a person to easily place a cop on said spindle without abstraction from the guide rail. I would here and now take occasion to remark that in order to accomplish this object, viz. the supplying the spindle with a cop, it has been customary to place the point or upper end of the spindle so far below the guide rail as would admit of the cop being placed on the spindle, and for this purpose it will readily be seen that such an arrangement rendered it necessary that the point or upper end of the spindle should be disposed at a distance from the guide rail about equal to the length of the cop. It being necessary that the axis of the spindle shall be in a vertical line passing through the center of the guide ring or eye *d'* (in order that the yarn may be drawn off it without abstraction or danger of coiling on the spindle) it will be seen that when a spindle is made stationary or immovable in position, the only method of arranging it so that a cop can be placed on it is to carry its point to a distance below the guide rail about equal to the length of the cop to be placed on it. Such a disposition of the nose or upper end of the spindle with respect to the guide rail is attendant with a serious difficulty which it is the purpose of my improvement to avoid. This difficulty consists in the kinking of the yarn while being drawn off the cop, and it arises from the great length of it, usually extending from the cop to the guide *d'*. By placing the nose or point of the spindle close or very nearly up to the guide *d'* and applying the spindle to its supporting rail so that it may be either turned into an inclined position, or be moved outward at a sufficient distance from the guide rail, the danger of kinking of the yarn is greatly lessened if not entirely obviated.

The spools of the spindles *a*, and *b*, are represented at *f*, and *g*, the yarn of each cop *h*, being shown at *i*, as passing from the cop, and being carried through the guide or eye

d and thence outward, and partially around the friction fetter k, thence through another eye or ring l, placed as seen in the drawings, thence upward and through a vertical guide m, and thence to the spool on which it is wound.

The friction fetter k, consists of either a tube or a cylinder affixed to an arm O, which projects from and is hinged to the guide rail B, and is made and arranged in such manner as to permit the friction fetter to be brought down into a horizontal position directly in front of the ring or guide d' and so that the axis of the fetter may be in a horizontal plane or about in a horizontal plane with the guide d'. The arm O is also made so that the friction fetter when the arm is turned upward shall be carried high enough above the yarn guide d', or far enough out of the way of it, to enable a person to readily and conveniently obtain such access to the guide as may be sufficient to admit of the yarn being passed through it, whenever a fresh cop is put on the spindle or the yarn is accidentally broken.

The common mode of arranging the fetter is to place it entirely above the guide d' and far enough to permit the operation above alluded to, to be easily and quickly performed. Such a disposition of the fetter, causes the yarn to touch or rest against its outer surface a very short distance in proportion to the distance of bearing which it has when the fetter is disposed in front of the guide and partially below it, and supported by an arm hinged to the guide rail, as above specified, consequently my improvement in arranging and applying the fetter enables me to obtain more friction on the yarn in its passage across the curved surface of the fetter, and thereby not only prevents it from kinking between the fetter and spool, but causes it to be more tightly wound on the spool, than it is when the fetter is made and arranged in the usual way heretofore practiced.

Instead of applying the friction fetter to an arm hinged to the guide rail as specified, it may be applied to a slide so applied to said arm as to enable the fetter to be raised above the guide to such extent as may be sufficient to enable a person to get convenient and proper access to the guide in order to pass a thread through it. I mention such a mode of applying the fetter to the rail, as one which I have contemplated, and which may be substituted for the hinged arm as before described.

What I claim as my invention is—

1. The arrangement or arranging of the point or nose of the spindle within a short distance (say about one inch or a half inch or nearer if possible) from the yarn guide which is directly over it and (that is in combination with) so applying the spindle to its supporting rail by means of a hinge slide or other equivalent that it either be inclined or turned down out of a vertical position or be moved or slid outward to such extent as to permit a cop to be placed on it without interference with either the guide rail or the yarn guide.

2. I also claim the arrangement of the friction fetter with respect to the yarn guide in combination with then so supporting it on the guide rail, by such a contrivance, viz, a hinged arm or slide or its equivalent as will admit of said fetter being moved away from the guide sufficiently for the purpose hereinbefore stated the said arrangement of the fetter with respect to the guide consisting in placing it directly in front of and partially below the guide as above described, and as exhibited in the drawings.

In testimony whereof I have hereto set my signature this eleventh day of December A. D. 1848.

GEORGE H. DODGE.

Witnesses:
R. H. EDDY,
F. GOULD.