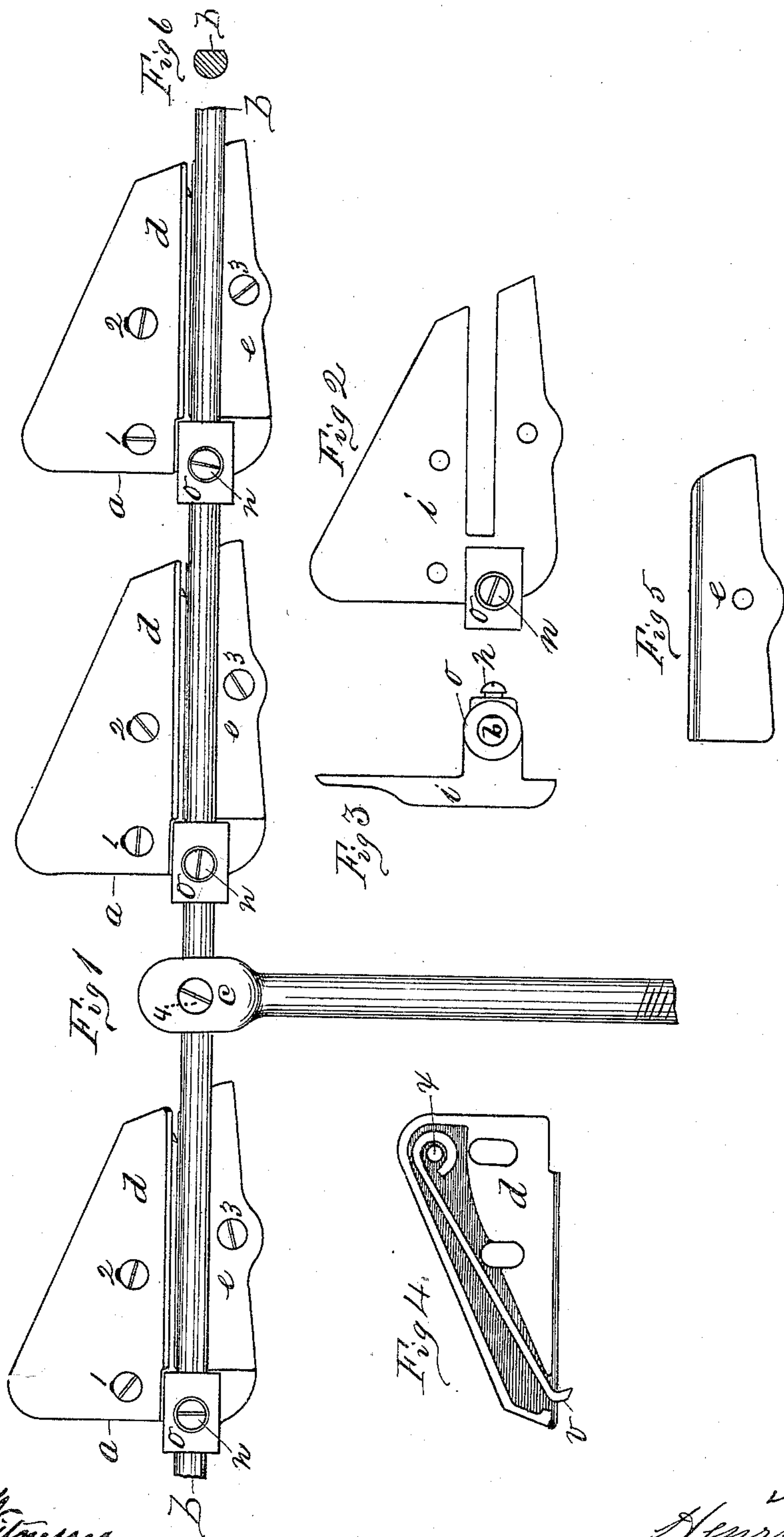


(No Model.)

H. L. GARDNER & B. F. ADAMS.
YARN GUIDE FOR SPOOLING MACHINES.

No. 431,188.

Patented July 1, 1890.



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YARN-GUIDE FOR SPOOLING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 431,188, dated July 1, 1890.

Application filed April 8, 1881. Serial No. 30,353. (No model.)

To all whom it may concern:

Be it known that we, HENRY L. GARDNER and BENJAMIN F. ADAMS, citizens of the United States, residing at Springfield, county of Hampden, and State of Massachusetts, have jointly invented new and useful Improvements in Yarn-Guides for Spooling-Machines, of which the following is a specification.

This invention relates to the details of construction of guides to be used on spooling-machines and of devices for supporting said guides in proper position before the bobbin upon which the guided yarn is being wound, the object being to provide a guide for the above-named purpose of more simple and inexpensive construction than heretofore made, one which by simple but effective means retains the yarn within the guide-slot, one which cannot accumulate dirt anywhere in the track of the yarn as it runs through the guide, and one which, together with its supporting devices, affords the most ample means for the adjustment of the guides longitudinally and vertically in front of the winding-bobbins without disconnecting it from the guide-rail.

In the drawings forming part of this specification, Figure 1 is a front elevation of a series of yarn-guides arranged upon their supporting devices, all constructed according to our invention. Fig. 2 is a front elevation of our yarn-guide frame, from which the guide-plates and yarn-stop are removed. Fig. 3 is an end elevation of the frame, Fig. 2. Fig. 4 is a view of the back side of the upper guide-plate, showing the yarn-stop pivoted thereon. Fig. 5 is a front elevation of the lower guide-plate. Fig. 6 is a transverse section of the yarn-guide rod.

In the drawings, *a* is the yarn-guide.

b is the guide-rod.

o is a sleeve on guide *a*.

c is a post supporting rod *b*.

i is the frame of the guide.

d is the upper guide-plate.

v is a pivoted yarn-stop.

e is the lower guide-plate.

Like letters and numerals refer to like parts in the several figures.

We construct the guide *a* of metal, making the frame thereof *i* in one piece and of the

form shown in Figs. 2 and 3. On a projection on the front side of said frame we form a sleeve *o*, having a cylindrical opening through it parallel to the face of said frame, and in the front side of said sleeve we place a screw *n*. The opening through said sleeve is of such diameter as will allow of slipping the guide-rod *b* through it.

Frame *i* has three screw-holes through it, as shown, into which screws 1 2 3 enter, which serve to secure the upper and lower plates *d* and *e* to said frame. Plate *d* is provided with elongated screw-holes, as shown, and its rear side, or the one which lies against the face of frame *i*, is recessed to receive the yarn-stop *v*, which hangs on a pivot or stud *x*, and whose lower end drops through a notch at the lowest part of said recess and falls below the lower edge of plate *d* by gravitation. When plate *d*, with the yarn-stop *v*, is secured upon frame *i*, as shown in Fig. 1, the said lower end of the yarn-stop *v* rests upon the upper edge of plate *e*. The said lower end of the yarn-stop is beveled off slightly in a direction from the end of plate *d*, as shown most clearly in Fig. 4. The parts of guide *a* are completely assembled by securing the lower plate *e* upon frame *i* in addition to the plate *d* and stop *v*, above mentioned.

The post *c* is adapted to be secured in an upright position to the usual guide or building rail of the spooler-frame, and is provided at its upper end with a transverse perforation to permit said post to be placed on the rod *b*, and passing from outside of said post into said perforation is a set-screw 4, which serves to secure said post at a certain point on said rod. In practice several of said posts *c* are fixed in said building-rail of the spooler-frame, and by said posts the guide-rod *b* is supported in a line along in front of the winding-bobbins of the frame, and upon said rod are placed the yarn-guides *a*, one for each winding-bobbin, and are secured in proper position thereon by the screws *n* through the sleeves *o*, which screw against a flattened side of said rod, as shown in Fig. 6, and also keep said guides from turning on it. Thus said guide *a* can easily be moved on rod *b* to exactly the position required and there secured,

as above described, and the entire rod *b*, which may be in one single piece on one side of the spooler-frame may, with all its guides, be slid in the tops of the posts *c* to adjust the entire number of guides on one side of said frame at one movement. Said simultaneous adjustment of many guides is often desirable when the size of the winding-bobbins is changed. Said guide-rod *b* serves, also, the usual purpose of a guide over which the yarn runs in passing from the bobbin below, as it runs from a vertical to nearly a horizontal line in passing between the plates *d* and *e* of the yarn-guide. It will be seen that the rod *d* (see Fig. 3) must be in such a position in front of the plate *e* of the guide as to leave an opening between the face of the latter and said rod. The said opening is just below the upper edge of plate *e*, and as the yarn runs over said upper edge more or less of dirt becomes disengaged from said yarn, and is thus free to fall away from it through said opening, and cannot be caught up and carried with the yarn onto the winding-bobbin. The usual yarn-slot between the edges of the plates *d* and *e* is of adjustable width, provided for by having plate *d*, by reason of its oblong screw-holes, adjustable vertically on frame *i*.

The operation of said yarn-guides is similar to others of this class and will be easily understood by those familiar with the machines to which they are applicable. The yarn-stop *v*, pivoted in plate *d*, is adapted to have its point lie on the upper edge of plate *e*, as aforesaid, and its end is beveled off, as described, so that the yarn entering the slot between said plates will slide under the point of said stop and the latter will drop down again and retain the yarn within the slot. Said stop operates so freely, swinging upon its pivot *x* by gravitation only, that the lightest yarn will not be broken in passing under it.

What we claim as our invention is—

1. The combination, with the guide-rod *b*, of the frame *i*, having thereon the sleeve *o*, and the plates *d* and *e*, secured to said frame, substantially as set forth.

2. The combination of the frame *i*, having an open end slot, as shown, and formed with a projecting sleeve *o*, having its aperture arranged in a horizontal direction, the plates *d* and *e*, secured to the frame *i*, the plate *d* being formed with a recess, the pivotally-supported gravity-stop *r* in said recess, and the horizontal supporting-rod *b* in said sleeve *o* and constituting the yarn-rest and guard-support, substantially as described.

3. The combination, with a series of yarn-guides having horizontally-arranged yarn-slots and formed with sleeves having horizontal apertures, of a horizontally-arranged supporting-rod, fitting in said sleeves parallel with the yarn-slots of the yarn-guides to constitute the support for the yarn-guides and a rest for the yarn, substantially as described.

4. The combination, with a series of yarn-guides having horizontally-arranged yarn-slots and formed with sleeves having horizontal apertures, of a horizontally-arranged supporting-rod parallel with the yarn-slots of the yarn-guides, to constitute the support for the yarn-guides and a rest for the yarn, and a vertical support for said supporting-rod and yarn-rest having a sleeve in the top to secure the said rod, and a set-screw to detachably and adjustably retain the rod, substantially as described, and for the purpose specified.

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