(No Model.)

R. C. FAY.

KNOT TYING APPARATUS.

No. 280,921. Patented July 10, 1883.

Fig: 1.

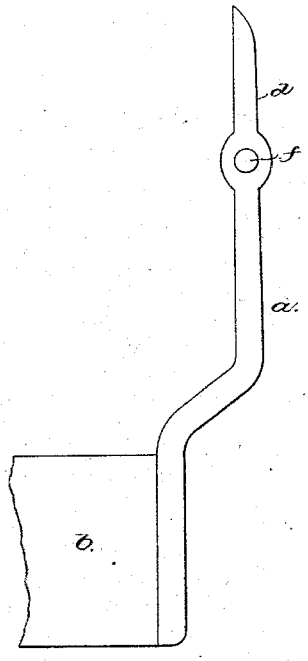


Fig: 2.

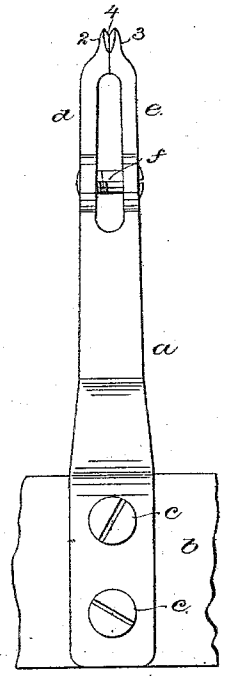


Fig: 3.

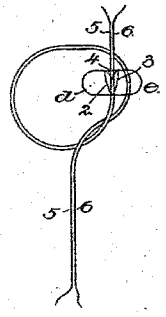


Fig: 4.

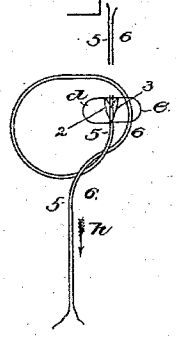


Fig: 5.

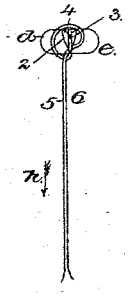
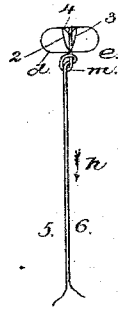


Fig: 6.



Witnesses.

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UNITED STATES PATENT OFFICE.

RIMMON C. FAY, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR TO GEORGE DRAPER & SONS, OF SAME PLACE.

KNOT-TYING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 280,921, dated July 10, 1883.

Application filed January 29, 1883. (No model.)

To all whom it may concern:

Be it known that I, RIMMON C. FAY, of Hopedale, county of Worcester, State of Massachusetts, have invented an Improvement in Knot-Tying Apparatus, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object the production of a device by which to tie knots in threads or yarns and leave but a short piece of the same beyond the hard knot, my apparatus being applicable for use in warping, spooling, and similar machines.

My improved apparatus is composed of a standard having its end forked and pointed, and preferably held together by an adjusting device, herein shown as a screw, by which the pronged parts may be adapted to operate properly with threads of different sizes.

Figure 1 represents in side elevation a knot-tying apparatus embodying my invention; Fig. 2, a front elevation thereof; and Figs. 3 to 6, inclusive, top views of the knot-tying apparatus, shown in connection with two threads to be tied into a hard knot, the positions of the said threads in the different figures showing progressively the formation of a knot.

The standard *a*, fixed upon a beam or other suitable base, *b*, by screws *c*, has its upper end forked or made to present yielding arms *d e*, shaped as shown in Fig. 2, to form looping-points 2 3, about which may be wrapped the threads or yarns 5 6 to be tied, the latter being brought together and being laid or drawn down into the space 4, formed by beveling the inner sides of the looping-points, as clearly shown in Figs. 2 to 6. The arms *d e*, at their upper ends, are held more or less closely together, according to the size or diameter of the yarn or thread to be tied, by means of the adjusting device *f*, (shown as a screw,) their contact or position with relation to each other being closer as the yarn or thread 5 6 is finer.

When a hard knot is to be tied in two threads, 5 and 6, they will be brought together and held near their ends between the thumb and forefinger of the left hand of the operator handling the said threads, and, with the right hand holding the ends of the said threads, the operator will form a loop of the shape shown in Fig. 3 about the end of the forefinger of the left hand, and will then place the said loop, while yet held by the finger, over the looping-points 2 3 in the position Fig. 3, and will, with the right hand, draw the said threads, near their ends, down into the beveled space 4, between the points, as in Fig. 3, the threads, near their ends, crossing over the looped part of the thread back of its ends. With the threads placed as in Fig. 3, the operator will continue with the right hand to draw upon the ends of the threads and draw the same down into the space 4 until, by their wedging into the said space and by reason of the strain thereon by the operator, the said threads will be broken off, as in Fig. 4, very close to the looping-prongs, the pieces broken off outside the points being thrown away. In Fig. 4 it will be seen that the free ends of the threads terminate close to the rear side of the looping-points. The free ends of the two threads being held as in Fig. 4, the operator, by the left hand, will pull outward the threads 5 6, to draw them in the direction of the arrows *h*, to take up the loop in the said threads, and in so doing the said loop will be gradually contracted about the looping-points, as in Fig. 5, and then, by a slight upward movement of the left hand, the contracted loop will be drawn up or made to further contract and pass over the top of the points, forming a hard knot, as at *m*, Fig. 6, very close to the evened ends of the said threads.

The arms and looping-points will be so set that the threads to be tied may be drawn down and be wedged into the space between them with sufficient force to be held firmly clamped between the said arms after the projecting uneven ends of the said threads have been broken off, as stated. The screw *f* may be turned to make the space between the said arms, at the bottom of the inclines 4, just wide enough to receive and clamp and hold the particular threads being used.

I do not broadly claim a knot-tying apparatus having a rigid arm and a yielding arm and cutter, down between which the thread or yarn is drawn and cut off, and then, a loop having been formed, is drawn up and off a prong on one of the said parts.

In this apparatus I have dispensed with a

separate or independent cutting-edge by which to sever the threads, and by means of the adjusting device I have been enabled to adapt the apparatus to threads of varying sizes or diameters.

I claim—

1. The knot-tying apparatus herein described, it being composed of the forked standard having arms *d e* and looping-points beveled to form a space, 4, down into which the threads may be passed as they are drawn between the points and arms, to be held while the knot is being tied, substantially as described.

2. The standard *a*, forked at its upper end to form yielding arms *d e*, and shaped to form looping-points, with a space between them for the reception of the threads to be held and tied, combined with an adjusting device to place and keep the said arms at the proper distance apart, substantially as described.

3. A knot-tying apparatus combined with an adjusting screw or device to adapt the knot-tying apparatus for use with threads or yarn of different sizes, substantially as described.

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

RIMMON C. FAY.

Witnesses:
A. B. C. DEMING,
R. A. COOKE.