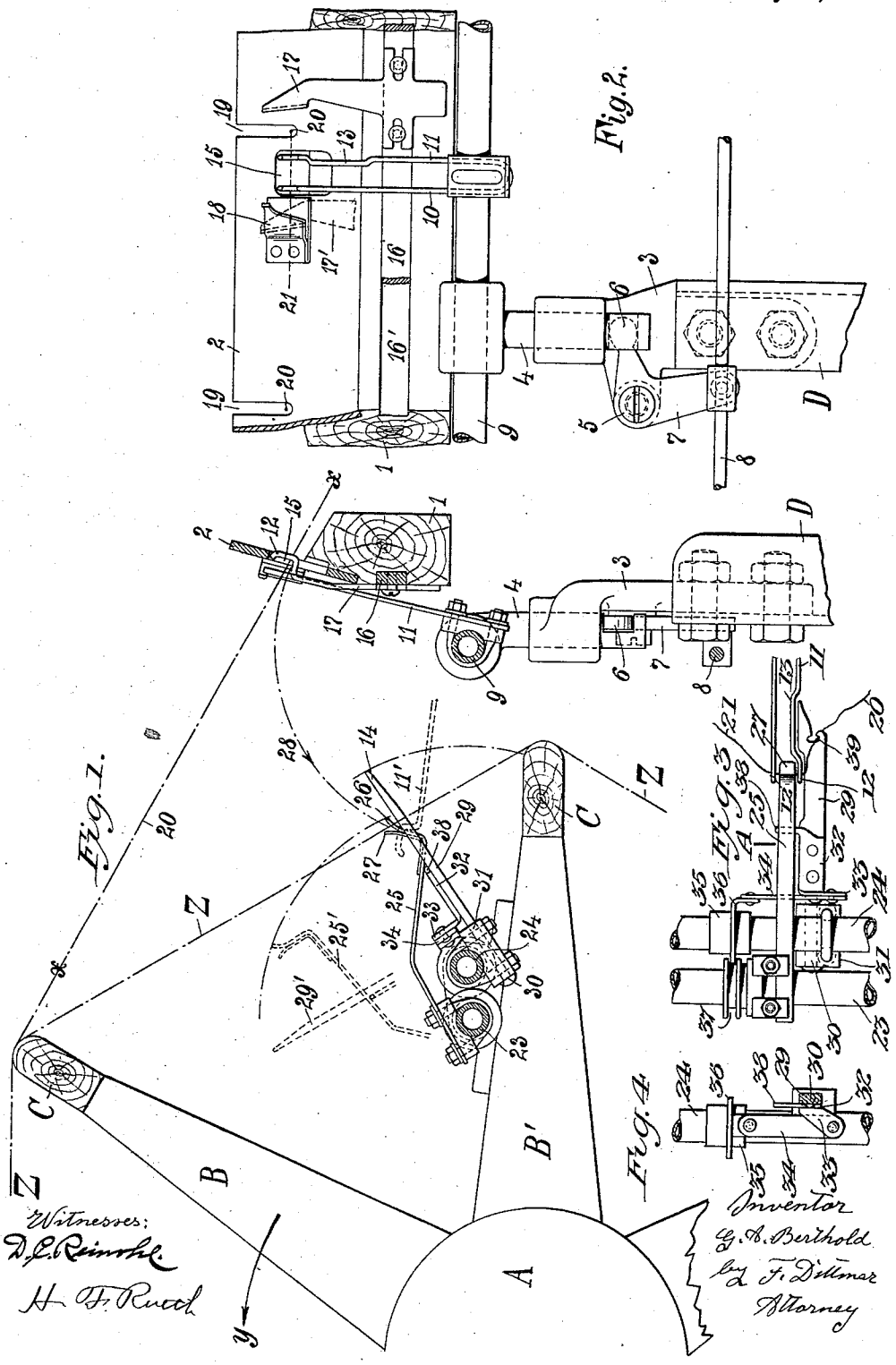
G. A. BERTHOLD.

SKEINING MACHINE.

APPLICATION FILED AUG. 29, 1912.

1,068,847.

Patented July 29, 1913.



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UNITED STATES PATENT OFFICE.

GUSTAV ADOLF BERTHOLD, OF CHEMNITZ, GERMANY.

SKEINING-MACHINE.

1,068,847. Specification of Letters Patent. Patented July 29, 1913.

Application filed August 29, 1912. Serial No. 717,676.

To all whom it may concern:

Be it known that I, GUSTAV ADOLF BERTHOLD, a subject of the King of Saxony, residing at Chemnitz, in the Kingdom of Saxony, Germany, have invented certain new and useful Improvements in Skeining-Machines, of which the following is a specification.

This invention has reference to a machine or machines for automatically winding threads and the like upon a reel.

In the accompanying drawing a portion of the mechanism of the new skeining or reeling machine is clearly shown. The whole machine is about 10 to 15 feet long, and the portion represented in the drawing is assumed to be applied from 12 to 18 times in each single machine. In order to clearly define and demonstrate the invention it will suffice to show only one part in the drawing, seeing that the said part shown is precisely similar in all respects to the said parts not shown.

Figure 1 is a vertical cross section through the mechanism. Fig. 2 is a front elevation thereof. Fig. 3 shows a portion of Fig. 1 viewed from above. Fig. 4 is a vertical cross section obtained by intersecting Fig. 3 at the point A whereby the point of intersection is to be regarded from the right side.

The reel consists of the usual well-known parts viz.: shaft A, arms B and caps C. When in use it is caused to rotate in the direction of the arrow *y* in order to wind up the threads *x*—*x*. In the frame of the machine, whereof only the part D is shown in the drawing, it is to be assumed that the wooden fillet 1 is rigidly attached to the rail 2 and to a number of arms 3.

A prismatic slide 4 is made to move vertically upward and downward in the arm 3. The crooked lever 6, 7 is adapted to rotate around the bolt 5 and engages with the arm 6 passing into a transverse groove in the aforesaid slide 4. The other arm 7 is articulated to a rod 8. Now if the rod 8 be caused to move to and fro in a longitudinal direction, then all the slides 4 will be moved up and down. The hollow shaft 9 is mounted on the upper end of the slide 4 in suchwise as to rotate thereon. Two wire pins 10, 11 are attached to the shaft 9. The upper ends of these forks 10, 11 are given a hooked shape as may be seen from Fig. 4. In addition to this the wire pin 11 has furthermore a lateral rectangular gap 13, as may be seen from Fig. 2. There is also a rectangular aperture provided in the rail 2.

The wooden fillet 1 is provided with a groove 16′ in which a metal rail 16 is mounted to slide longitudinally. To the rail 16 there is also attached a knife 17, and a further knife 18 is mounted on the rail 2. The knife 17 can be moved to the left to such an extent that it will take up the position shown in dotted lines at 17′ in Fig. 2. The two knives 17 and 18 come together like the two blades of a pair of scissors, as it is their aim and object to cut off the thread 20. As hereinafter explained the end of the thread thus cut off is gripped and held fast between the two knives aforesaid. In the upper edge of the rail 2 a slot 19 is provided, the object of which is to act as a guide to the thread 20.

Two hollow shafts 23, 24 are mounted to rotate on the arm B′ of the reel; the shaft 23 is adapted to be moved longitudinally thereto. To the shaft 23 there is attached an arm 25 made of thin steel plate, and the front end of the said arm has the form of a fork 26, 27 for the purpose of holding the thread firmly therein.

On the shaft 24 there is mounted a bearing device 31. At its lower end a thread guide 29 is provided with a pivot 30, which is mounted in suchwise in a round bore in the said bearing device that it will rotate therein. To the thread guide 29 there is firmly riveted a small plate 32, fitted with a hinge 33. A ring 35 is adapted to slide on the shaft 24 and is provided with a plate 36, which engages between two rings 37 on the shaft 23. The two parts 33 and 36 are movably connected with each other by means of a short rod 34. Now if the shaft 23 be moved in its longitudinal direction the ring 35 will also be displaced, and by the intervention of the rod 34 the thread guide 29 will be caused to rotate around its pivot 30.

The small plate 32 is provided with a finger 38 which engages behind the arm 25. Now if the shaft 24 be rotated, in suchwise that the thread guide 29 comes into the position 29′ shown in dotted lines in Fig. 1, then the arm 25 will be compelled to take up the position 25′ due to the action of the said finger 38.

The end of the thread guide 29 is provided with an eye 39 and a wedge-shaped point 14.

Now the method of operation of the de-

vice hereinbefore described is as follows: Let it be assumed that a piece of work has just been completed, and that the caps C with the thread Z ready wound thereon have been dismounted from the reel, the said reel being thus empty, *i. e.* the threads Z are no longer present thereon; the cut off end of the thread, however, is clipped and held fast between the two knives 17′ and 18. The thread thus lies approximately in the direction shown by the lines 20—21 in Fig. 2. The shaft 9 is now moved upward by drawing the rod 8 to the right. Consequently the two hook-shaped ends 12 of the forks 10, 11 move under the threads 20—21. If a rotation now be given to the shaft 9, so that the fork 11 in Fig. 1 moves along 28 into the position 11′ shown in dotted lines, then it will carry the thread along with it and insert it into the forks 26, 27. The fork 11 is then swung back into the inactive position and the shaft 9 is lowered, in that the rod 8 is moved back again to the left. As may be seen from Fig. 3 the gap 13 of the fork 11 adapts itself exactly to the point 14 of the thread guide 29. At the precise moment when the fork 10, 11 places the thread in the fork 26, 27, so that the thread end may here be clipped firmly, the thread 20 (Fig. 3) slides along the oblique point 14 into the eye 39. As soon as all this has taken place the knife is also withdrawn from the position 17′ into the position 17, and consequently the end of thread 21 hangs loosely as shown in Fig. 3. Now the shaft 24 is turned so far that the two parts 25 and 29 take up the position 25′, 29′, and hereupon the preparation for winding the thread 20 on the caps C of the reel is completed, and now the reel is caused to rotate in the direction of the arrow *y*. If the winding up of the thread Z be completed, then the two parts 25′, 29′ must be turned back again into the position 25, 29. Hereby, however, the broad thread guide 29 would not be able to pass back through the thick coil of thread layers Z, and this is the reason why the mechanism 33, 34, 35, 36, 37 described above has been adjusted to the machine. If, for instance the shaft 23 be moved to a slight extent in its longitudinal direction, then the thread guide 29 will turn on its axis 30 in such a way that the sharp point 14 of the thread guide 29 can pass without resistance through the wound up mass of thread Z. The object of this movement is to bring the commencement of the thread 20 outward so that it can be connected with the end of thread cut off by the scissors 17, 18. Meantime the knife 17 has again moved into the position 17′, has cut off the thread and firmly gripped the remaining end. The cut-off end, however, is employed in the manner known to tie together the wound up threads Z and is finally knotted together with the thread end 20, Fig. 3. If all this has been done the thread guide 29 is again turned back into its original position by moving the shaft 23 in a longitudinal direction, and the same cycle of operations is commenced afresh as hereinbefore described, *i. e.* the fork 10, 11 is moved downward along the path 28 and so *ad sequitur*.

What I claim and desire to secure by Letters Patent, is:

1. In a thread winding machine, a clamping fork, means whereby the thread end is placed in said fork, and means for passing the fork through the wound thread.

2. In a thread winding machine, a clamping fork, means whereby the thread end is placed in said fork, a thread guide, said fork and said guide being so combined that they can be moved along the periphery of the reel and be returned into the interior of the reel.

3. In a thread winding machine, a clamping fork, a thread guide rotatable around its longitudinal axis, and a flat point on said guide adapted to be passed through the wound up thread.

In testimony whereof I affix my signature in the presence of two witnesses.

GUSTAV ADOLF BERTHOLD.

Witnesses:
SIDNEY RICH,
WM. W. BRUNSWICK.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."