G. A. BERTHOLD.

DEVICE FOR BINDING SKEINS ON REELS.

APPLICATION FILED OCT. 18, 1912.

1,084,193. Patented Jan. 13, 1914.

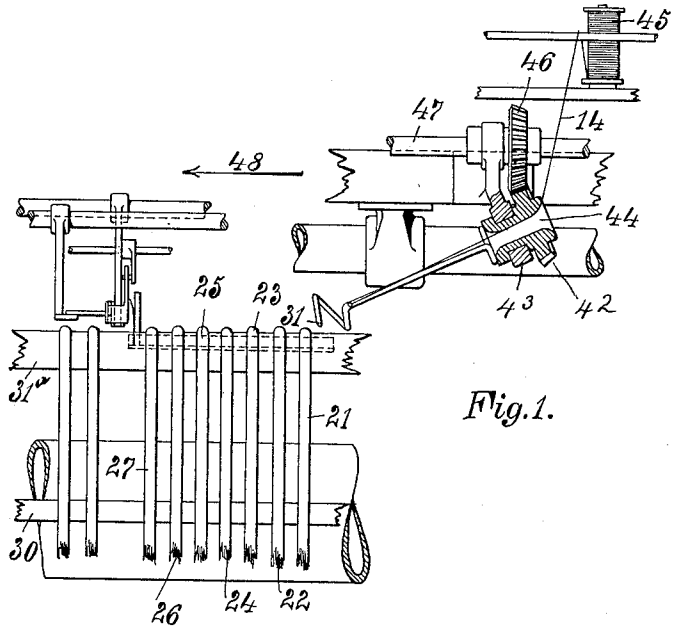
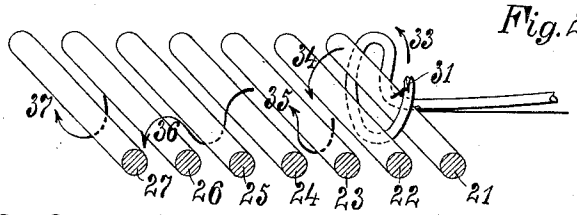


Fig. 1.

Fig. 2.



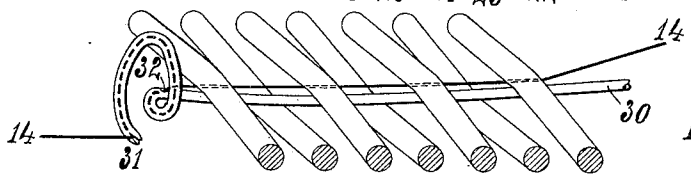


Fig. 3.

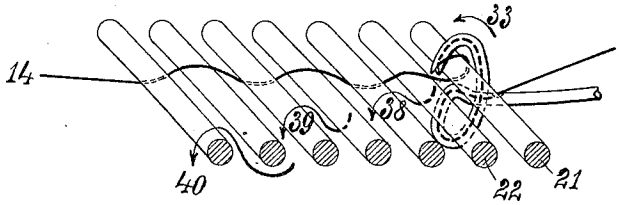


Fig. 4.

Witnesses
D. C. Reinhold
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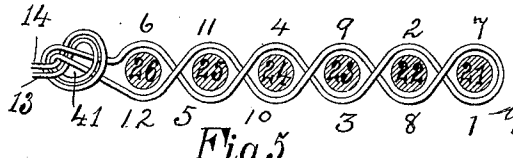


Fig. 5.

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DEVICE FOR BINDING SKEINS ON REELS.

1,084,193. Specification of Letters Patent. Patented Jan. 13, 1914.

Application filed October 18, 1912. Serial No. 726,562.

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 Devices for Binding Skeins on Reels, of which the following is a specification.

The new device is shown in the accompanying drawings.

Figure 1 is a front view of the new device. and explain how and in what manner the new device is to be used.

In Fig. 1 a number of skeins 21, 22, 23 . . . 26, 27 are wound upon the reel or cop holms 30, 31ª. Now the object of the new device is to couple, or bind together, the aforesaid skeins 21, 22, 23, etc., by means of a separate thread 13, 14, as shown in Fig. 5, in such a manner that they cannot get entangled but remain side by side in well ordered layers. As a device to effect this end use is made of a rotatable rod 30, Fig. 1, one end of which is fashioned like a cork-screw or ordinary screw. This screw-shaped portion is hollow, and its open end 31 is split, as especially shown in Figs. 2 to 4. The thread 14 is pushed through a hole 32 in the screw-shaped part, and clipped fast in the split end 31.

The method of operation is shown in Figs. 2 to 5. As seen in Fig. 2 the screw-shaped part turns in the direction of the arrow 33, and its split end 31 engages from below between 21 and 22. On further rotation the point 31 moves in the direction of the arrow 34 between 22 and 23 in a downward direction, and in the same manner the screw-portion winds itself gradually around all the skeins 25, 26, 27, as shown by the arrow 36. Finally the point 31 of the screw-portion arrives at the arrow 37. Fig. 3 shows this moment of the operative stage. The end of the thread 14 is now held fast, and the rod 30 turns back in the opposite direction. In Fig. 4 the screw-portion has again returned to its original primary position; whereupon, as also shown in Fig. 4, it again begins to move for the second time in the direction of the arrow 33. The sole difference between Fig. 2 and Fig. 4 lies in the fact that the split screw-end 31 in Fig. 2 engages between 21 and 22 from below. In Fig. 4 on the contrary the split screw end engages between 21 and 22 from above. The screw now travels in the direction of the arrows 28, 39, 40 for the second time between and through the skeins, the arrangement being such that at the same time the other thread end 13 is held fast and connected with the thread end 14 in such wise as to form a knot 41. The thread is cut off, and the end thus cut off is clipped firmly in the split end 31. The screw now again makes a rotary backward movement in order to retake its inoperative position. Fig. 5 shows how the skeins 21, 22, 23, 24, 25, 26 are bound together after completion of the operative movement. The consecutive enumeration of the numbers or figures 1, 2, 3, 4, 5, 6, shows how, in accordance with Fig. 2 and Fig. 3, the binding thread was placed upon the first transit of the screw; while figures 7, 8, 9, 10, 11, 12 show how the thread, according to Fig. 4, was laid during the second travel of the screw.

An explanation shall now be given of the mechanism which operates the rod 30 together with the screw.

The rod 30 is fastened to a bevel wheel 42 which rests in the bearing 43 in a manner adapted to rotate. In the center of the said wheel 42 there is a bore 44, through which the thread 14 is passed. The thread 14 comes from the spool 45.

The teeth of the wheel 42 engage with the teeth of the wheel 46. This wheel 46 is fastened to the shaft 47, which latter can be caused to rotate by any suitable driving mechanism not shown in the drawing. In order that the screw 31 may be able to execute the movements explained in Figs. 2 to 5, the entire mechanism 43, 44, 47 is adapted to slide horizontally in the direction of the arrow 48.

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

1. A device for binding the skeins on a reel comprising a main support, a carriage mounted on said support, a vertical beveled gear wheel on said carriage, a hollow gear wheel supported from said carriage and engaging said vertical gear wheel, a hollow rod connected to said hollow wheel their openings being in alinement, a hollow screw on the end of said rod said hollow wheel, rod and screw adapted to inclose a binding thread, and means on said screw to hold said thread.

2. A device for binding the skeins on a reel comprising a main horizontal support, a bar carrying a carriage and slidable on

said support, a vertical gear wheel on said carriage, an arm on said carriage supporting a hollow wheel meshing with said vertical wheel, a hollow rod on said hollow wheel whose bore alines with the bore of said hollow wheel, a hollow screw having a split end on said rod, a spool supplying thread through said hollow wheel said rod and said screw and means to rotate said screw to engage around the skeins on the reel bars, as described.

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

GUSTAV ADOLF BERTHOLD.

Witnesses:
JOSEPH MICHLE,
WALTER WILDENHAND.

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