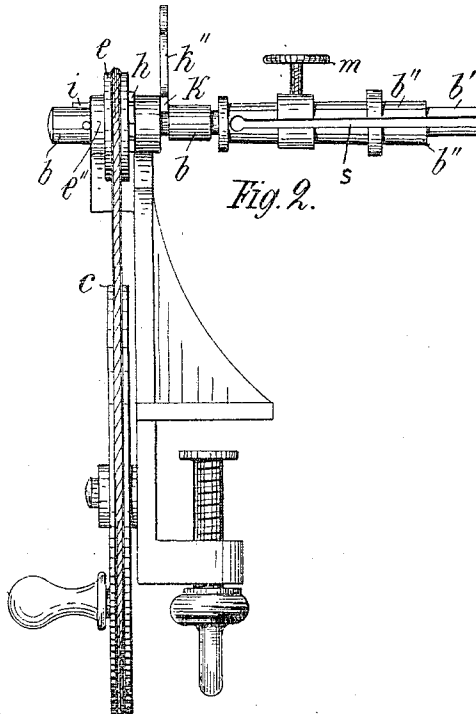
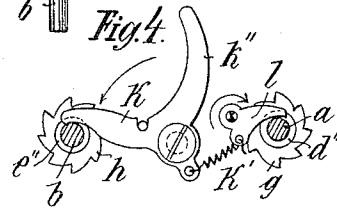
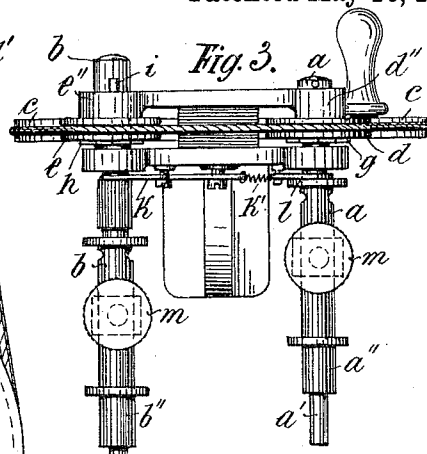
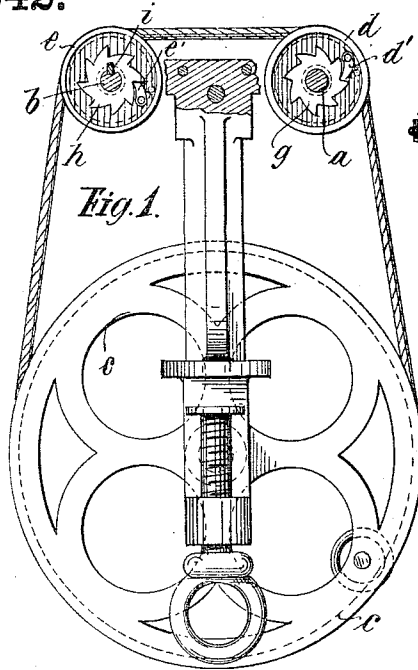


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WINDING APPARATUS FOR INKING RIBBONS.
APPLICATION FILED OCT. 3, 1906.

957,542.

Patented May 10, 1910.



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GEORG BLUEN, OF BERLIN, GERMANY.

WINDING APPARATUS FOR INKING-RIBBONS.

957,542.

Specification of Letters Patent.

Patented May 10, 1910.

Application filed October 3, 1906. Serial No. 337,323.

To all whom it may concern:

Be it known that I, GEORG BLUEN, citizen of Germany, residing at Berlin, Germany, have invented new and useful Improvements in Winding Apparatus for Inking-Ribbons, of which the following is a specification.

This invention relates to a new apparatus which for the first time solves the problem of winding inking ribbons and the like of any width in a convenient and easy manner, and at the same time allows for reels of various diameters of bore being used on one and the same apparatus.

The characteristic feature of the invention consists chiefly in that the apparatus has two axles arranged parallel to each other the axles having varying thicknesses or diameters and being adapted so that reels with various diameters of bore, may be placed opposite each other.

The invention is shown diagrammatically in the accompanying drawing in which,—

Figure 1 is a front view of the apparatus in partial section, Fig. 2 a side view of the same, Fig. 3 a plan view, Fig. 4 shows the reversing and friction gear.

Both shafts, *a*, *b*, are arranged parallel to each other in the frame. The frame can be clamped to the top of a table in the usual manner, or may be fastened to the same by any suitable means. A crank disk pulley *c*, is arranged on the frame, the belt or cord of the pulley running over rollers, *d*, *e* on the shafts, *a*, *b*. These rollers are not rigid on the shafts but are provided with pawls *d'*, *e'*, so as to rotate the ratchet wheels, *g*, *h*, on the shafts in opposite directions. From this it may be seen that when rotating the pulley *c*, in the direction of the hands of a watch, the roller *d*, at the right in Fig. 1 rotates the shaft *a*, while the pawl *e'*, of the roller *e*, glides over its ratchet wheel, *h*, so that a winding-on reel placed on the shaft *a*, has to rotate the winding-off reel on the shaft, *b*, and the shaft itself, by the tensioned ribbon. If the pulley, *c* is rotated in the opposite direction then the shaft, *b*, must receive the winding-on reel and the shaft, *a*, the winding-off reel. Thus it is not necessary to take off these separate reels and to change them over to the other shaft. Now in order to comply with the requirements in winding-up ribbons where winding reels with various diameters of bore have to be used on that end of each shaft which is to receive the reels, a number of steps *a'* *a''*, *b'* *b''*, are provided,

and one of the shafts, (in the construction shown the shaft *b*) is also displaceable in its bearing in a longitudinal direction, so that the thicker or thinner step may be placed opposite the corresponding step of the other shaft. The ratchet wheel *h* of this shaft is not rigidly fitted to it but has a pin, *i*, engaging in a groove of the shaft, so as to be displaceably connected with it but not rotatively connected with it. A pawl, *k*, serves for maintaining the shaft in its various positions, said pawl being arranged in the frame and pressed by a spring, *k'* in corresponding borings of the shaft, and can be drawn back by means of a thumb piece *k''*. This spring, *k'* acts on a pawl *l*, which rests against the other shaft, *a*. Both the spring pawls give the necessary friction for maintaining the ribbon at the necessary tension by winding up and unwinding. In order that this friction may not be disturbed by the pressing of the pawl roller on the shafts *a*, *b*, the pawl rollers are not arranged directly on the shaft, but on bushes *d''* *e''*, which are capable of taking up the load.

The variations in the diameter of the shaft may not suffice for the varying diameter of the bores met with in practice and therefore are provided with a device permitting of adjustment to intermediary sizes. In the form of construction shown this device consists of a longitudinal slot *s* in each shaft, and a press screw, *m*, by rotating which one can effect a separation of the halves of the shafts, separated by the slot. The method of adjustment allows the shafts to be set to suit all dimensions of bore likely to be met with. Preferably the press screw is provided with a prolongation which passes through the second half of the shaft and engages a rivet head or the like at the end of the step under the surface of the shaft. By this manner the halves of the shaft can not only be distended by the screw, but they can also be drawn toward each other. Naturally the adjustment of the steps or sizes could be arranged in any different manner, more particularly in that the shafts can be completely divided into two or more parts and these parts can be adjusted in their position relative to each other by screw, cam, or other gear.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A winding apparatus for ribbons and

the like, comprising two rotary shafts mounted parallel to each other, means for rotating the shafts, each shaft having a number of steps thereon forming spool bearing portions of different diameters, and means for expanding each shaft to increase the diameters.

2. A winding apparatus for ribbons and the like, comprising two slotted shafts arranged parallel to each other and each having steps thereon forming spool bearing portions different in diameters, means for expanding each shaft to increase the diameters and means for rotating the shafts.

3. A winding apparatus for ribbons and the like comprising two rotary shafts mounted parallel to each other, each shaft

having a series of spool bearing portions, the portions on each shaft differing in diameter from each other, and means for adjusting one shaft longitudinally whereby a spool bearing portion of one shaft of a certain size may be brought into alinement with a spool bearing portion of the other shaft of the same or different size, substantially as described.

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

GEORG BLUEN.

Witnesses:

WOLDEMAR HAUPT,
KARL MARTEUR.