E. FRITSCH.

APPARATUS FOR DRAWING THE THREAD END INTO COPS.

APPLICATION FILED JULY 10, 1911.

1,038,554. Patented Sept. 17, 1912.

Fig. 1.

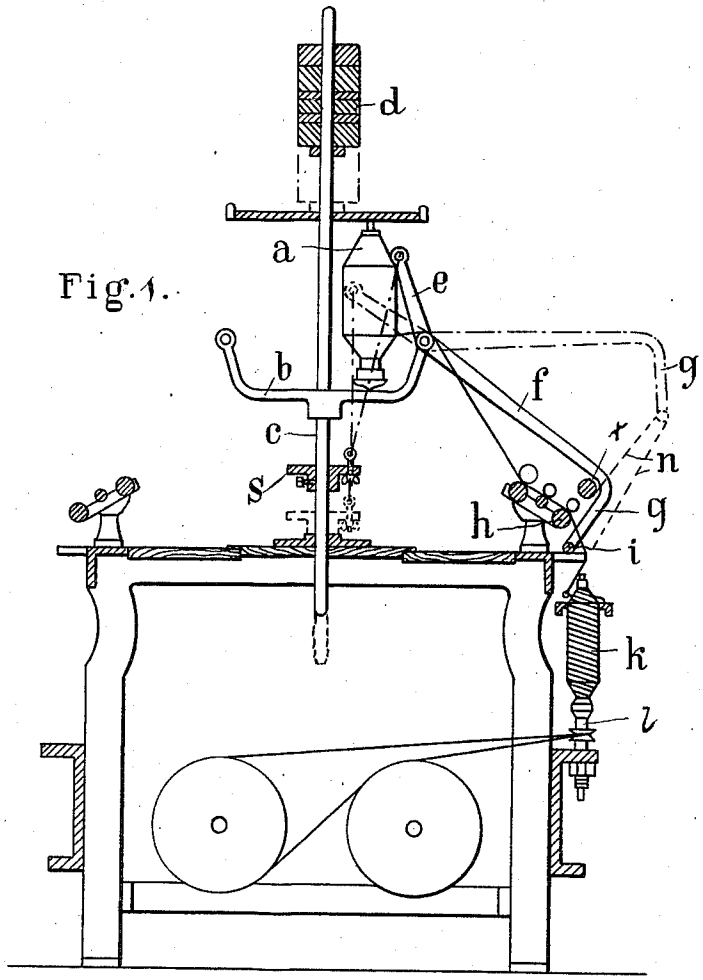


Fig. 2.

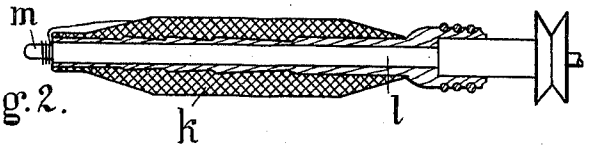
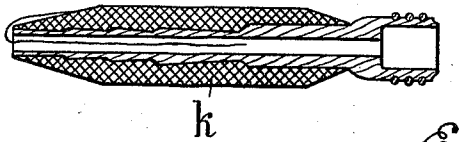


Fig. 3.



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UNITED STATES PATENT OFFICE.

EMIL FRITSCH, OF WEILER, NEAR SCHLETTSTADT, GERMANY.

APPARATUS FOR DRAWING THE THREAD END INTO COPS.

1,038,554. Specification of Letters Patent. Patented Sept. 17, 1912.

Application filed July 10, 1911. Serial No. 637,716.

To all whom it may concern:

Be it known that I, EMIL FRITSCH, a subject of the German Emperor, residing at Weiler, near Schlettstadt, in Alsace-Lorraine, Germany, have invented a new and useful Apparatus for Drawing the Thread End into Cops, of which the following is a specification.

The drawing of the thread into the interior of cops was hitherto done by means of a special arrangement after the withdrawal of the spool from the ring spinning machine and inserting the thread in the form of a ring into the spool hole. The present invention obviates the disadvantages connected with the before mentioned procedure, and the principal object of the invention is to provide mechanism with which the end of the thread is wound around the spindle on the ring spinning machine itself and the free end of the thread is drawn into the cops by means of mechanism on the spinning machine when the latter is taken off the machine so that the thread is not displaced.

In the drawing: Figure 1 is a sectional elevation of the ring spinning machine. Fig. 2 is a sectional elevation of the spool with the spool lying on its spindle. Fig. 3 is a section of the spool with the spindle withdrawn.

The supply means, or spool *a*, for the coarse yarn rests on a stationary frame *b*, guiding a shaft *c* which is provided with counterweight *d*. By means of an adjustable flange *s*, the shaft, together with the counterweights are in balanced relation to lever *e*—*f* and appertaining parts, arm *e* of which is connected to the flange *s* while the arm *f* is provided with an angle portion *g* which engages over the drawing rollers *h* and is connected to adjacent levers, not shown in the drawing, by means of a rod *i*. The lever *f* is normally positioned adjacent a stationary rod *r*. The thread passes from the drawing rollers *h* over the rod *i* to the fine yarn spool *k*. The spindle *l*, upon which the spool is placed, is provided at its tip with screw threads *m* around which the forward end of the thread is wound and retained so that when the spindle *l* is withdrawn, the thread lies within the cop as may be seen in Fig. 3 of the drawing. It is to be understood, that in practice, several like structures herein disclosed are placed in vertical planes adjacent to each other and any number of levers *f* may be connected to operate in unison by means of the rods *i*.

After the fine cops are finished the operator lifts the arms *g* by means of the rod *i*, so that the shafts *c* sink together with their counterweights, as indicated in dotted lines, Fig. 1 the whole being arranged so that very little force is required for this operation owing to the balancing of the masses. As a result of this movement the thread passing over the rod *i* is drawn through contact with stationary rod *r*, into a loop *n* which piece is then used for widening around in grooves *m* on the spindle after inserting a blank cop upon spindle 1. The thread must of course be correctly guided so that it is wound upon the corresponding portion of the spindle. During the winding the thread automatically draws the rod *i* together with the lever *f* back into its original position so that no further apparatus is necessary in addition to that generally used for the withdrawal of the cops.

I claim:

In an apparatus for drawing the thread end into the interior or hollow of cops, the combination of the supply means for the yarn, a spindle adapted to receive the thread end and form a cop, a pivotally mounted device intermediate said supply means and spindle over which the thread is guided to the spindle, and means counterbalancing the device so that upon the device being lifted from a normal position under control of said counterbalancing means, a loop is formed in the thread providing slack for the starting of another cop, the said device being returned to a normal position by the winding of the thread subject to action of the spindle.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

EMIL FRITSCH.

Witnesses:

SIGFRIED HAUSER,

AUGUST OOSTERMAN.