Nov. 25, 1924.

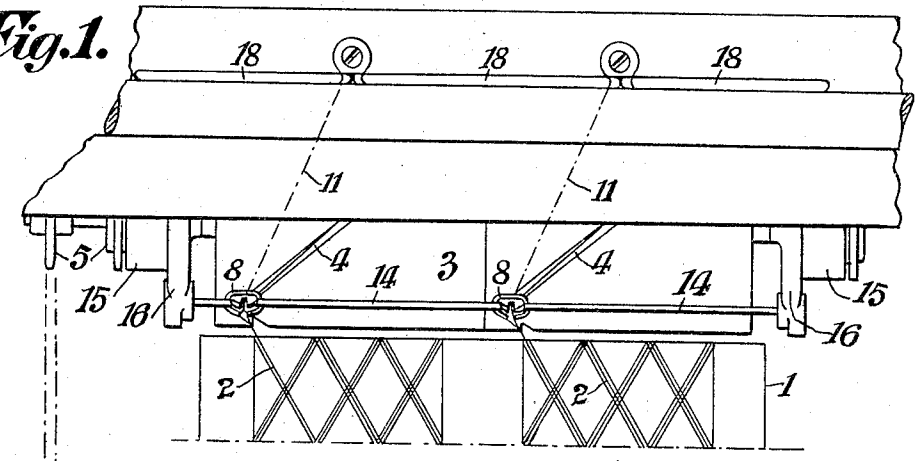
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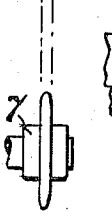
H. SCHWEITER

WINDING MACHINE

Filed Feb. 13, 1924

Fig.1.





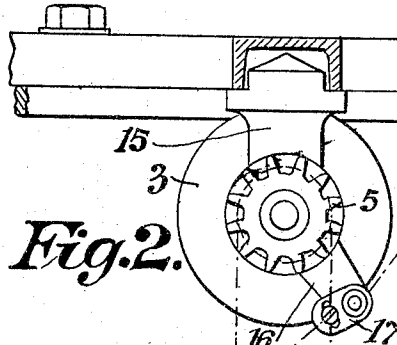


Fig.2.

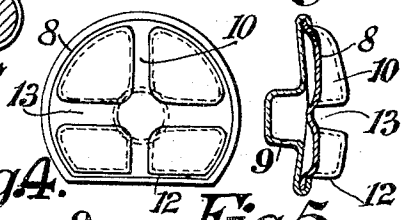
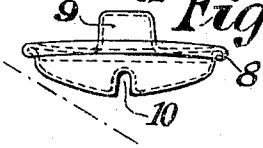


Fig4.

Fig.6.

Fig.5.



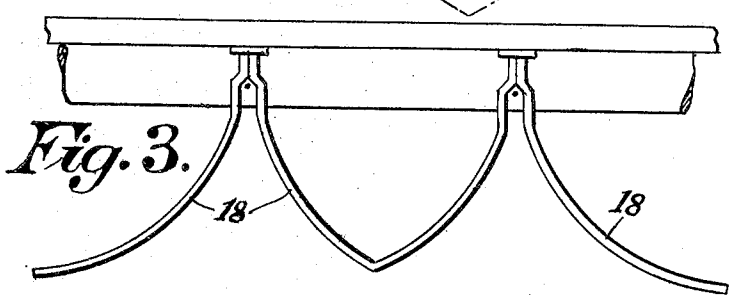


Fig.3.

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Patented Nov. 25, 1924. 1,516,648

UNITED STATES PATENT OFFICE.

HANS SCHWEITER, OF HORGEN, SWITZERLAND.

WINDING MACHINE.

Application filed February 13, 1924. Serial No. 692,578.

To all whom it may concern:

Be it known that I, HANS SCHWEITER, a Swiss citizen, residing at Horgen, in the Canton of Zurich, Switzerland, have invented a new and useful Improvement in Winding Machines, of which the following is a specification.

So called cross swifts, that is to say swifts for cross windings are already known. However in the hitherto known cross swifts the usual reciprocatory yarn guides are used, which in some cases engage by means of a stud in the slit of a laterally mounted drum.

Furthermore it is known in cross winding machines to use a yarn guide which is guided by a resilient rod and a drum having a driving slot.

The object of my invention is to enable yarn to be cross wound on a swift at an unusually great yarn speed whilst preventing to the greatest possible extent damage to the yarn. The achievement of this object is of great importance particularly for superfine spinning, for example silk spinning.

I attain this object by the means illustrated in the accompanying two sheets of drawings, wherein—

Figure 1 is an elevation,

Figure 2 a side view and

Figure 3 a detached plan view illustrating a constructional example of the invention.

Figure 4 is an elevation,

Figure 5 a plan view and

Figure 6 a side view in vertical section of a detail.

Referring to the drawings, 1 indicates the swift on which the two hanks 2 are being wound. A drum 3 is rotatably mounted above the swift and is provided with two driving slots 4 arranged in an inclined direction relative to the drum axis. A chain wheel 5 is fixed on the shaft of the drum 4 and is connected up by a chain 6 to a chain wheel 7 driven by a motor or the like. The drum is positively driven by this means. Each driving slot 4 is intended to impart to a thread guide 8 a reciprocatory motion. The rear side of each yarn guide 8 is so curved that it fits the curvature of the drum 3. A cylindrical member 9 pressed out of the rear wall of the hollow thread guide 8 engages in the corresponding driving slot of the drum. The front wall of the thread guide 8 is attached to the rear wall by an edge fold or seam and has a vertical open slot 10 for guiding the thread 11. The substantially circular yarn guide terminates at the bottom in a cord-like manner whereby the lower limiting edges 12 of the guide slot 10 are perpendicular to the drum axis and thereby prevent the thread from coming laterally out of the lower part of the slot 10 when the guide is reciprocated.

The front wall of the guide furthermore has an open horizontal slot 13 for reception of a guide rod 14 which guides the yarn guide in its reciprocatory movement and holds it against the drum 3. The front wall of the thread guide 8 is so curved that the thread automatically enters the slot 10 on the first to and fro movement of the yarn guide and that the resilient guide rod 14 is caused to bend slightly outwards when the thread guide is pushed upwards from below into its operative position and then snaps into the slot 13, whereby the placing of the thread guide on the drum is rendered considerably more easy. To remove the yarn guide from the drum it is only necessary to bend the rod 14 slightly outwards and remove the guide upwardly or downwardly. As the metal guide only weighs about two grammes, it can operate at very high speeds without knocks or noise, whereby the efficiency of the machine is considerably increased.

The guide rod 14 is adjustably carried relative to the drum 3 by two arms 16 depending from the drum bearings and by slotted plates 17.

18 are pointed arcuate-like guides which are attached to the machine frame at the front and which automatically guide the threads at their correct place of approach above the middle of the throw of the movable yarn guides.

Each thread guide 8 may have two vertical guide slots separated by a wall in case it is intended to guide two threads.

The said guides may be solid instead of hollow, assuming that they are very light.

It will be appreciated that by my invention the yarn or thread in a swift for cross winding is guided by means of a guide previously suggested for cross winding machines, the guide being guided on the one hand by a drum having a driving slot and

on the other hand by a resilient rod. A thread guide of this kind can be produced in a very light weight and it is therefore possible to reciprocate it at high speed without liberating large active forces.

I claim:—

1. A swift machine for cross windings comprising in combination, a rotatable swift; a drum having a driving slot; a resilient rod on the machine and a guide guided on the one hand by the drum and on the other hand by the resilient rod.

2. A swift machine for cross windings comprising in combination a rotatable swift, a drum mounted above the swift; positive driving means connected to the said drum; a resilient rod adjustably mounted longitudinally of the drum; driving slots in the drum; and thread guides engaging the said driving slots and the said rod and retained in their paths of movement by cooperation of the said drum and rod.

3. A swift machine for cross windings comprising in combination a rotatable swift, a drum mounted above the swift; positive driving means connected to the said drum; a resilient rod adjustably mounted longitudinally of the drum; driving slots in the drum; and thread guides engaging the said driving slots and the said rod and arcuate pointed guide wires for the threads to pass through before entering the said thread guides.

Signed at Zurich, in the Canton of Zurich, Switzerland, this 24th day of January 1924.

HANS SCHWEITER.

Witnesses:

A. F. Calcoen,

James R. Wilkins, Jr.