E. POHL.

THREAD WINDING MECHANISM.

APPLICATION FILED AUG. 19, 1905.

910,415.

Patented Jan. 19, 1909.

2 SHEETS—SHEET 1.

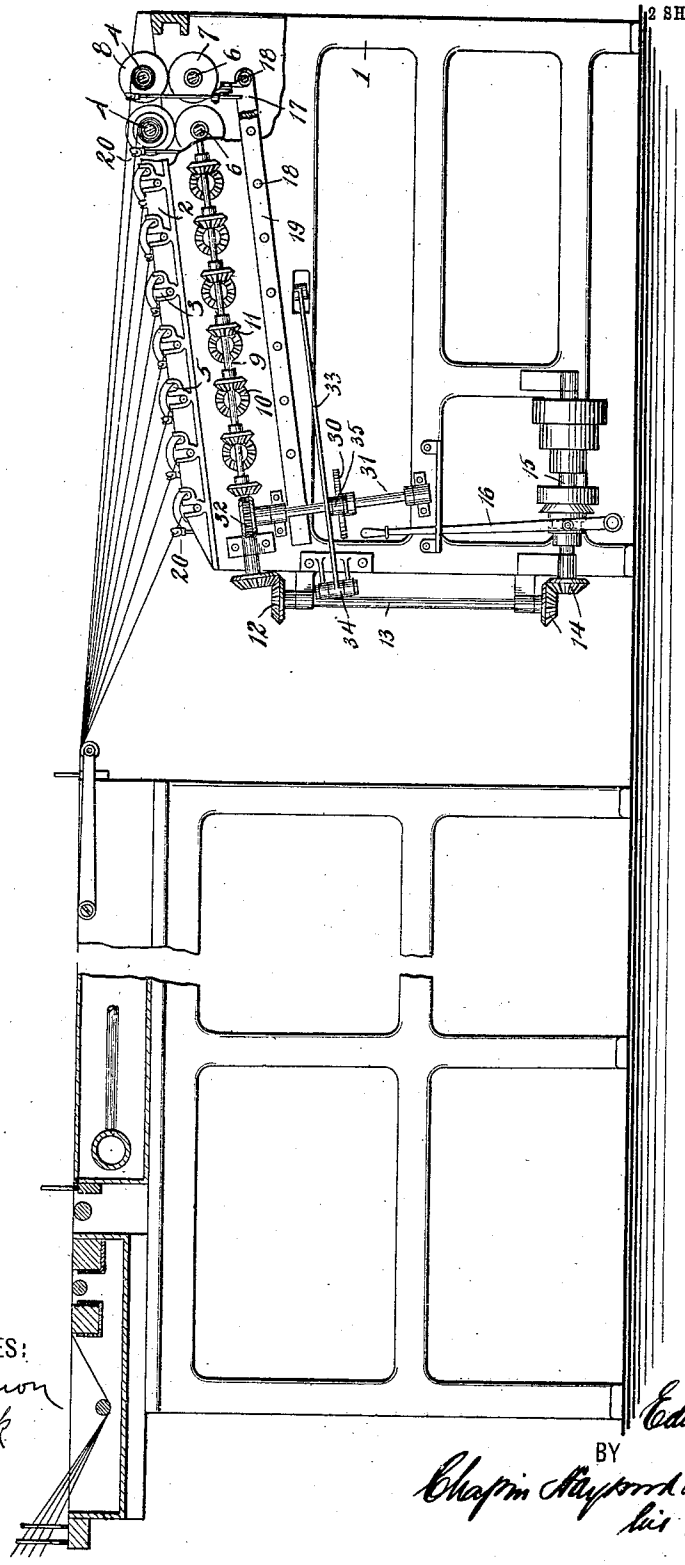


Fig. 1.

WITNESSES:

H. Lowcheon

R. Wanek

INVENTOR

Edward Pohl

BY

Chapin Hayford & Marble

his ATTORNEYS

THE NORRIS PETERS CO., WASHINGTON, D. C.

E. POHL.

THREAD WINDING MECHANISM.

APPLICATION FILED AUG. 19, 1905.

910,415.

Patented Jan. 19, 1909.

2 SHEETS—SHEET 2.

Fig. 2.

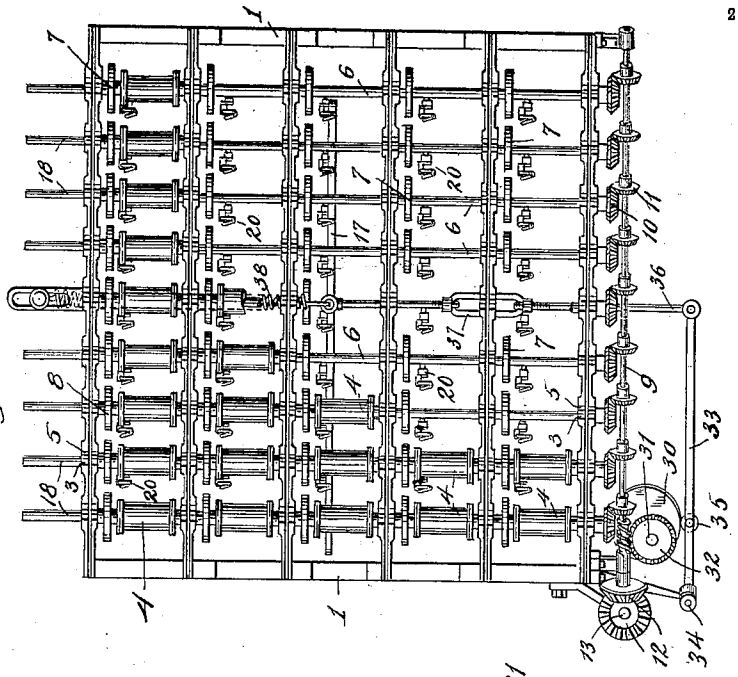


Fig. 4.

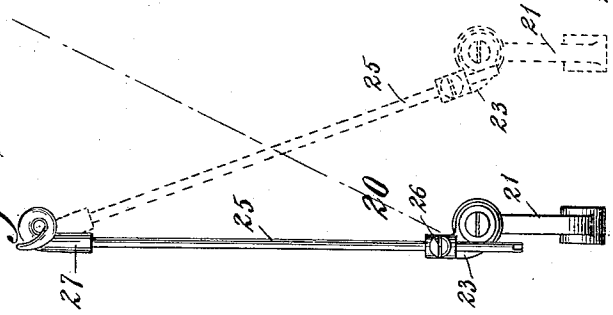


Fig. 3.

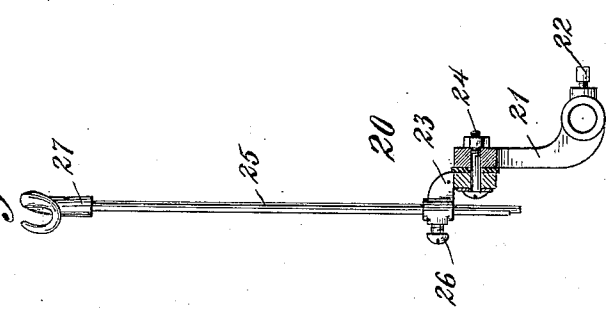
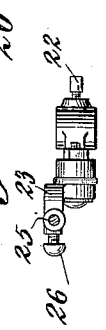


Fig. 5.



WITNESSES:

H. Crockett

R. Wanek.

INVENTOR

Edward Pohl.

BY

Chapin Rayford Marsh

their ATTORNEYS

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EDWARD POHL, OF PATERSON, NEW JERSEY.

THREAD-WINDING MECHANISM.

No. 910,415. Specification of Letters Patent. Patented Jan. 19, 1909.

Application filed August 19, 1905. Serial No. 274,824.

To all whom it may concern:

Be it known that I, EDWARD POHL, a subject of the Crown of Austria, and resident of Paterson, county of Passaic, State of New Jersey, have invented certain new and useful Improvements in Thread-Winding Mechanism, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to thread winding mechanism, and particularly to means for winding thread on a plurality of bobbins.

In carrying out my invention I provide a plurality of parallel drive shafts arranged in a plane, and having drive wheels adapted to engage the "whirls" of bobbins. The bobbins are disposed in a plurality of rows above the said drive shafts, and hence their axes will also be substantially in a plane. For guiding the threads to the bobbins I provide a thread guide comprising a plurality of thread guiding members, one for each bobbin, each thread guide individually adjustable in several directions, independently of the adjustment of any of the other said members. Preferably the thread guide frame is arranged immediately beneath the drive shafts, and the thread guiding members extend laterally therefrom and then upward between the drive shafts and the bobbins. This arrangement is exceedingly advantageous, for it leaves the spaces between the bobbins clear, right through the machine, except for the small space occupied by the individual thread guiding members, and, these thread guiding members being individually and independently adjustable, they may be adjusted one way and another so as to be clear of any particular spot as may be desired. The planes in which the axes of the bobbins and drive shafts are arranged are preferably inclined, so that, with the thread guiding members projecting but a small distance above the bobbins, the threads may be properly distributed and guided to their respective bobbins through the shortest and most direct course. Again, the upper part of the machine is substantially clear of mechanism, so that access may be readily had to every part of the machine.

My invention also consists in the particular form of thread guiding member *per se* comprising a hub, and adjustable means carried thereby, as will be more specifically pointed out hereinafter.

I will now proceed to describe mechanism embodying my invention, and will then point out the novel features in claims.

In the drawings: Figure 1 is a view in side elevation of winding mechanism embodying my invention, a portion thereof being broken away and in section, and showing in partial central vertical section and partial side elevation, a lustering apparatus from which the threads may pass to the winding mechanism. Fig. 2 is a top view of the winding machine, certain parts being broken away in order to show other parts. Figs. 3, 4 and 5 are, respectively, side, front and top views of a thread guiding member.

The winding mechanism as a whole comprises a machine having a main frame 1 and bobbin guide and supporting frames 2 suitably secured thereto. These frames 2 are arranged in pairs across the top of the machine, and each pair of frames has guiding slots 3 for receiving the spindles of bobbins 4 when the said bobbins are arranged in driving relation, and sockets 5 for receiving the spindles of the bobbins when they are to be held out of driving relation. Beneath the slots 3, and suitably journaled in the frame 1, are a plurality of drive shafts 6 carrying drive wheels 7. The whirls 8 of the bobbins 4 are arranged to rest upon the peripheries of the drive wheels 7, the spindles of the bobbins being guided freely in the slots 3 in the frame 2 adjacent the said whirl. The spindle at the opposite end of the bobbin rests in the bottom of the slot 3 of the other frame 2, the same forming a bearing therefor.

There are a number of pairs of frames arranged across the machine, and the shafts 6 are arranged beneath the said frames, being provided each with a drive wheel 7 between each pair of frames. Each shaft is therefore arranged to drive one row of bobbins, and, there being a plurality of such shafts 6 arranged with their axes in a plane, it follows that the said shafts are adapted for supporting and rotating a plurality of rows of bobbins, each row comprising a series axially in a line with each other, and the axes of all the rows arranged in a single plane. Suitable means is provided for simultaneously driving the several shafts 6, and, in the present instance, such means comprises a shaft 9, suitably journaled in bearings secured to the main frame 1, and miter gears 10 and 11 arranged upon the shafts 6 and the shaft 9, respectively. The shaft 9 is connected by means of bevel gears 12, a vertical shaft 13,

and other bevel gears 14 with the main drive shaft 15. Suitable clutch mechanism 16 may be employed for controlling the same, as is well known.

In order to properly guide the threads to their respective bobbins, and to move the thread backwards and forwards with relation to its bobbin so as to properly arrange the thread upon its bobbin, I have provided a traversing thread guide. This traversing thread guide comprises a frame composed of a plurality of parallel rods 18 secured together by a bar 17. The rods 18 are arranged immediately beneath the drive shafts 6, their axes lying in vertical planes with the axes of the said shafts. The ends of the rods 18 are suitably supported and guided in bearings 19 provided for the purpose.

Mounted upon the rods 18 are a plurality of individual thread guiding members 20, each comprising a hub portion 21 arranged to slide upon the rods and to be secured in position thereon by a set screw 22, an intermediate member 23 pivotally mounted upon the hub 21 by a bolt 24, whose axis is arranged at right angles to the direction of the rods which support the hubs, and a stem 25 adjustably mounted in said intermediate member 23 and secured in position by means of a set screw 26. At the upper end the stem carries a porcelain guide piece 27. The stem 25 is both vertically and rotatably adjustable in the member 23, as will be well understood, and, by the various adjustments provided for, it will be seen that universal adjustment is possible for the guide piece 27, that is, vertical, backwards and forwards, or sidewise in any direction. When the hub is located in proper position upon the rod supporting it, the guide may swing in any direction either longitudinal of the path of the traversing guide as a whole by means of the pivot 24, or transverse of that movement by moving the hub bodily around upon the rod. Again, should it be desired to move the hub along the rod without changing the relative position of the guide piece 27, this may be done, as shown in dotted lines in Fig. 4. It will be noticed that the hub and intermediate piece are offset from their point of support upon the rod 18, so that the stem will be permitted to rear its head upward between the drive shafts and bobbins. The proper height for the guide piece 27 may be readily regulated by means of the set screw 26. In order to reciprocate the said thread guide as a whole, I provide a cam or eccentric 30 mounted upon a substantially vertical shaft 31, said shaft driven through a worm and gear connection 32 from the shaft 9. A lever 33, pivoted at 34, is provided with a follower 35 engaging the said cam or eccentric, and is connected with the bar 17 of the traversing guide through a link connection 36. A turn buckle 37 is preferably arranged in the said link 36, whereby the position of the traversing thread guide with respect to the lever 33 may be readily adjusted. A spring 38 holds the cam follower 35 up to the face of the cam or eccentric 30, and acts to move the thread guide in one direction against the action of the cam or eccentric, moving it in the other.

The operation of the machine will be readily understood. The various threads, coming from any suitable source, pass through the guide pieces 27 of the individual guiding members and thence to the individual bobbins 4. The bobbins are rotated at a high speed by means of their driving mechanism, while the traversing thread guide is slowly reciprocated back and forth. The threads are thus wound up upon the bobbins. By the arrangement of the bobbins, it will be seen that an attendant, standing at any point around the machine, has a complete view of all the bobbins, and hence can watch them all and instantly detect if there is any fault in any one of them. If a thread breaks, a bobbin may be quickly removed, and, if desired, may be allowed to rest in the sockets 5, by which it will be maintained out of driving relation until the thread is once more properly connected, and it is again desired to operate same.

The preferable arrangement for the bobbins is in an inclined plane, as shown, and, by this arrangement, all the threads may be carried directly to their respective bobbins without interference with each other. The threads may come from any suitable source, but, in the drawings I have shown same as being drawn from an apparatus for lustering and finishing silk filaments or threads.

It will be quite apparent that the thread guide *per se* is capable of other uses than in the precise form of machine herein illustrated, and, though I have designed it particularly for use in connection with this machine, and so claim it, I do not wish to be limited to such use, as, obviously, it has a wider range of usefulness.

What I claim is:

1. In thread winding machinery, the combination with means for supporting a plurality of rows of bobbins, the axes of all said bobbins being arranged substantially in a plane, and a plurality of drive shafts, one for each row of bobbins, arranged beneath the said bobbins, of a traversing thread guide therefor comprising a plurality of parallel rods secured together to reciprocate beneath said drive shafts, and a plurality of individual thread guiding members each comprising a hub adjustably mounted upon said rods and a stem vertically and laterally adjustable upon said hub, said stem arranged to extend upward between said bobbins and drive shafts, substantially as specified.

2. In thread winding machinery, the combination with means for supporting a plu-

rality of rows of bobbins, the axes of all said bobbins being arranged substantially in a plane, and a plurality of drive shafts, one for each row of bobbins, arranged beneath the said bobbins, of a traversing thread guide therefor comprising a plurality of parallel rods secured together to reciprocate beneath said drive shafts, each of said rods arranged in a vertical plane with a drive shaft, a plurality of individual thread guiding members secured to said rods, and having offset portions arranged to project laterally therefrom and upward between said drive shafts and bobbins, to a point above the said bobbins, the thread guiding members each comprising a hub adjustably mounted upon the said rods, an intermediate member pivotally mounted upon the said hub, and a stem longitudinally adjustable in the said intermediate member substantially as specified.

3. In thread winding machinery, the combination with means for supporting a plurality of rows of bobbins, the axes of all said bobbins being arranged substantially in a plane, of a traversing thread guide therefor, including a rod, and individual thread guiding members each comprising a hub 21 arranged to be supported upon said rod and longitudinally adjustable thereon, an intermediate member 23 pivoted to said hub upon an axis at right angles to said longitudinal movement of adjustment, and a stem 25 longitudinally adjustable with respect to said intermediate member, substantially as set forth.

EDWARD POHL.

Witnesses:
D. HOWARD HAYWOOD,
C. F. CARRINGTON.