No. 676,335. Patented June 11, 1901.

W. E. MOFFATT.

SHELL HOLDER FOR THREAD WINDING MACHINES.

(Application filed Nov. 20, 1900.)

(No Model.)

Fig. 1

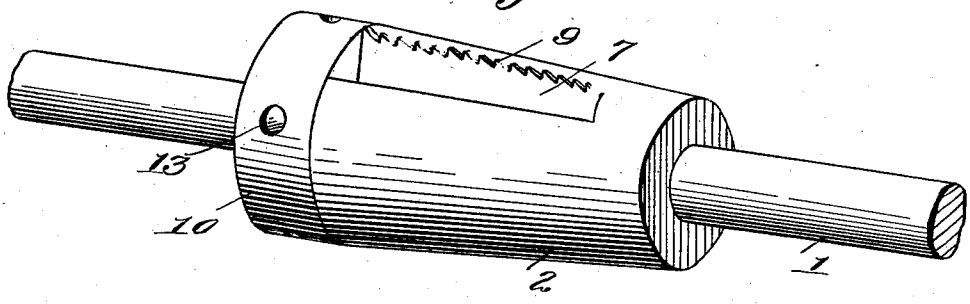


Fig. 2.

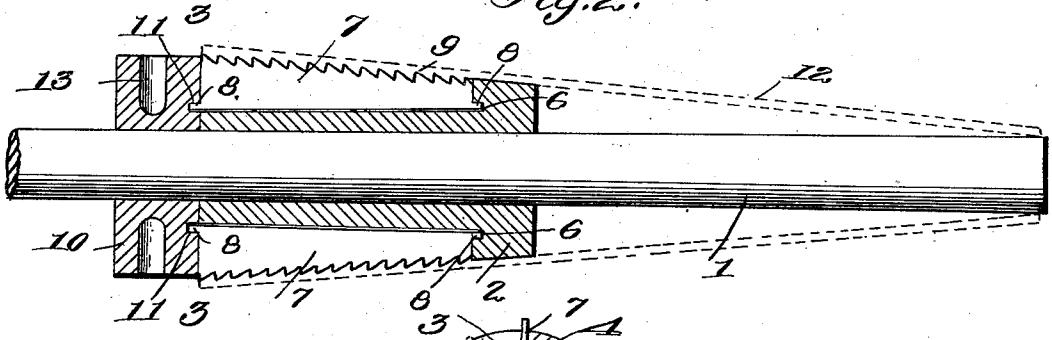


Fig. 3.

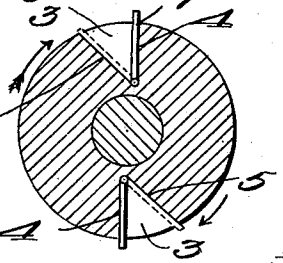
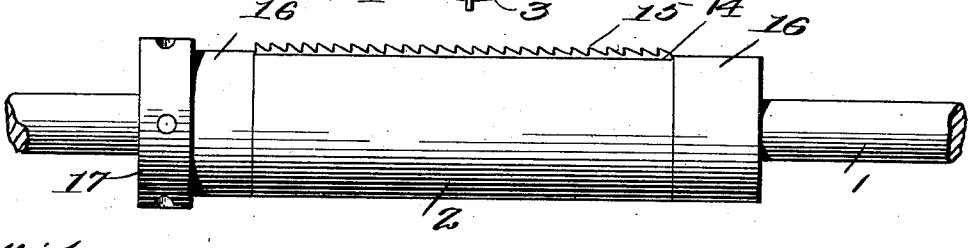


Fig. 4.



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SHELL-HOLDER FOR THREAD-WINDING MACHINES.

SPECIFICATION forming part of Letters Patent No. 676,335, dated June 11, 1901.

Application filed November 20, 1900. Serial No. 37,136. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM ERSKINE MOFFATT, a citizen of the United States, residing at Charlotte, in the county of Mecklenburg and State of North Carolina, have invented new and useful Improvements in Shell-Holders for Thread-Winding Machines, of which the following is a specification.

My invention relates to an improved shell-holder for thread-winding machines.

It is the general object of my invention to provide the core or mandrel of a spindle with improved means for automatically engaging the shell inserted on the core and preventing the shell from slipping or rotating thereon or from moving laterally relative thereto.

Further objects of the invention relate to details of construction whereby I am enabled to provide a shell-holder which shall be simple in construction, quick and reliable in operation, and one which may be manufactured cheaply.

To enable my invention to be clearly understood, I have illustrated the same in the accompanying drawings, in which—

Figure 1 is a perspective view of a core or mandrel adapted for cops or cone-shells and showing my invention applied thereto. Fig. 2 is a longitudinal sectional view through the core. Fig. 3 is a cross-section through the same, and Fig. 4 is a side elevation of a holder for tubular shells.

The numeral 1 indicates the spindle, and 2 a core secured thereon and having a conical shape, as shown. Located on diametrically opposite sides of this core and extending longitudinally thereof are two relatively deep grooves 3. Each of these grooves has one of its walls or sides 4 radial to the axis of the core, while the other wall or side 5 of the groove diverges from the opposite wall at a considerable angle, as shown. The grooves 3 extend to within a short distance of the smaller end of the core 2, and the end wall of each groove, near the bottom thereof, is provided with a small hole or recess 6, forming a pivot-bearing.

The numeral 7 indicates metal blades extending substantially throughout the length of the core, one of which is mounted in each groove 3 in a manner to be described. Each of these blades is provided at opposite ends with pivot-pins 8, located at the bottom or inner edge of said plates. The outer edge of each of these plates is provided with teeth 9 in the manner of a saw.

The numeral 10 indicates a circular collar or head of the diameter of the larger end of the core and having on its inner side two small holes or recesses 11, corresponding to the recesses 6 in the end walls of the grooves 3.

In securing the blades in position a pivot-pin 8 of each blade is inserted in a recess 6. The head or collar 10 is then brought to bear against the larger end of the core in such manner that the recesses 11 of said head shall receive the pins 8 at the opposite ends of said blades. The collar 10 may be secured in place in any suitable manner. As will be seen, the toothed edge of each blade extends at an angle to the opposite straight edge, so that said blades are wider at one end than at the other. Thus the toothed edge of these blades will extend in planes parallel to the periphery of the core. The blades 7 are mounted in the core to turn readily upon their pivots. The width of these blades is such that when they are turned against the side 4 of slot 3, which side may be termed the "straight" side, the teeth 9 will project beyond the periphery of the core to the extent of the height of said teeth, while if the blades be turned against the opposite or inclined side 5 of the groove only the pointed ends of said teeth will project beyond the periphery of the core. The former position is shown by the full lines in Fig. 3 and the latter position by the dotted lines in said figure. The cop-tube or cone-shell is also shown by dotted lines in Fig. 3 and is indicated by the numeral 12.

The operation of the device will be plain. Normally the blades are in the position shown by dotted lines in Fig. 3—that is to say, the points of the teeth barely extend beyond the periphery of the core. The cone-shell 12 is now inserted over the core 2, its smaller end being supported by and embracing the spindle 1, as shown by the dotted lines in Fig. 2, and pressed firmly thereon. If the shell be now turned in the direction of the arrow shown in Fig. 3, the engagement thereof with the teeth of blades 7 will raise said blades

from the inclined side 5, and their teeth will thereby be caused to project more and more from the periphery of the core until they have been brought to the position shown in full lines in Fig. 3. In this position the teeth 9 project the greatest distance from the core and pierce the inner wall of the shell on opposite sides, so that said shell will be held firmly in place. By reference to Fig. 1 it will be seen that the teeth 9 are "set" or inclined toward the larger end of the core. The purpose of this is to resist longitudinal or lateral movement of the shell relative to the core in the direction of the smaller end, and thereby prevent the shell from being withdrawn from the core. In order to remove the shell, I place a suitable implement in one of several holes 13, which are arranged about the collar 10, so that the spindle may be held from rotating, and then turn the shell in a direction opposite to that indicated by the arrow in Fig. 3. This rotation of the shell will carry the blades to an inclined position, so that practically the teeth 9 no longer engage the inner sides of the shell, and the latter may then be readily withdrawn.

In Fig. 4 I have shown my invention applied to a cylindrical core adapted to receive tubular shells. In this case I preferably provide only one groove 14 and blade 15, and the groove is closed at the ends by means of heads 16, having bearings for the blade, the inner head having an annular projection 17 acting as a stop for the shell and having holes 13 for the purpose described. The teeth of the blade 14 are preferably inclined or set toward the inner end of the core, so that they will bite into the tube and resist any withdrawing movement on the part of the shell; but this is not so essential in the case as with the core for cone-winding.

It is obvious that three or more blades may be employed about the core without departing from the spirit of my invention.

Having thus fully described my invention, what I claim as new is—

1. A shell-holder for thread-winding machines comprising a circular core having a longitudinally-disposed flat metal blade provided on its inner edge with bearings, and eccentrically and pivotally mounted in the core on said bearings in a manner to have its outer edge progressively project beyond the periphery of the core in a movement of the blade on its bearings toward a position radial to the axis of the core, and means for preventing the movement of the blade beyond a position radial to the axis of the core, substantially as described.

2. A shell-holder for thread-winding machines comprising a core having a peripheral, longitudinal groove, a longitudinally-disposed flat metal blade provided at its inner edge with bearings, pivotally mounted in said groove in a manner to have its edge project beyond the periphery, and means for preventing the movement of the blade in one direction beyond a position radial to the axis of the core, substantially as described.

3. A shell-holder for thread-winding machines comprising a circular core having a peripheral, longitudinal groove, said groove having a radial and an inclined wall, and a flat metal blade pivotally mounted on end bearings in said groove in a manner to have its outer edge project beyond the periphery, substantially as described.

4. A shell-holder for thread-winding machines comprising a circular core having a peripheral, longitudinal groove, said groove having a radial and an inclined wall, and a blade pivotally mounted in said groove in a manner to have one edge project beyond the periphery, said projecting edge being saw-toothed, substantially as described.

5. A shell-holder for thread-winding machines comprising a conical core having two or more peripheral, longitudinal grooves, each of said grooves having a radial and an inclined wall, and a blade pivotally mounted in each groove in a manner to have one edge project beyond the periphery, said projecting edge being saw-toothed and the teeth of said blade being set or inclined toward the larger end of the core, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM ERSKINE MOFFATT.

Witnesses:
C. N. G. BUTT,
A. R. STEPHEN.