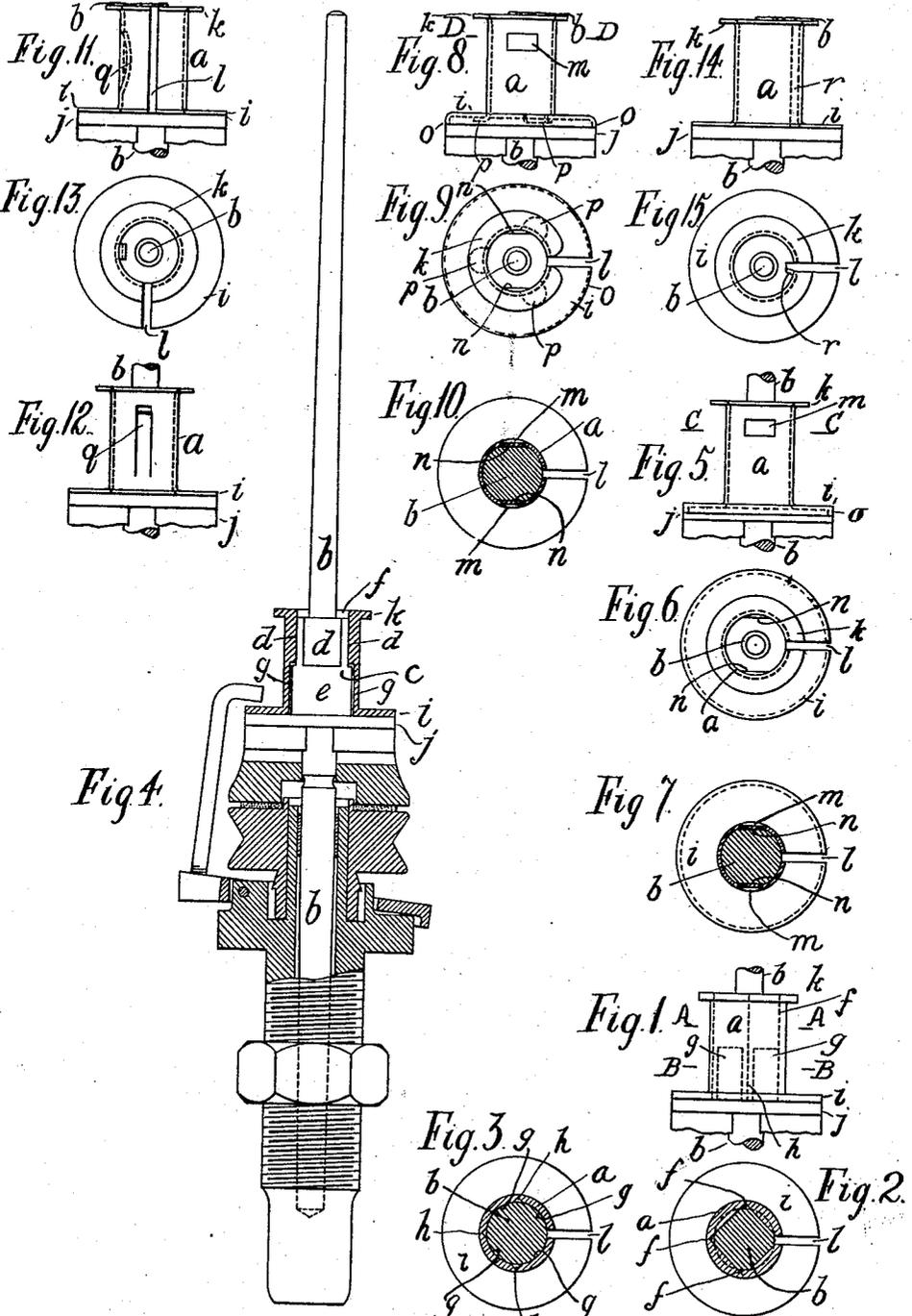


A. SEELEY,
 APPARATUS FOR ATTACHING YARN TO SPINDLES.
 APPLICATION FILED MAR. 16, 1916.

1,274,792.

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Inventor:
Alfred Seeley
 By *attorneys*
Thomson & Howard

UNITED STATES PATENT OFFICE.

ALFRED SEELEY, OF ROCHDALE, ENGLAND.

APPARATUS FOR ATTACHING YARN TO SPINDLES.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALFRED SEELEY, machine maker, a subject of the King of the United Kingdom of Great Britain and Ireland, and resident of Melrose House, Bentmeadows, Rochdale, in the county of Lancaster, England, have invented new and useful Improvements in Apparatus for Attaching Yarn to Spindles, of which the following is a specification.

This invention relates to detachable sleeves, for holding yarns or threads attached to spindles by receiving coils of yarn or thread wound below or beyond the ends of completed cops or bobbins or other bodies of or holding yarn so that after the completed cops or bobbins or other bodies have been doffed from the spindles the yarns or threads remain attached to the spindles in readiness for the winding of fresh cops, bobbins or other bodies to be begun as soon as the travelers rails or other yarn guiding means are brought to proper position and either forthwith in the case of yarns or threads wound upon "bare" spindles or after the application of fresh or empty paper or other tubes or bobbins or bodies to the spindles in other cases.

In this method of attaching yarns or threads to spindles the portions of yarn or thread wound upon the parts of or provided upon the spindles to receive them are usually allowed to accumulate thereon and removed from time to time.

In this method use has heretofore been made of tubes or collars or braids applied to spindles to be driven by friction against parts thereof and also of tubes or collars or braids engaged with bobbins or spools so as to turn therewith and so with the spindles carrying such spools or bobbins or connected with spindles as by being fixed upon and so made to turn with them, in order that portions of yarn or thread may be wound upon such tubes or collars or braids as aforesaid and in some cases such tubes or collars or braids have been removable from the spindles and some of such tubes or collars or braids have been formed of sheet metal.

This invention consists in detachable sleeves for the purpose aforesaid which are provided with gaps or nicks extending entirely through them from end to end and from their interior passages through and to

the exterior circumferences of their circumferential portions and are also provided with parts to enter into positive engagement with driving parts upon the spindles and in comparison with the devices heretofore provided for a like purpose are more easily stripped of accumulations of yarn or thread by reason of allowing free passage of blades for cutting off the accumulations of yarn or thread and are more readily applied to and taken off the spindles, although when applied to the spindles, they revolve with certainty along with the parts to which they are applied.

In the accompanying drawings in which the same letters of reference are employed to indicate corresponding parts in all the figures, examples of sleeves provided according to this invention are shown by way of illustration.

Figure 1 is a side elevation of one form of sleeve and Figs. 2 and 3 are sections taken respectively on the planes indicated by the lines A A and B B of Fig. 1, and Fig. 4 shows a sleeve of this form in longitudinal section applied to a spindle of a warp pirning machine. Fig. 5 is a side elevation and Fig. 6 is a plan of a second form of sleeve and Fig. 7 is a section taken on the plane indicated by the line C C of Fig. 5. Fig. 8 is a side elevation and Fig. 9 is a plan of a third form of a sleeve and Fig. 10 is a section taken on the plane indicated by the line D D of Fig. 8. Figs. 11 and 12 are side elevations at right angles to one another and Fig. 13 a plan of a fourth form of sleeve. Figs. 14 and 15 are a side elevation and plan of a fifth form of sleeve.

Sleeves provided according to this invention are preferably made light and to fit easily upon the spindles with which they are intended to be used so that they may be easily removed from and applied to spindles even though such spindles should only just be within practicable reach of the operatives in charge of the machines in which the spindles are used.

Sleeves provided for use with spindles according to this invention may be made of thin metal cast, stamped or spun or otherwise brought into shape or built up of parts welded, brazed or otherwise secured together. The sleeves may be made to engage the spindles by being provided with inden-

tations one or more in each case to engage into flats or notches formed in the spindles or may be provided with spring tongues or prongs to enter nicks or notches or holes in the spindles or over the edges of flanges or plates upon the spindles or the portions of metal at the sides of the gaps or nicks may be made to enter nicks or notches in the spindles. Each sleeve may be adapted to engage the spindle with which it may be used at one place or two or more as may be desirable in each case.

Sleeves provided according to this invention may be provided with parts to engage bobbins or other bodies to be mounted upon the spindles with which the sleeves may be used.

Sleeves provided according to this invention may be made in different forms according to the shape and construction of the spindles on which they are to be applied.

The five varieties of sleeve shown in Figs. 1 to 15 are of forms advantageous for application to the spindles of warp pining machines.

In the sleeve shown in Figs. 1, 2, 3 and 4, *a* is a barrel adapted to pass easily upon the blade *b* of the spindle shown in Fig. 4 which is formed with a collar *c* to receive the sleeve. The collar *c* is provided with four flat faces *d* at equal intervals around its upper part, three being shown, and is circular in its lower part *e* and the barrel *a* is formed internally with a square hole *f* in its upper part and with cylindrically curved walls *g* in its lower part, the tool used in forming the angles of the square hole *f* being made for convenience to form grooves *h* in the wall of a circular hole, and the walls of the square hole *f* and the cylindrically curved walls *g* fitting easily against respectively the flat faces *d* and the circular part *e* of the collar *c*. The barrel *a* is formed with a lower flange *i* to bear on the flange *j* of the spindle blade *b* and with an upper flange *k* to serve as a stop to limit the distance to which paper tubes or the like can be pushed on to the spindle blade *b*. A nick *l* is formed through the barrel *a* at one side and through each of the flanges *i* *k* to allow passage to the blade of a knife or other tool to be used in cutting threads from the barrel *a*.

Yarn or thread may be wound upon the barrel *a* before the commencement of a pirn and between the completion of one pirn and the commencement of the next and the accumulation of yarn or thread on the barrel *a* may be cut off from time to time.

In the sleeve shown in Figs. 5 and 6 and 7, the barrel *a* and flanges *i* *k* are all formed of thin metal stamped, spun or otherwise shaped and the barrel *a* is formed with two indentations *m* forming projections *n* in its interior in the form of chords of a circle

to engage corresponding flat places formed in the collar or other part provided or formed to receive the sleeve on the spindle to which it is to be applied for example any pair of opposite flat faces *d* on the collar *c* of the spindle blade *b* shown in Fig. 4. The lower flange *i* is provided with a downwardly turned rim *o* around its circumference.

In the sleeve shown in Figs. 8, 9, and 10 the barrel *a* and upper flange *k* are formed of one piece of thin metal stamped, spun or otherwise shaped and the lower flange *i* is formed of another piece of metal stamped, spun or otherwise shaped with a hole to receive the barrel *a* and a downwardly turned rim *o* around its circumference. The barrel *a* is formed with indentations *m* like those of the barrel *a* shown in Figs. 5, 6 and 7 and also with ears *p* by which the barrel may be retained in the hole of the flange. The barrel *a* and flange *k* and the flange *i* are formed with nicks *l* which are brought together when the barrel *a* is secured to the flange *i* so as to serve as one nick *l* for the passage of a knife blade or other tool for cutting threads from the sleeve.

The sleeve shown in Figs. 11, 12 and 13 is similar to that shown in Figs. 5, 6 and 7 except in that it has no indentations *m* or rim *o* but is provided with a spring tongue *q* at one side cut on three sides from and remaining attached by its fourth side to the metal of the barrel *a*. The spring tongue *q* is intended to engage by pressing against a flat or entering a groove upon or in the collar or other part of or provided upon the spindle blade to receive the sleeve.

The sleeve shown in Figs. 14 and 15 is similar to that shown in Figs. 5, 6 and 7 except in that it has no indentation *m* or rim *o* but is provided with an inwardly directed projection *r* formed on the barrel *a* by part of the metal displaced in the formation of the nick *l* being turned inward, the projection *r* being intended to enter a groove in the collar or other part of or provided upon the spindle blade to receive the sleeve.

The portions of yarn or thread wound upon sleeves provided according to this invention may be removed therefrom from time to time as may be convenient as by the use of knives or hooks with cutting edges.

If, with a number of similar spindles in a machine each provided with a detachable sleeve provided according to this invention, a similar sleeve or similar sleeves in excess of the number of spindles be provided and especially if there be provided twice as many sleeves as there are spindles, the stopping of a spindle or spindles for the stripping of yarn or thread from the sleeve need not be longer than the time necessary for the removal of one sleeve or group or set

of sleeves and the application of another from and to a spindle or group or set of spindles.

What I claim is:

- 5 1. A detachable sleeve of the character described for application to a spindle and comprising circumferential portions having an interior passage and a gap or nick which extends entirely through the sleeve from end
10 to end and from the interior passage through the circumferential portions to the circumferences thereof and having engaging means for positively engaging corresponding engaging means upon the spindle.
- 15 2. A detachable sleeve of the character described for application to a spindle and comprising circumferential portions having an interior passage and a gap or nick which extends entirely through the sleeve from end
20 to end from the interior passage through the circumferential portions to the circumferences thereof and having engaging faces in its interior parts adapted to bear against corresponding engaging faces upon the
25 spindle.
3. A detachable sleeve of the character described for application to a spindle and comprising circumferential portions having

an interior passage and a gap or nick which extends entirely through the sleeve from end
30 to end and from the interior passage through the circumferential portions to the circumferences thereof and having formed within the upper part of the interior passage engaging faces adapted to enter into positive
35 engagement with corresponding engaging faces upon the spindle.

4. A spindle with engaging faces and a detachable sleeve for application to such spindle and comprising circumferential portions having an interior passage to receive
40 part of the spindle and a gap or nick which extends entirely through the sleeve from end to end and from the interior passage through the circumferential portions to the
45 circumferences thereof and having engaging faces in its interior parts adapted to bear against the engaging faces upon the spindle.

In testimony that I claim the foregoing as my invention, I have signed my name in
50 presence of two witnesses this twenty-fourth day of February 1916.

ALFRED SEELEY.

Witnesses:

GEORGIANA F. RHIND,
HOWARD CHEATHAM.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."