

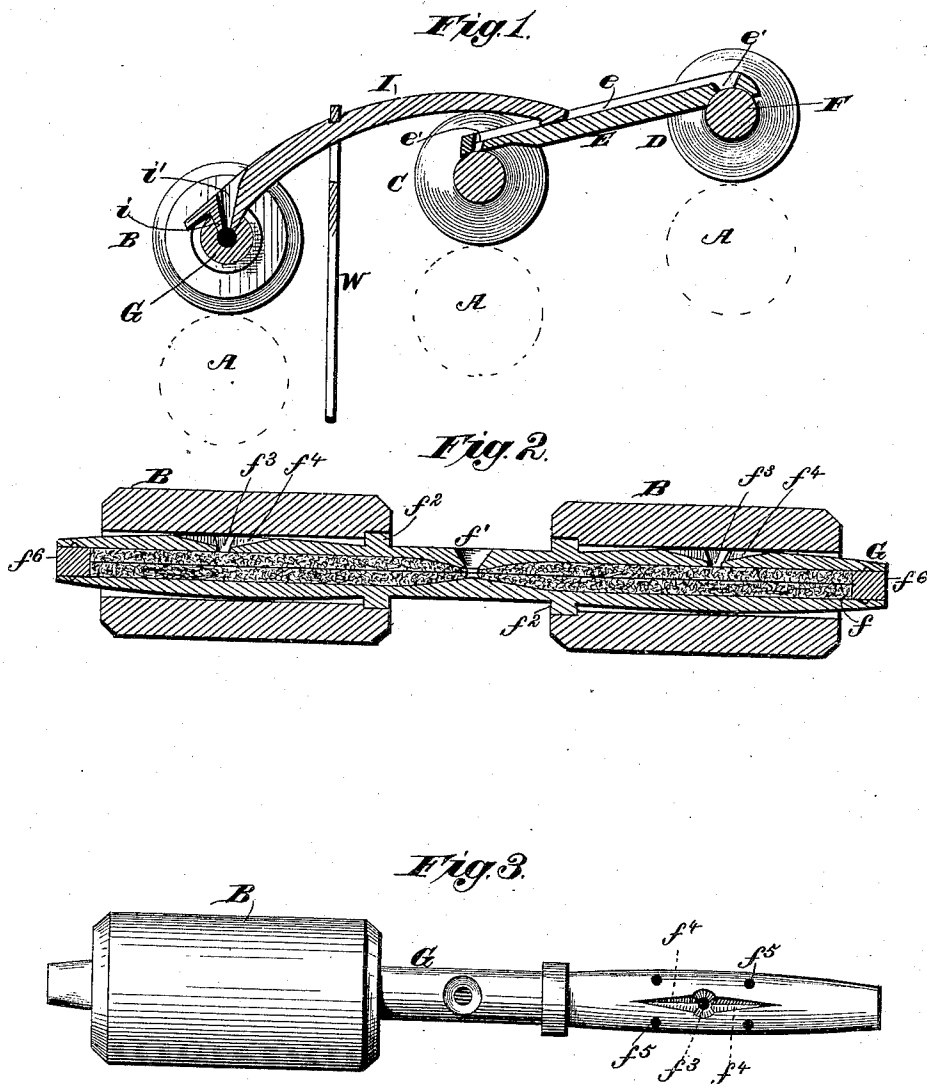
(No Model.)

C. S. TUTTLE & F. TWITCHELL.

DEVICE FOR OILING THE ARBORS OF SHELL ROLLERS.

No. 313,133.

Patented Mar. 3, 1885.



Witnesses.

Robert Everett
Geo. W. Rea

Inventors.

Charles S. Tuttle.
Franklin Twitchell.

By

Charles B. Tilden
Atty.

UNITED STATES PATENT OFFICE.

CHARLES S. TUTTLE AND FRANKLIN TWITCHELL, OF NASHUA, N. H.

DEVICE FOR OILING THE ARBORS OF SHELL-ROLLERS.

SPECIFICATION forming part of Letters Patent No. 313,133, dated March 3, 1885.

Application filed January 15, 1885. (No model.)

To all whom it may concern:

Be it known that we, CHARLES S. TUTTLE and FRANKLIN TWITCHELL, citizens of the United States, residing at Nashua, in the county of Hillsborough and State of New Hampshire, have invented certain new and useful Improvements in Devices for Oiling the Arbors of Shell-Rollers, of which the following is a specification, reference being had to the accompanying drawings.

Our invention relates to spinning mechanism, and has for its purpose to provide novel devices for oiling the arbors of shell-rollers, railway-heads, and drawing-frames, whereby the consumption of lubricating-oil is largely diminished, the bearings are properly and evenly supplied, the distribution is proportioned to the speed of the roll, and the necessity of frequent oiling is avoided.

The invention consists in the several novel features of construction and combinations of parts hereinafter fully described, and finally pointed out in the claims annexed to this specification.

Referring to the drawings forming part of this application, Figure 1 is a vertical transverse section of a spinning-frame containing drawing-rolls. Fig. 2 is a vertical axial section of the arbor with the shell-rolls mounted thereon. Fig. 3 is a plan view of the arbor shown in Fig. 2, one of the shell-rollers being mounted in place thereupon and the other removed.

In the said drawings, the reference-letter A indicates the lower steel rolls, to which rotation is imparted, and which are of any well-known and suitable construction. Upon these rolls rest in the usual form of arrangement the upper rolls, B, C, and D, whereof the two latter are connected by the saddle E, having near one end a concave seat, which lies upon the arbor F or the neck of the shaft carrying the rolls. A longitudinal channel or slot, e , is cut in the back of the saddle, terminating at each extremity in an aperture, e' , which opens into the concave seat lying upon the shaft.

The letter G denotes the arbor carrying the shell-rollers B. It is made of steel, and is drilled from end to end, forming an axial chamber, f , which is of diminished diameter at the central portion, as shown in Fig. 2. At this

point is formed an aperture, f' , which communicates with both parts of the chamber f . Upon each side of this central opening, at a suitable distance therefrom, is formed a collar, f^2 , which is received by a recess in the end of the shell-roller, and by which lateral displacement in one direction is avoided, and the oil prevented from flowing out upon the surface of the arbor. Between these collars and the extremities of the arbor the latter is slightly increased in diameter, this dimension being greatest at or about at the central portions of those bearing surfaces upon which the shell-rolls rest. From these points the diameter decreases very slightly in both directions.

Between the collars f^2 and the ends of the arbor are formed openings f^3 , lying in substantially the same longitudinal line as the central opening, f' , and in the periphery of the arbor are formed slots or channels f^4 , upon each side of and communicating with the aperture f^3 . Each of these slots is in the form of a notch cut longitudinally in, but not through, the wall of the arbor, and having its bottom inclined downward from each extremity toward the opening f' . Not far from the ends of the channel f^4 are formed two, four, or more openings, f^5 , of small diameter, and communicating with the chamber f .

Upon the arbor G rests a front saddle, I, having near one end a nipple, i , which penetrates the aperture f' and sits upon the arbor around it. A perforation, i' , is cut through the saddle and the nipple, thereby giving communication with the chamber f . The saddle I is suitably curved, and its other end rests upon the saddle E at or near its central part. A weight, W, is hung upon the notched back of the saddle I in the ordinary manner.

The axial chamber f is in use filled with any suitable fibrous packing, and its ends are closed by plugs f^6 . Oil is supplied through the central opening, f , in suitable quantities, and is drawn by the rotation of the shell-roller through the openings f^5 in the arbor, giving perfect lubrication to the bearing-surfaces. The revolution of the shell-roller naturally tends to carry the oil to the point upon the arbor having greatest diameter, where it is caught by the notch f^4 and returned through the aperture f^3 to the chamber con-

taining the packing. As this supply is constant in quantity, the lubrication will be equal at all times, and as the oil will be drawn out in quantities proportioned to the speed of the shell-roll, the lubrication will always be proportioned to the necessities of the case. Moreover, as the oil is all carried up and returned to the packing-chamber, save the slight film between the bearing-surfaces, it will readily be seen that the surplus is neither wasted nor exposed to the atmosphere, whereby it will thicken and become foul. We not only thereby effect a very great economy in the consumption of oil, but save the time and attention of the attendant, who has heretofore been required to frequently clean and oil these bearings. The saddle E is oiled at the upper end by a drop from a can, part of which flows down the channel *e* and oils the lower seat by passing through the aperture *e'*.

The chamber in the arbor F is contracted at its central part beneath the oil-opening *f'*, which virtually divides the oil-chamber into two parts. The object of this construction is to prevent the oil from flowing into one end of the arbor should the latter be inclined, and leaving the other end dry.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a spinning-frame or other mechanism, an arbor for a shell-roller, having the diameter of its bearing portion increased from each end toward an intermediate point, where it may be greatest, and provided with an aperture at or near such point, and with longitudinally downwardly-inclined channels opening into said aperture, an axial chamber being formed communicating with said aperture, and with small perforations cut at a suitable distance upon each side of the latter, substantially as described.

2. In a spinning-frame or other mechanism, an arbor for a shell-roller having an axial chamber, a central aperture opening into it, collars upon each side of said aperture, bearing portions between said collars and the ends of the arbor, each having a tapered or dimin-

ished diameter from a point at or near the center toward each end, apertures formed in each bearing portion at or near such point of greatest diameter, longitudinal channels downwardly inclined toward and opening into said apertures, and small oil-openings upon each side of said apertures, substantially as described.

3. In a spinning-frame or other mechanism, the combination, with an arbor having a central packing-chamber filled with suitable fibrous packing, of shell-rollers mounted upon said arbor near its ends, which are tapered in two directions, and a saddle having a perforated nipple seated in a central aperture which enters the packing-chamber, said arbor being provided at or near its points of greatest diameter with a longitudinal channel downwardly inclined from each end toward its center, and opening into an aperture which enters the packing-chamber, oil-openings being formed at a suitable distance upon each side of such aperture, substantially as described.

4. In a spinning-frame or other mechanism, the combination, with the arbor G, having the collars *f*², the doubly-tapered bearing portions provided with channels *f* and apertures *f*³, of a packing contained in a central chamber, *f*, the shell-rolls B, the saddle I, having a perforated nipple, *i*, seated in an aperture, *f'*, in the arbor, and the saddle E, upon which its other end rests, oil-openings *f*³ being formed in the arbor, substantially as described.

5. In a spinning-machine, an arbor carrying a shell roll or rolls, said arbor having an axial oil-chamber provided with a contraction at the central portion, and a feed-opening located in the center of the contracted part, substantially as specified.

In testimony whereof we affix our signatures in presence of two witnesses.

CHARLES S. TUTTLE.
FRANKLIN TWITCHELL.

Witnesses:

ROSWELL T. SMITH,
B. B. WHITEMORE.