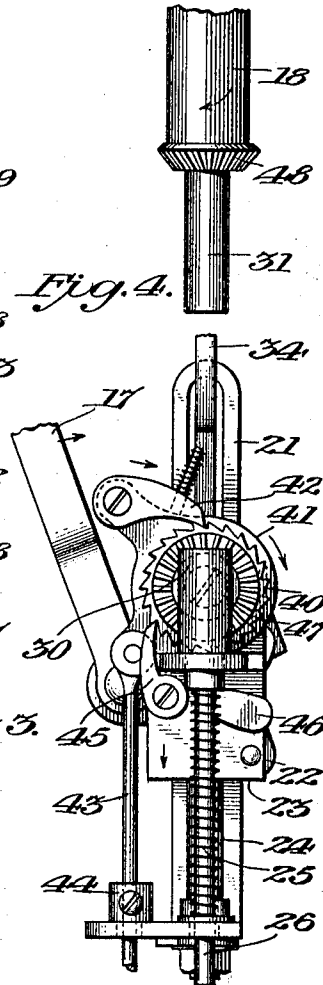
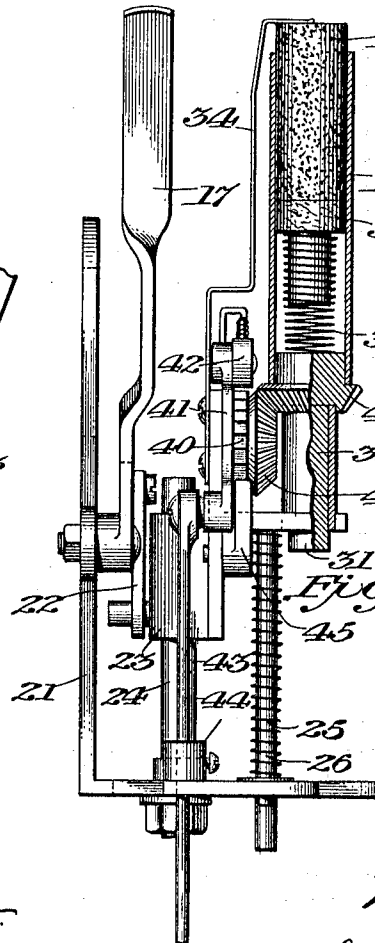
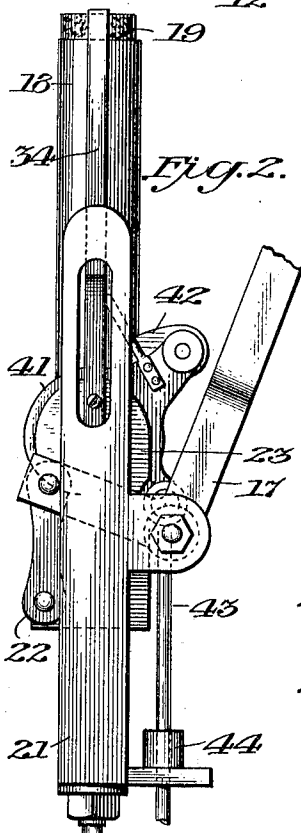
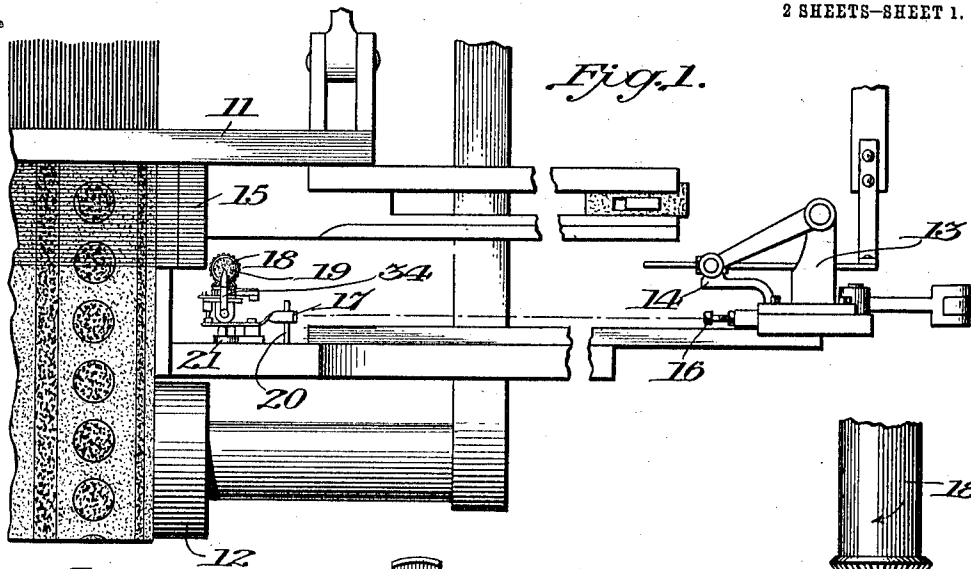


W. H. D. FELTON.
 PILE WIRE LUBRICATING DEVICE.
 APPLICATION FILED APR. 26, 1909.

1,051,720.

Patented Jan. 28, 1913.

2 SHEETS—SHEET 1.



Witnesses:

C. F. Messer.

E. M. Allen

Inventor:
 William H. D. Felton.

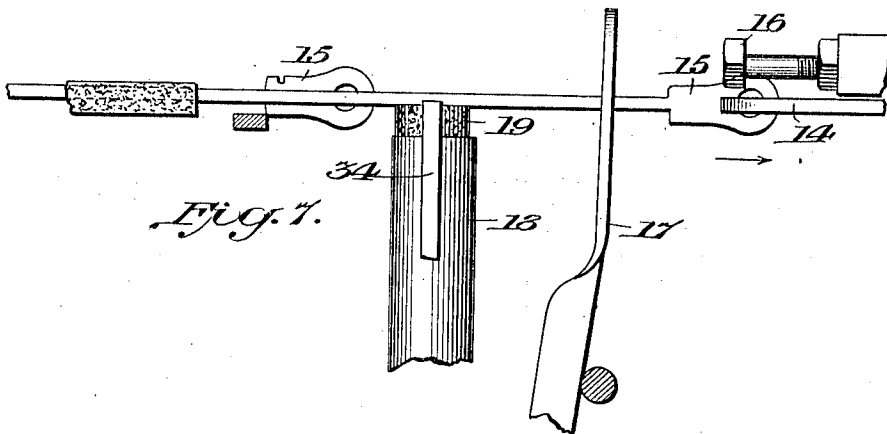
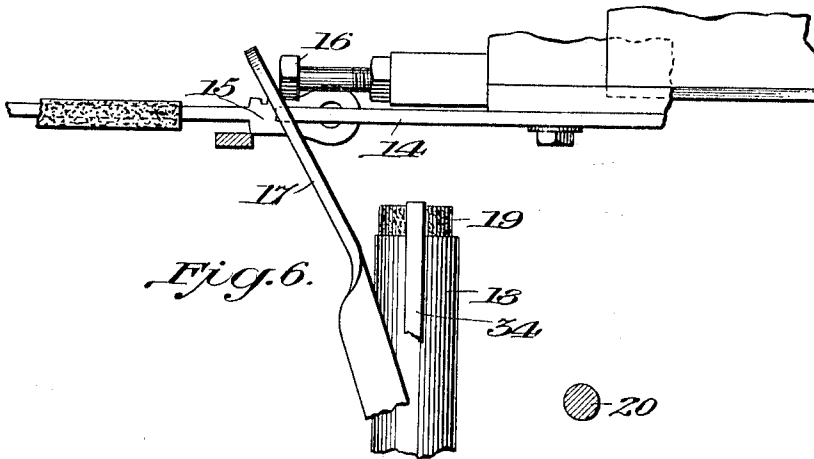
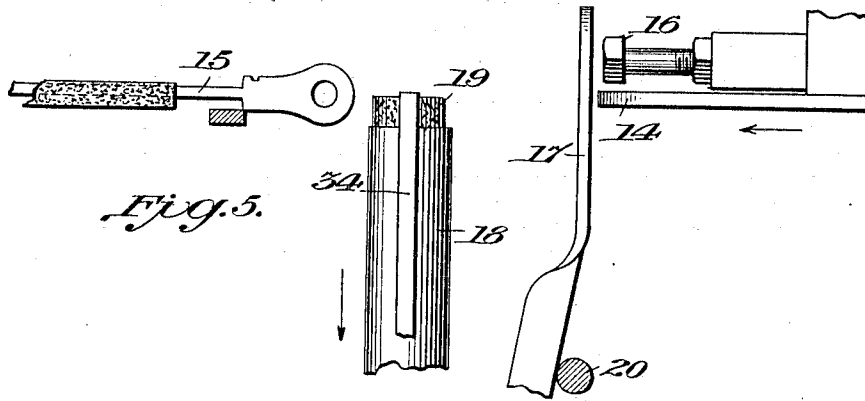
by Attorneys.
 Southgate & Southgate

W. H. D. FELTON.
 PILE WIRE LUBRICATING DEVICE.
 APPLICATION FILED APR. 26, 1909.

1,051,720.

Patented Jan. 28, 1913.

2 SHEETS-SHEET 2.



Witnesses:

C. F. Mason.

E. M. Allen.

Inventor:
 William H. D. Felton.
 by Attorneys

Southgate & Southgate.

UNITED STATES PATENT OFFICE.

WILLIAM H. D. FELTON, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO MATTHEW J. WHITTALL AND MATTHEW P. WHITTALL, OF WORCESTER, MASSACHUSETTS, AND JAMES E. WHITIN, OF UXBRIDGE, MASSACHUSETTS, TRUSTEES FOR THE WHITTALL ASSOCIATES.

PILE-WIRE-LUBRICATING DEVICE.

1,051,720.

Specification of Letters Patent.

Patented Jan. 28, 1913.

Application filed April 26, 1909. Serial No. 492,111.

To all whom it may concern:

Be it known that I, WILLIAM H. D. FELTON, a subject to the King of England, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Pile-Wire-Lubricating Device, of which the following is a specification.

This invention relates to the lubrication of the pile wires of looms for weaving carpets and the like.

The invention is applicable to all forms of looms in which a pile is raised whether the pile wire is provided with a knife for cutting the pile or not. Heretofore these pile wires have been lubricated in various ways, but chiefly by means of a liquid lubricant applied either by wick or in some equivalent manner. It is very difficult to apply a liquid lubricant in exactly the proper proportions, and the oil is likely to be deposited unevenly and to get on the fabric and in some cases is deposited on the hook for drawing out the pile wires, which is very undesirable. It requires some attention also to keep oil in the oil receptacle.

The principal objects of the present invention are to provide a simple and effective means whereby the pile wires can be lubricated without depositing a liquid lubricant thereon, for which purpose a solid form of lubricant is pressed endwise against the surfaces of the wire.

Other objects of the invention are to provide efficient means for operating the solid lubricant so as to prevent its touching the hook and constantly to present different surfaces to the pile wires, thus preventing a single groove being worn in the solid lubricant or "candle" and preventing the latter from coming into contact with the hook. In order to accomplish the latter result, mechanism is provided whereby when the hook comes up to withdraw the wire mechanism for lowering the "candle" is operated, and advantage is taken of this movement to simultaneously cause a partial rotation of the candle.

Further objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings in which—

Figure 1 is a plan of a portion of a carpet loom showing how this invention can be applied thereto; Fig. 2 is an elevation of the mechanism for operating the lubricating means on enlarged scale; Fig. 3 is an elevation of the same at right angles to Fig. 2 showing parts in section; Fig. 4 is an elevation of the side opposite that shown in Fig. 2 showing the candle holding means separated from its support; Fig. 5 is a side elevation partially diagrammatic in form, showing the relative positions of certain parts as the hook comes up to engage a wire; Fig. 6 is a similar view showing the position of the parts as the hook engages the wires; and Fig. 7 is a similar view showing the positions as the wire is being drawn out and lubricated.

The invention is shown as applied to a well-known type of carpet loom and for the purposes of illustrating the invention, the frame 10, lathe 11, spike roll 12, and portion of the hook operating mechanism 13 are illustrated. The hook operating mechanism actuates a hook 14 to withdraw the pile wire 15 in a way that is well understood.

In order to provide for lubricating the pile wires as they are withdrawn the hook operating mechanism is provided with a stop 16, which, as the hook approaches the pile wire, engages a lever 17 for the purpose of lowering a cylinder 18 in which is located a solid lubricating "candle" 19 as is indicated in Figs. 5 and 6. This prevents the candle from engaging the hook. After the hook engages the wire and is withdrawn the lever comes back to a stop 20 and the candle comes up into engagement with the wire to lubricate it as is indicated in Fig. 7. In order to accomplish this result and certain additional results which will be explained hereinafter, the following mechanism is shown: Mounted on the frame of the machine is a bracket or frame 21 on which the lever 17 is pivoted. This lever is shown in the form of a bell-crank having its short end connected with a link 22 which is pivoted to a slide 23 adapted to move vertically

on a vertical guide 24 adapted to be supported by the frame or bracket 21. A spring 25 surrounding a guide pin 26, which is movable through a slot in the bracket 21, normally holds the slide in its uppermost position. On this slide is mounted a hollow standard 30 in which is revolvably mounted a projection 31 on the bottom of the cylinder 18. Within this cylinder is located a spring 32 engaging a plate 33 which supports the lubricating candle and normally moves the same to the top of the cylinder. In order to prevent the candle from being displaced from the cylinder and to keep its upper end at a certain definite height, the slide 23 is provided with a spring clip 34 which projects over the top of the candle and limits its upward motion.

The way in which the candle is drawn down to prevent its engaging the hook has been explained in connection with Figs. 5, 6 and 7. This motion of the candle holder is utilized for the purpose of securing an additional result. It will be obvious that if the wires were to pass over the candle in the same position every time they would soon wear a groove across the same. In order to avoid this, the following mechanism is provided: Mounted on the slide is a ratchet wheel 40, and mounted to turn on the same axis is a pivoted member 41. On this pivoted member is a spring pressed pawl 42 engaging the ratchet wheel to operate it. Connected with the pivoted member is a reciprocating rod 43 having a hub 44 adjustable thereon and projecting through a slot in the bracket 21. Every time the slide comes down the hub engages the bottom or floor of the bracket and causes the pivoted member to swing on its axis, taking the pawl and consequently the ratchet wheel with it. Pivoted on the slide is another pawl 45 which is shown as having a counter-weight 46 to hold it in engagement with the teeth of the ratchet wheel and prevent reverse motion thereof. Fixed to a ratchet wheel is shown a bevel gear 47 meshing with a bevel gear 48 which is fixed to the cylinder 18 so that the intermittent rotary motion of the ratchet wheel is transmitted to the cylinder 18 and lubricating candle. In this way the motion imparted to the candle holder to keep it out of the way of the pile wire hook is utilized to turn the candle at each reciprocation of the hook and slide so that the top of the candle will be worn off with practical uniformity.

By the use of a solid lubricant and by the operation of the same so as to force its end against the pile wire, it will be seen that the latter is lubricated in a most efficient way, and the objections due to liquid lubricants are overcome, because there is no danger of the fabric becoming injured by the

presence of too much lubricant. At the same time all the advantages of the liquid lubrication are retained and a very simple and convenient mechanism is used to operate the parts.

While I have illustrated and described a preferred embodiment of the invention I am aware that many modifications can be made therein by any person skilled in the art without departing from the scope thereof as expressed in the claims. Therefore I do not wish to be limited to all the details of construction shown and described, but

What I do claim is:—

1. The combination of the pile wire mechanism of a loom, comprising a reciprocable hook for moving the pile wires, and a stop reciprocable therewith and longitudinally adjustable, with a solid lubricator, means for resiliently pressing the end of the lubricator against the pile wires as they are withdrawn, a lever in position to be engaged and moved by said stop when the hook moves into position to engage and withdraw a pile wire, means operated by said lever for lowering the lubricator when the hook passes over it to prevent contact between it and the hook, and means for simultaneously turning the lubricator on its axis.

2. In a device of the character described, the combination of a bracket, a slide, a spring for normally holding the slide in elevated position, a lever connected with the slide for depressing it, a standard on the bracket, a cylinder revolvably mounted on the standard and adapted to hold a lubricating candle, a ratchet wheel rotatably mounted on the slide, means whereby as the slide is lowered said ratchet wheel will be turned, and means connected with the ratchet wheel for turning said cylinder.

3. In a device of the character described, the combination of a bracket, a vertical guide thereon, a slide movable along the guide, a spring for normally holding the slide in elevated position, a lever connected with the slide for depressing it, a standard on the bracket, a cylinder revolvably mounted on the standard and adapted to hold a lubricating candle, a ratchet wheel rotatably mounted on the slide, a pawl on the slide for engaging the ratchet wheel and preventing the reverse rotation thereof, a pivoted member on the slide having a pawl thereon for engaging the ratchet wheel, and means whereby as the slide is lowered said member will be turned to cause the pawl to turn the ratchet wheel, and means connected with the ratchet wheel for turning said cylinder.

4. In a device of the character described, the combination of a vertically reciprocating and rotary candle holder, a plate in the candle holder for supporting the candle,

means for engaging a candle in the holder and retarding its rotation, and a spring resting loosely on the plate and coiled in the direction opposite to that in which the candle holder rotates, whereby as the candle holder is rotated the spring will be unwound.

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

WILLIAM H. D. FELTON.

Witnesses:

E. M. ALLEN,
C. F. WESSON.

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