

(No Model.)

L. D. FROST.

MACHINE FOR TURNING INSULATOR PINS.

No. 362,268.

Patented May 3, 1887.

Fig. 1.

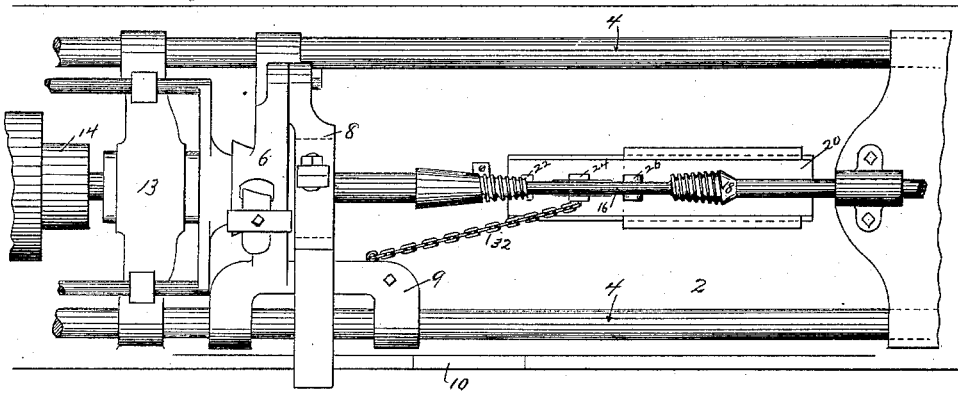


Fig. 2.

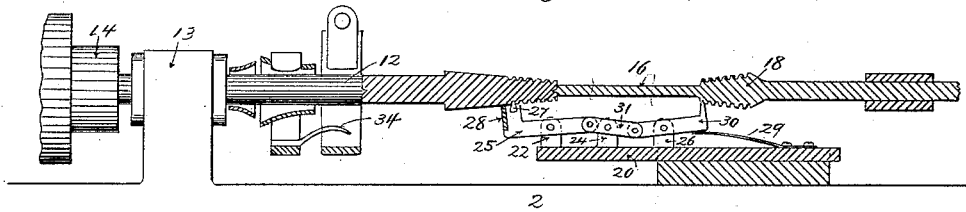
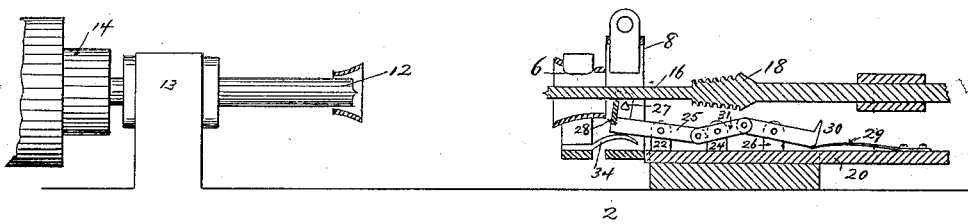


Fig. 3.



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UNITED STATES PATENT OFFICE.

LEWIS D. FROST, OF MINNEAPOLIS, MINNESOTA.

MACHINE FOR TURNING INSULATOR-PINS.

SPECIFICATION forming part of Letters Patent No. 362,268, dated May 3, 1887.

Application filed October 28, 1886. Serial No. 27,391. (No model.)

To all whom it may concern:

Be it known that I, LEWIS D. FROST, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain Improvements in Machines for Turning Insulator-Pins, of which the following is a specification.

The invention relates to machines for turning and cutting a screw-thread upon the wooden pins that are used to support insulators for telegraph and other electric wires, and the object that I have in view is to provide an attachment for an ordinary gage or wood-lathe that will cut the screw-thread at the same operation with the turning of the pin.

The invention consists, generally, in a slide provided with a thread cutter or chaser that is controlled by a threaded pattern or gage, the slide being connected with and moved by the cross-head of the lathe.

The invention consists, further, in the construction and combination hereinafter described, and pointed out in the claims.

In the drawings which form part of this specification, Figure 1 is a partial plan view of a turning-lathe with my improvement applied thereto. Fig. 2 is a longitudinal vertical section. Fig. 3 is a view similar to Fig. 2, but showing the cutters in a different relative position.

2 represents the bed plate or frame of the lathe, which supports the side rods or guide-bars, 4.

6 is a tool-rest, which carries the roughing tool or cutter.

8 is also a tool-rest, which carries the finishing or forming tool. This rest is hinged or pivoted at its rear extremity, and at the front rests upon the templet-bar 10, which conforms to the shape required for the pin, and as the rest 8 traverses the templet the pin is turned to correspond therewith.

The rests 6 and 8 are attached to a cross-head, 9, which slides freely upon the guide-bars 4.

12 is a spindle or mandrel mounted in a suitable head, 13, and driven by the pulley 14.

16 is a tail-stock held in suitable bearings, 17, in which it freely revolves. The blank from which the pin is formed is firmly secured between the mandrel 12 and tail-stock 16, and motion is imparted from the mandrel to the tail-stock through the said blank.

18 is a cone-shaped screw-thread pattern or gage attached to or formed upon the tail-stock.

20 is a slide, which is preferably supported in ways upon the bed-plate 2, and is provided with fulcrums 22, 24, and 26. The fulcrum 22 supports a lever, 25, which carries the thread-chaser 27, and the end of this lever is preferably furnished with a depth-gage, 28, which rests upon the surface of the pin in advance of the chaser and prevents it from being drawn too deep into the wood.

30 is a lever hung in the fulcrum 26, the end of which is adapted to engage the pattern 18, and is held against the said pattern by the spring 29, and the other end is pivoted to the intermediate lever, 31. This lever is supported by the fulcrum 24 and connects the lever 25 with the lever 30. It is convenient to use a screw-pattern somewhat larger in diameter than the thread upon the pin. To compensate for this, and also to give more leverage upon the chaser, I make the lever 31 with unequal arms.

32 is a chain which connects the slide 20 and the cross-head 9, and is of sufficient length to allow the cutters to traverse nearly the length of the pin before the slack in said chain is taken up.

34 is a lifting arm or incline placed upon the cross-head and extending outward therefrom, and so arranged as to come in contact with the lever 25 as the cross-head is moved back and raise it in order to cause the lever 30 to clear the pattern 18.

The operation is as follows: The blank is inserted when the cutters are in the position shown in Fig. 3. The cutters are advanced and the pin brought to its proper size. While this is being done the slide 20 remains stationary at the rear of the machine until the cutters have traveled nearly to the end of the pin, when the chain 32 draws the slide forward and into a position where the end of the lever 30, held up by the spring 29, will engage the screw-thread pattern 18, which is being revolved at the same rate of speed as the blank and mandrel 12. At the same time the chaser 27 comes in contact with the pin, and as the end of the lever 30 follows the thread in the pattern the slide 20 is thereby caused to advance, and the chaser cuts a corresponding thread upon the pin. When the whole length

of the pattern has been traversed, the lever drops over the end and this motion throws out the chaser. The pin is then removed, the cross-head is forced back, and the incline 34 comes in contact with the lever 25, which is thereby raised, as shown in Fig. 3. This depresses the end of the lever 30 and causes it to clear the pattern 18, and the whole slide is forced back to the position shown in Fig. 3, ready for the insertion of another blank.

No claim is made to the construction of the lathe, as the attachment can be applied to any lathe that is adapted for turning these pins.

The principal advantages of the invention are in the simplicity of the construction, the adaptability of the attachment to an ordinary lathe, and the rapidity with which the screw-threading can be accomplished, the pin being turned and the screw thread being cut at one operation.

I claim as my invention--

1. The combination, in a lathe, with a tail-stock carrying a pattern, of a slide, a lever,

30, fulcrumed on said slide and engaging said pattern, and a lever, 25, carrying a chaser, 27, fulcrumed on said slide and connected with said lever 30, all substantially as described.

2. The combination, in a lathe, with the tail-stock carrying a conical-threaded pattern, of a slide, a lever fulcrumed on said slide and engaging said pattern, and a chaser connected with and positively controlled by the movement of said lever, substantially as described.

3. The combination, in a lathe, with the tail-stock and pattern thereon, of the slide 20, the lever 30, fulcrumed on said slide and engaging said pattern, the chaser pivoted on said slide and connected with said lever, the cross-head, and means connecting said slide with said cross-head, substantially as described.

In testimony whereof I have hereunto set my hand this 23d day of October, 1886.

LEWIS D. FROST.

In presence of--

A. C. PAUL,

R. H. SANFORD.