(No Model.)

A. D. CATLIN.

INSULATOR PIN MACHINE.

No. 449,773. Patented Apr. 7, 1891.

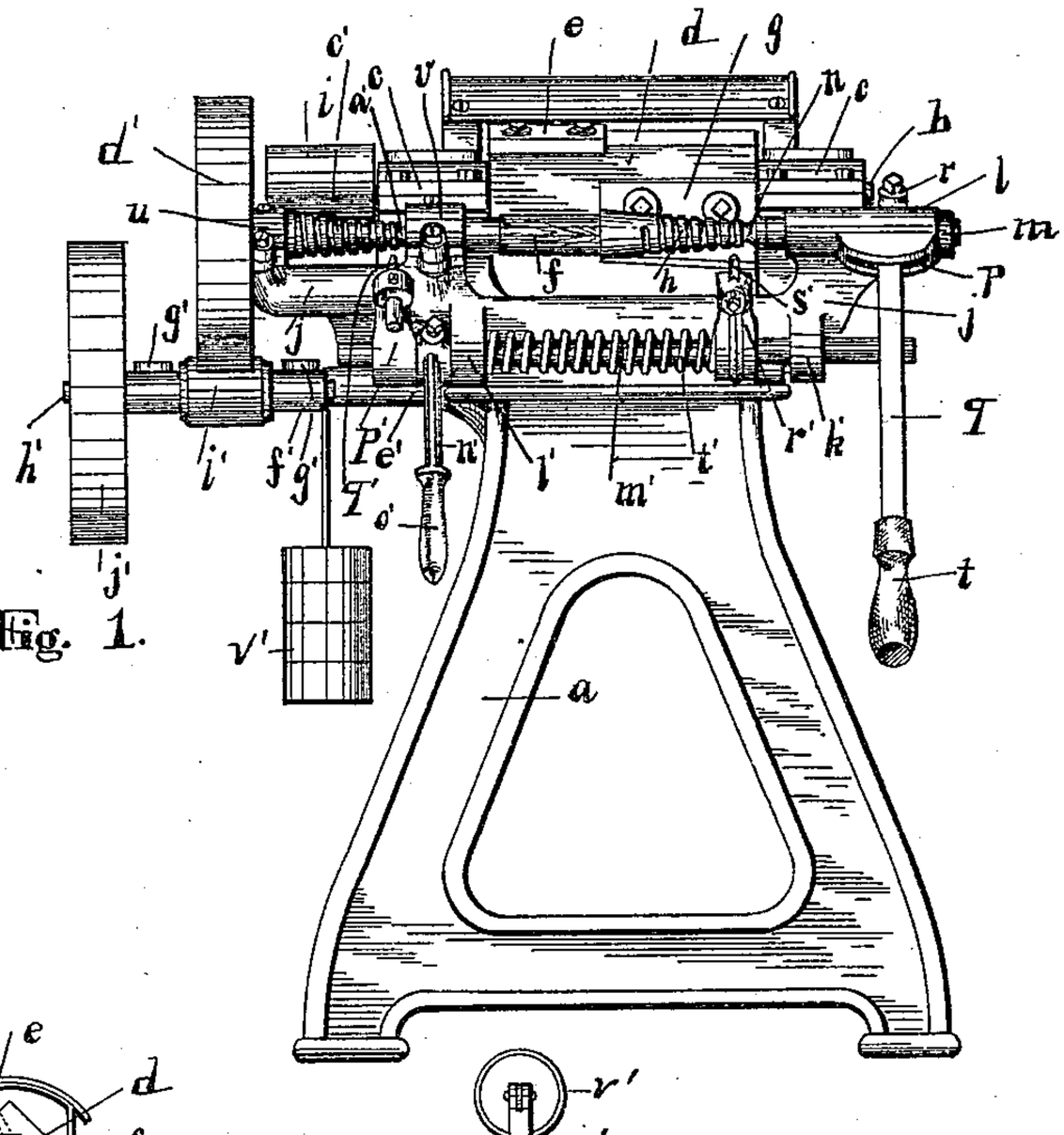

Fig. 1.

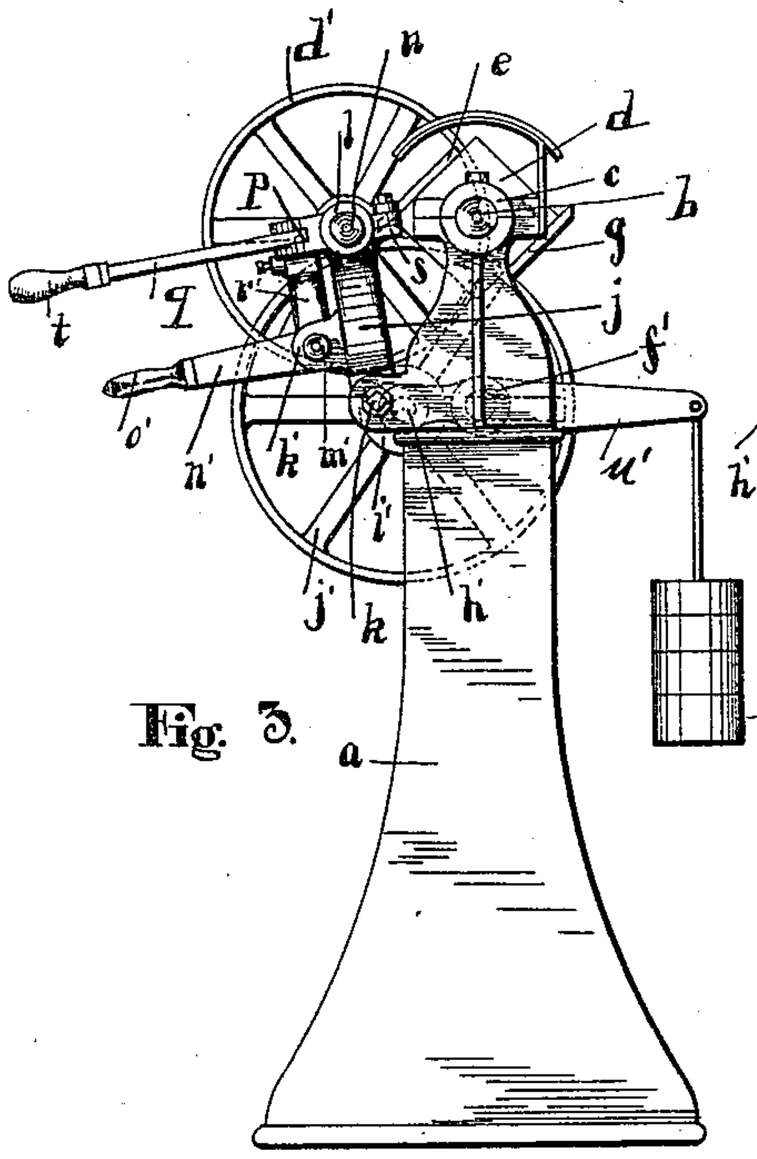

Fig. 3.

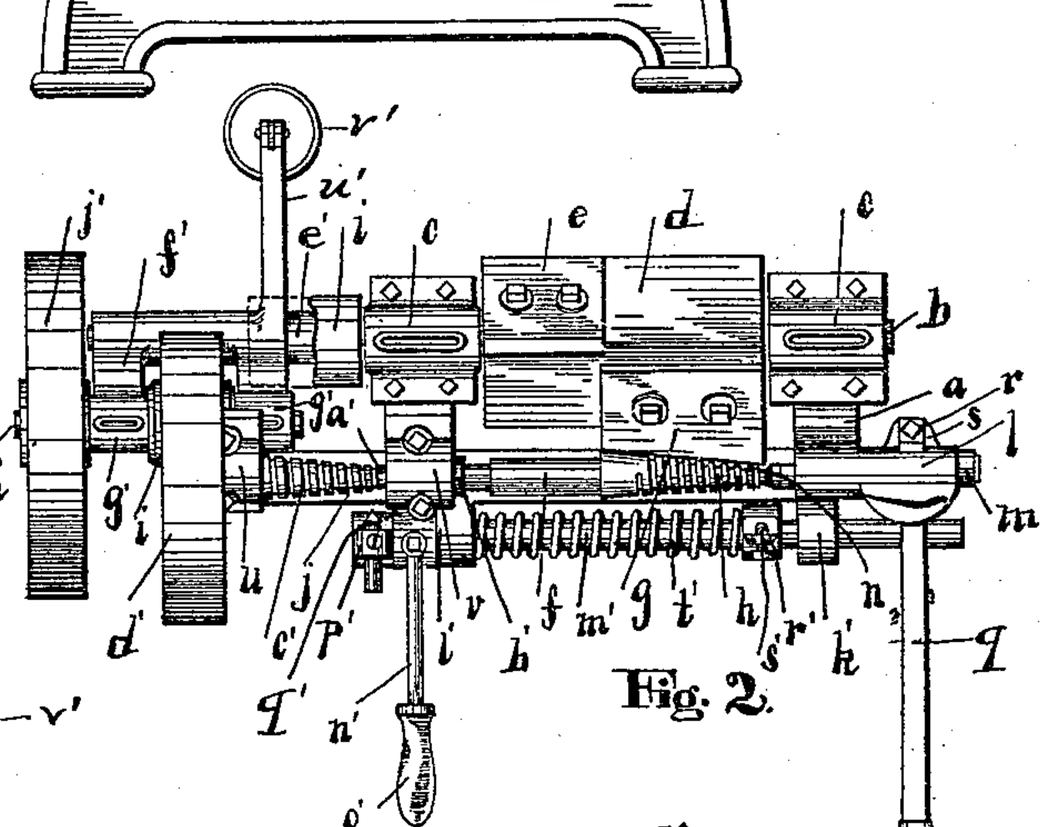

Fig. 2.

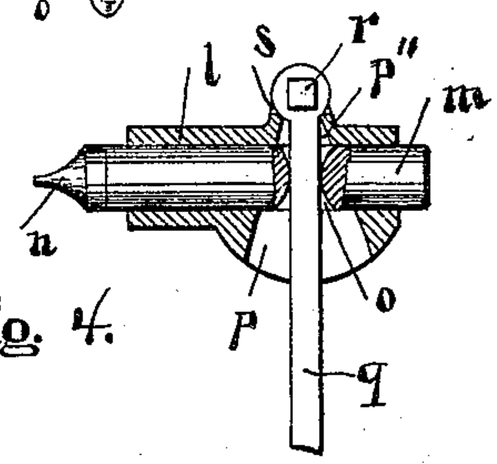

Fig. 4.

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UNITED STATES PATENT OFFICE.

ABEL D. CATLIN, OF CHATTANOOGA, TENNESSEE, ASSIGNOR TO K. L. CATLIN AND LANE LYLE, OF SAME PLACE.

INSULATOR-PIN MACHINE.

SPECIFICATION forming part of Letters Patent No. 449,773, dated April 7, 1891.

Application filed May 17, 1890. Serial No. 352,248. (No model.)

To all whom it may concern:

Be it known that I, ABEL D. CATLIN, a citizen of the United States, residing at Chattanooga, in the county of Hamilton and State of Tennessee, have invented certain new and useful Improvements in Insulator-Pin Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in machines for turning insulator-pins; and it consists in the combination, arrangement, and construction of the several devices which I use in fabricating the machine, which will hereinafter be fully described, and specifically pointed out in the claims of this specification.

The object of the invention is to construct and arrange a machine whereby pins for carrying insulators for supporting electric wires may be quickly and rapidly made and of a uniform contour and dimension.

My invention will be found illustrated in the accompanying drawings, in which the same letters of reference are placed to indicate the same parts throughout the several views.

Figure 1 represents a side view in elevation of my improved machine. Fig. 2 is a top or plan view of the same. Fig. 3 is a view in elevation of one end. Fig. 4 is a horizontal section of the box carrying the center support.

a represents the frame of the machine, and *b* is a shaft supported in boxes *c c* on the upper portion of the frame, and to this shaft, between the boxes, is mounted the cutter-head *d*, carrying the knives *e* for forming the tenon or shank portion *f* on the pin, and also carrying the knives *g* for forming the insulator-supporting portion *h* thereof, and on one end of the shaft is mounted a pulley *i* for imparting a rotary motion to the shaft and cutters.

j is a frame placed parallel with the shaft *b* and pivotally secured at *k* by its lower portion to the frame *a*, and is provided on one end of its upper portion with a box *l*, in which is placed a center support *m*, carrying on its inner end a center pin *n* and provided on its middle portion with a slot *o*, coinciding with the front and rear slots *p* and *p''* in the lateral sides of the box *l*, and through these slots a lever *q* is passed and fitted to fill the slot *o*, which is shorter than slots *p* and *p''*, and the lever is pivotally secured by its inner end at *r* to the lug *s*, projecting from the box, while the outer end of the lever is provided with a handle *t*, which being drawn inwardly turns the lever on its pivot and moves the center support *m* inwardly for engaging the center pin *n* with the stock to be worked, as will be presently explained.

The opposite end of the upper portion of the frame *j* is provided with boxes *u* and *v*, and in these boxes is supported a shaft *a'*, the inner end *b'* of which projects beyond the box, and is provided with a spur-center to engage with one end of the insulator-pin blank, and between the boxes *u* and *v* the shaft is turned to a tapering contour corresponding to the required contour of the supporting end *h* of the insulator-pin, and is also provided with a screw-thread *c'* corresponding to the screw-thread required on the end of the insulator-pin for passing into the threaded socket of a glass insulator of the common form, and upon the outer end of the shaft *a'* is mounted a friction-wheel *d'*.

e' is an arm projecting from the frame *a* beneath and beyond the friction-wheel *d'*, and upon this arm is arranged a sleeve *f'*, projecting from the sides of which are the boxes *g'*, which carry a shaft *h'*, and upon the shaft *h'*, between the boxes, is mounted a small friction-wheel *i'*, arranged so that its periphery will engage with the periphery of the larger friction-wheel *d'* when the frame *j* is tilted to bring the insulator-blank in position for

the rotary cutters to operate thereon, as will be presently explained, and an arm u', projecting from the side of the sleeve f' opposite the arms and provided with a weight v', provides the required variable support for the small friction-wheel i' to allow the frame to be moved forward after the contact of the friction-wheels is made, and on the outer end of the shaft h' is mounted a pulley j', which is belted to a suitable source of power for imparting revolution thereto.

On the front side of the lower portion of the frame j are arranged the boxes k' and l', projecting forwardly, and through these boxes is passed a shaft m', and n' is a lever secured upon the shaft outside of the box l' by one end, and projecting forwardly the lever is provided on its opposite end with a handle o', so that on raising the handle the shaft will be oscillated, and upon the end of the shaft m', adjacent to the threaded portion c' of the shaft a', is rigidly mounted by one end an arm p', while the opposite end of the arm carries a tracer-pin q' for engaging with the screw-thread c when the shaft is oscillated in the proper position.

r' is an arm rigidly mounted by one end on the shaft m', between the boxes and adjacent to the box k', and the opposite upwardly-extending end of the arm is provided with a cutter s' for forming a screw-thread.

Around the shaft m' is coiled a spring t', one end of the spring bearing against the inner side of the box l' and the opposite end against the arm r', so that the shaft will be actuated by the spring toward the right.

Suitable power being applied to revolve the shaft b and the cutter-head, and also to revolve the shaft h', the insulator-pin blank is placed between the centers b' and n, and the centers are engaged with the ends thereof by drawing inwardly upon the handle t of the lever q. The lever q is then raised upwardly, and the frame j is thereby oscillated forwardly, carrying the pin-blank toward the cutters, which movement also brings the friction-wheel d' in contact with the revolving friction-wheel i', thereby imparting revolution to the shaft a' and the pin-blank, and as the frame is still oscillated forwardly the cutters e and g remove the surface from the blank and neatly cut it to the required dimension and contour, suitable stops being provided to arrest the forward movement of the frame when the pin has been properly formed. The lever n' is then raised upwardly to oscillate the shaft m', which moves the outer end of the arm p' forwardly and brings the tracer-pin q' into engagement with the revolving screw-thread c', and the tracer, then following the lead of the thread, moves the shaft m' lengthwise in its supporting-boxes, and with it the arm r' and the cutter s', which, engaging with the supporting end portion of the rounded pin, cuts a thread thereon corresponding in pitch to the pitch of the thread c', and when the thread is formed upon the pin to the proper distance from its end the lever n' is moved downwardly to free the tracer-pin from the thread c', and the spring t' then operates to move the shaft m' lengthwise in the opposite direction to its original position, and the lever q is then moved downwardly to oscillate the frame backwardly and retreat the pin from the cutters, and is also moved outwardly to free the pin from the centers, when another blank can be inserted between the centers and the operation repeated.

It will be seen that by this machine insulator-pins of a uniform contour and dimension may be rapidly made, the work of turning the pin to the proper size and form being performed by the rotary cutters, allowing the blank to be fed forward with great speed to finish the pin, while the rapid and uniform revolution of the threaded shaft and pin allows the threading operation to be quickly and accurately performed.

The cutters are herein shown as being arranged for forming insulator-pins; but of course it will be understood that by changing the form of the cutters other forms of pins may be as easily made, and if desirable the threading devices may be omitted and the turning of the pin will be the same.

Having described the construction and operation of my improved machine, what I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, in an insulator-pin machine, of the frame a, the shaft b, mounted on the frame and carrying a cutter-head and cutters, the frame j, pivotally secured to the frame a below the cutter-shaft and provided on one side of its upper portion with a box l, having transverse slots p, the center support m within the box l and provided on its inner end with a center pin n, and having a transverse slot o coinciding with the slots p, but of shorter length, with a lever q passed through the slots o and p and fitted closely to the slot o and pivoted by its inner end to the inner side of the box, a shaft a', mounted on the opposite side portion of the frame j and provided with a spur-center b', and mechanism for imparting a rotary motion to the said shaft a' when the frame is oscillated forwardly, substantially as set forth.

2. In an insulator-pin machine, the combination, with the frame a, the shaft b, carrying rotary cutters and mounted on the frame, the frame j, pivotally secured by its lower end to the frame a and carrying on one side portion of its upper end a center support and center and provided on the opposite side portion of its upper end with supporting-boxes u and v, a shaft a', mounted in the said boxes and carrying on its inner end a spur-center, and provided on its central portion with a

screw-thread c', and mechanism for revolving the shaft, as described, of the shaft m', supported in boxes on the lower portion of the frame j and provided with a projecting arm p', carrying a tracer-pin q' for engaging with the screw-thread c' and with an arm r', carrying the cutter s', a lever n', mounted on the shaft, and a spring t for moving the shaft endwise, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ABEL D. CATLIN.

Witnesses:

LANE LYLE,

J. P. HOSKINS.