

No. 695,743.

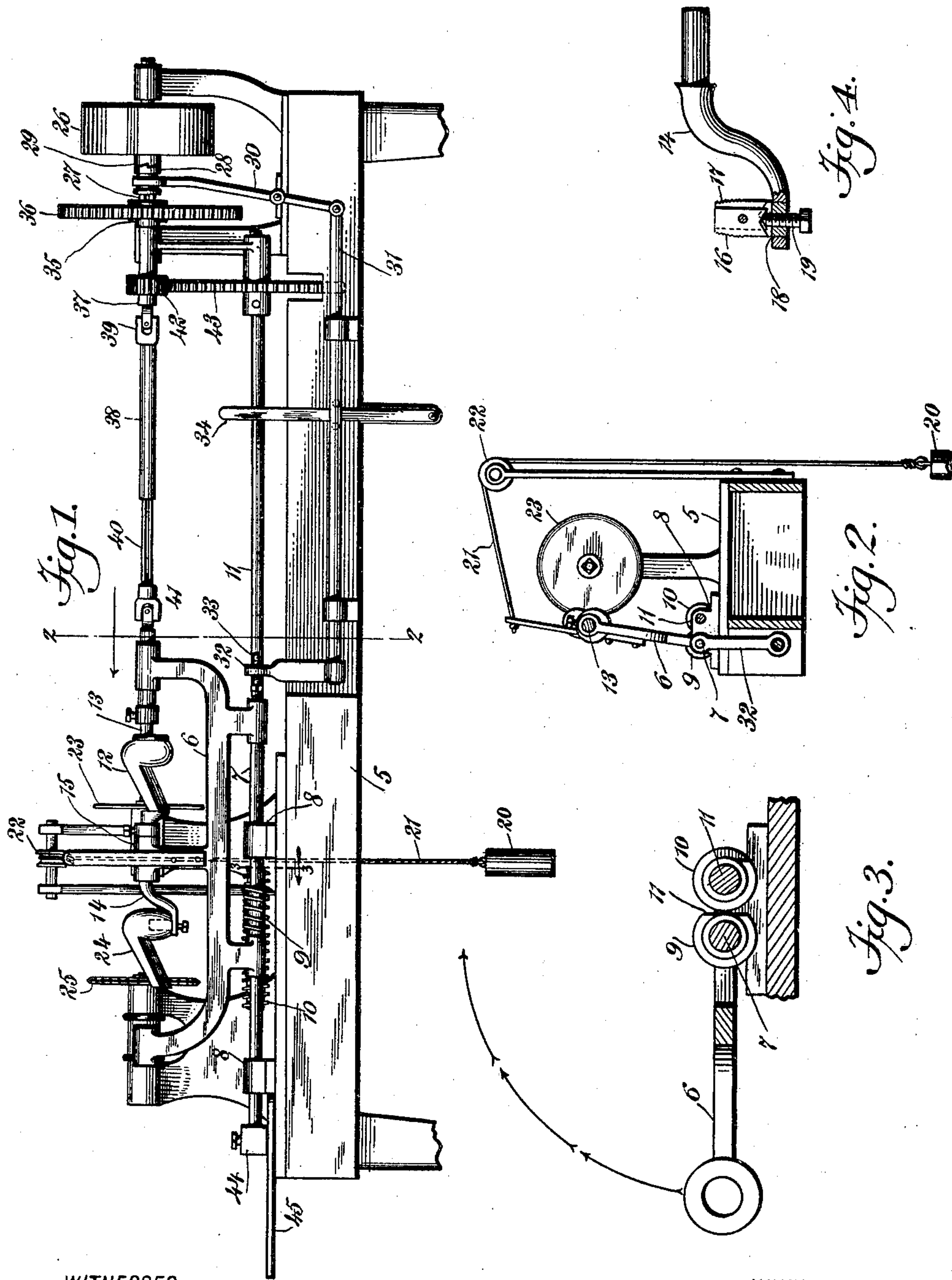
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A. LEHMANN.

MACHINE FOR TURNING IRREGULAR FORMS.

(Application filed Nov. 5, 1901.)

(No Model.)



WITNESSES:

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MACHINE FOR TURNING IRREGULAR FORMS.

SPECIFICATION forming part of Letters Patent No. 695,743, dated March 18, 1902.

Application filed November 5, 1901. Serial No. 81,190. (No model.)

To all whom it may concern:

Be it known that I, ADOLF LEHMANN, a citizen of the United States, and a resident of the city of New York, (Evergreen, borough of Queens,) in the county of Queens and State of New York, have invented a new and Improved Machine for Turning Irregular Forms, of which the following is a full, clear, and exact description.

10 This invention relates to improvements in machines for turning irregular forms—such, for instance, as tobacco-pipes; and the object is to provide a machine of this character by means of which the work may be rapidly and
15 accurately performed and which will require no attention excepting in the placing and removal of the work.

I will describe a machine for turning irregular forms embodying my invention, and
20 then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

25 Figure 1 is a front elevation of a machine for turning irregular forms embodying my invention. Fig. 2 is a section on the line 2 2 of Fig. 1. Fig. 3 is a section on the line 3 3 of Fig. 1, and Fig. 4 is a detail view of a work-holder employed.

Referring to the drawings, 5 designates the bed-frame of the machine, along which a work-holding frame 6 is movable. This work-
35 holding frame is attached to a rod 7, mounted to slide in guides 8, attached to the bed-frame, and on this rod is a screw 9, engaging with a feed-screw 10 on a shaft 11. While the frame 6 is in its operating position, as indicated in
40 Fig. 1, the screw 10 engaging with the screw 9 will move the frame lengthwise of the machine. Upon the end of its movement, however, or when it is desired to remove or place work, the frame may be turned downward, as
45 indicated in Fig. 3, so that it may be quickly moved to its starting position without stopping the machine. Therefore I provide one side of the screw 9 with a flat surface 11, whereby the said screw will be disengaged
50 from the screw 10 when the frame is moved down.

The model or form 12 for the work is at-

tached to a shaft 13, having a bearing in the frame 6, and the form 12 practically is a portion of the shaft. It is connected to a curved
55 arm-section 14, having bearings in a block 15, carried by the frame, and attached to this arm 14 is the work to be operated upon, here shown as a pipe 24.

The work-holding device consists of oppositely-movable jaws 16 and 17, pivoted to a
60 post 18, removably secured in said arm 14. The lower ends of the jaws 16 and 17 are beveled, and these beveled ends are engaged by an adjusting-screw 19. By moving the said
65 screw 19 upward the upper ends of the jaws 16 and 17 will be forced outward against the walls of the opening in the pipe-bowl.

The frame 6 is held in its operating position by means of a weight 20, from which a
70 rope or cord 21 extends around a pulley 22 and thence to a connection with the said frame 6. The frame is moved outward by the model or form 12 engaging with a fixed
75 plate 23 on the machine, and during these movements the work 24 is carried against a rotary cutter 25, this, of course, during a lengthwise movement of the frame 6.

A driving-pulley 26 is loosely mounted on a shaft-section 27, but is designed to be placed
80 in rotary connection therewith by means of a clutch-section 28, designed to engage with a clutch-section 29 on the pulley. The clutch-section 28 is movable lengthwise of the shaft 27 and is engaged by a lever 30, from the
85 lower end of which a push-bar 31 extends through guides on the bed-frame, and at its inner end this rod 31 has an upwardly-extended arm 32, in which is an adjustable tappet-screw 33, designed to be engaged by the
90 end of the carriage 6 upon a complete movement of said carriage to the right. When the carriage engages with said tappet-screw 33, the rod 31 will be moved lengthwise of the machine, disengaging the clutch-section
95 28 from the clutch-section 29, thus stopping the operation of the machine. The clutch may be thrown into and out of engagement manually by means of a lever 34, pivoted to the bed-frame and engaging with pins on said
100 rod 31.

On the shaft 27 is a pinion 35, meshing with a gear-wheel 36 on a shaft-section 37, and between this shaft-section 37 and the

shaft 13 is a telescopic and universal-joint shaft-section consisting of a member 38, having universal-joint connection 39 with the shaft-section 37, and a member 40, having
 5 universal-joint connection 41 with the shaft-section 13. The member 40 slides in the member 38, and to prevent a rotary movement of one member relatively to the other I provide a web on the inner side of the member 38, which engages in a longitudinal channel formed in the member 40. By means of
 10 this shaft-section it is obvious that the frame 6 is free to move outward and inward and also lengthwise of the machine. On the shaft-section 37 is a pinion 42, engaging with a gear-wheel 43 on the shaft 11, whereby rotary movement is imparted to the screw 10 for feeding the frame 6 lengthwise.

In placing or removing work the frame 6, as before stated, is to be moved downward, as indicated in Fig. 3, and as a means for holding the frame in such position against the pressure of the weight 20 an angular block 44 is connected to the end of the rod 7,
 25 and pivoted to the bed-frame is a lever 45, designed to be moved underneath said block 44, holding the rod and frame from rotary movement.

The operation of the machine from the above description is quite obvious—that is, the work is to be placed upon the holder and fed against the cutting-tool 25, and the work will be moved outward in accordance with the shape of the model 12 as said model presses
 35 against the plate 23.

While this machine is particularly adapted for turning wooden pipes, it is also adapted for turning other small articles, such as shoe-lasts and the like. By means of the holding
 40 device, consisting of the jaws 16 and 17, the work may be very quickly placed in position or removed.

Having thus described my invention, I claim as new and desire to secure by Letters
 45 Patent—

1. In a machine for turning irregular forms, a shaft having universal-joint connections and telescopic members, a model or form carried by said shaft, a plate against which said
 50 model or form is designed to bear, a swinging frame for supporting the model or form and for supporting the work, a cutting-tool for the

work, and means for moving the frame lengthwise of the machine, substantially as specified. 55

2. A machine for turning irregular forms, comprising a swinging work-holding frame, a shaft having a bearing in said frame and adapted to support a form or model and also to support the work, telescopic members in
 60 said shaft, universal-joint connections in the shaft, a screw-shaft, and a screw on the work-holding frame engaging with the screw of said screw-shaft, substantially as specified.

3. In a machine for turning irregular forms, 65 a swinging work-holding frame, a screw on said frame, the said screw being flattened at one side, a screw-shaft having its screw engaging with the first-named screw, a work-holding shaft mounted in the swinging frame, a driving-gear, and a telescopic and swinging section for said shaft between the swinging frame and said driving-gear, substantially as specified. 70

4. In a machine for turning irregular forms, 75 a work-holding frame having longitudinal and swinging movements, a shaft carried by the frame, a driving-gear and a shaft having sliding sections and universal-joint connections with the first-named shaft and the driving-gear, substantially as specified. 80

5. In a machine for turning irregular forms, a bed-frame, a work-holding frame, a shaft supported in the work-holding frame, a rod on which the frame is secured, the said rod being mounted to turn in bearings on the bed-frame, an angular block on said rod, and a lever pivoted to the bed-frame and adapted to engage underneath said block, substantially as specified. 85 90

6. In a machine for turning irregular forms, a work-holding shaft having a curved end, a post mounted on said curved end, jaws mounted to swing on said post in opposite directions, the said jaws having inclined lower ends, and a screw for engaging against said inclined ends, substantially as specified. 95

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ADOLF LEHMANN.

Witnesses:

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 C. R. FERGUSON.