

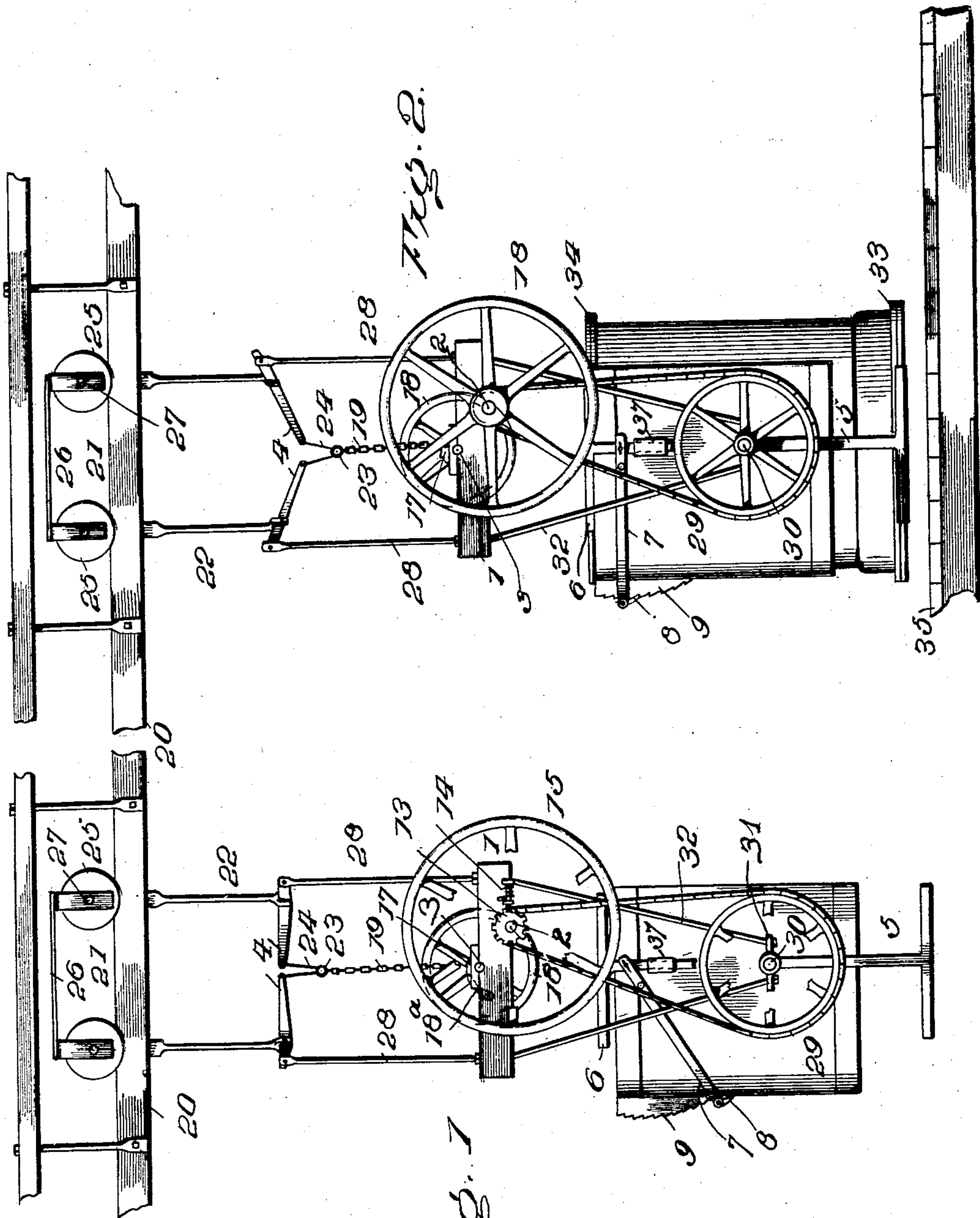
No. 738,017.

PATENTED SEPT. 1, 1903.

S. G. ELTON.
APPARATUS FOR TURNING PIPE.
APPLICATION FILED NOV. 29, 1902.

NO MODEL.

3 SHEETS—SHEET 1.



WITNESSES:

George Hatt
George Hatt

Fig. 1

BY

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INVENTOR

S. G. Elton

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3 SHEETS—SHEET 2.

Fig. 3.

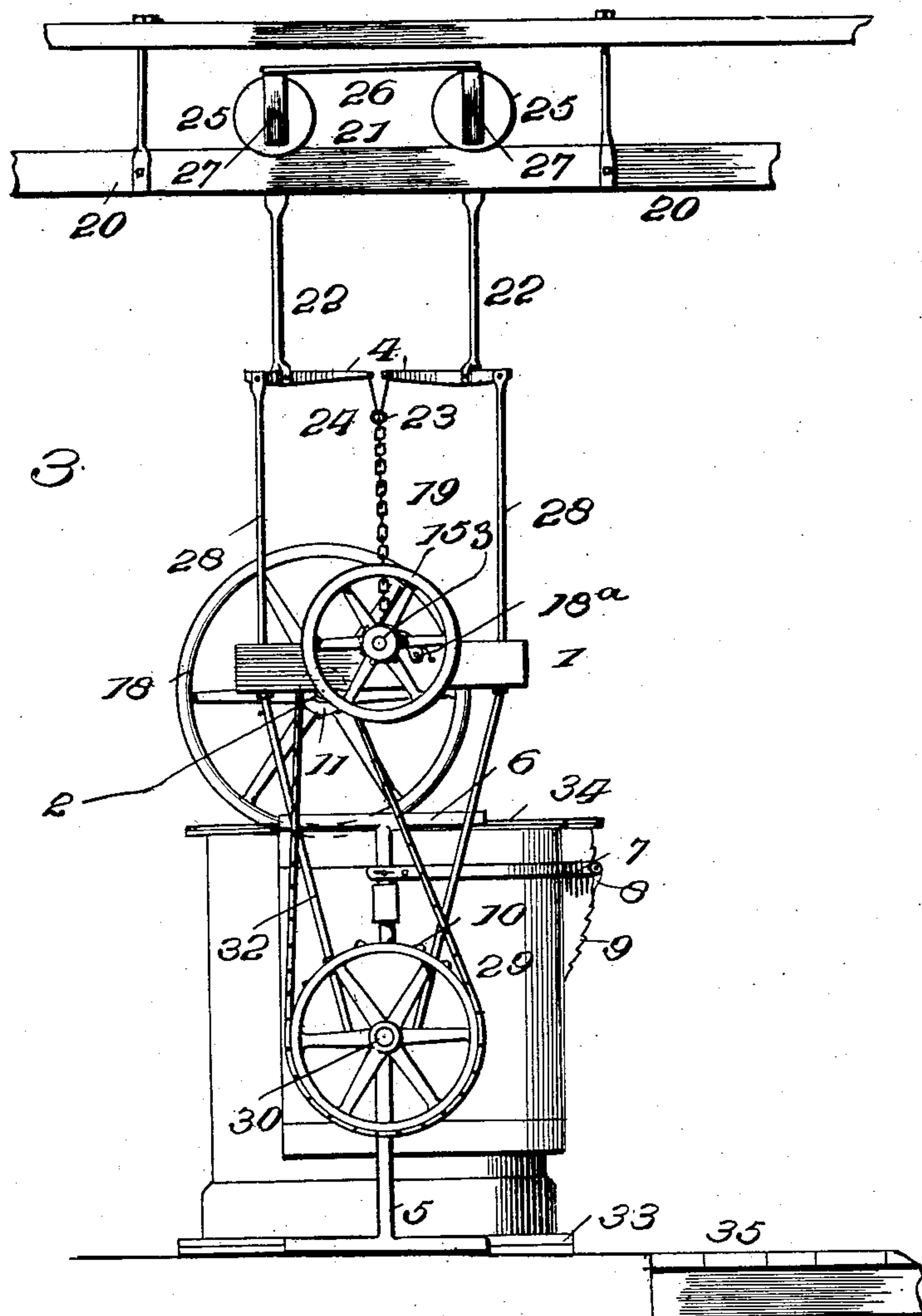
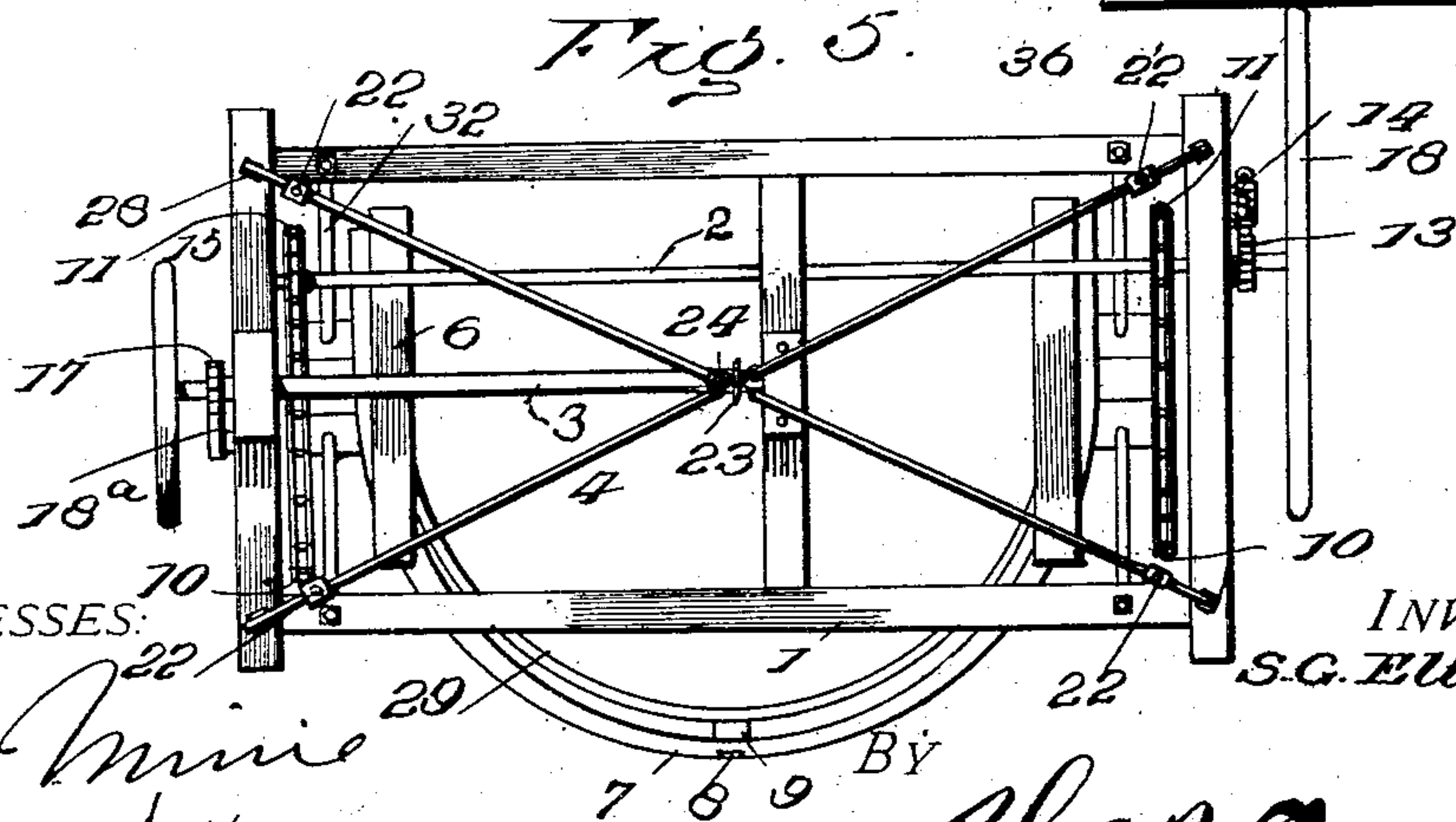


Fig. 5.



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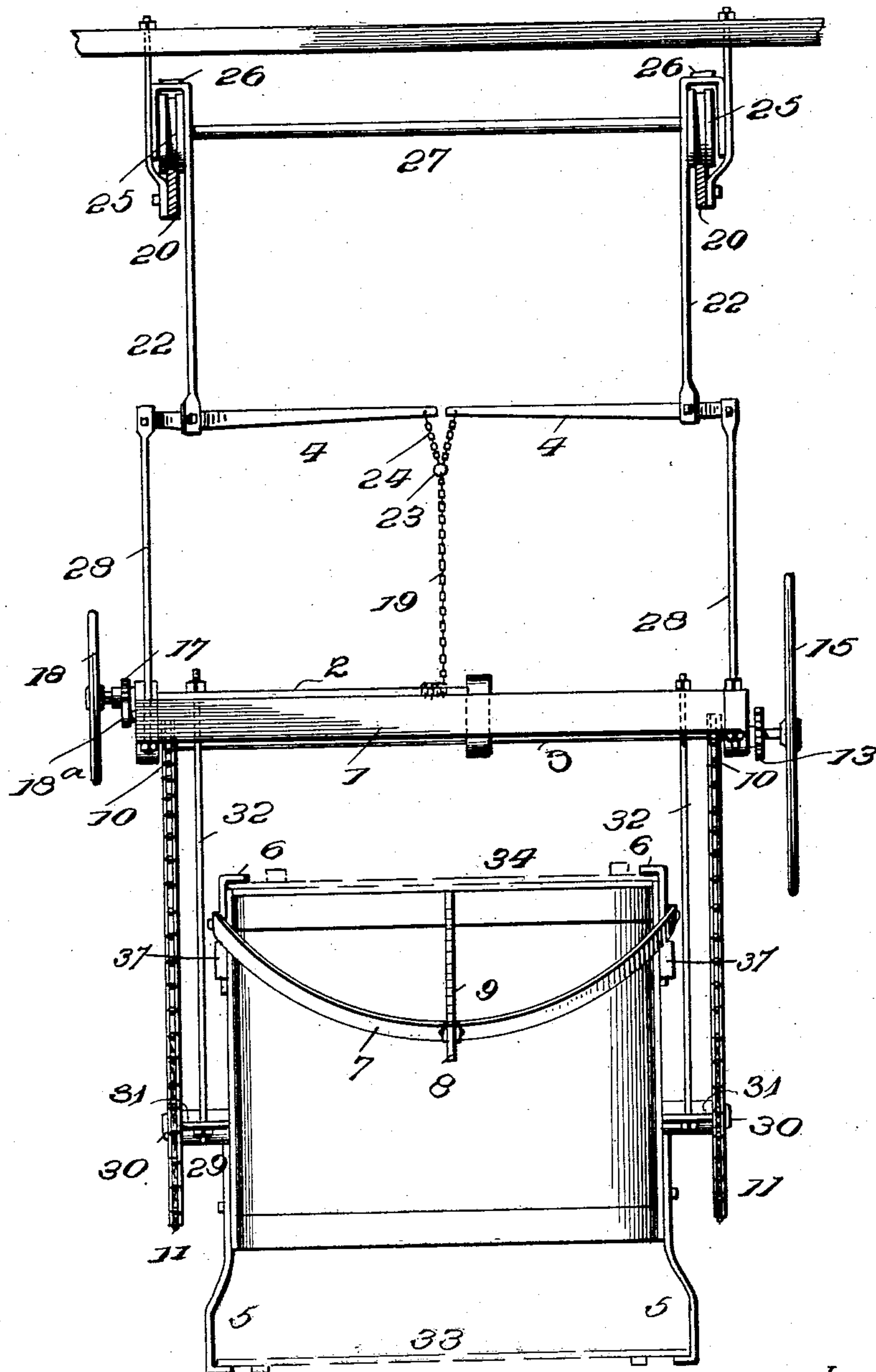
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APPLICATION FILED NOV. 29, 1902.

NO MODEL.

3 SHEETS—SHEET 3.

Fig. 4.



WITNESSES:

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INVENTOR

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UNITED STATES PATENT OFFICE.

SCOTT GEORGE ELTON, OF AKRON, OHIO.

APPARATUS FOR TURNING PIPE.

SPECIFICATION forming part of Letters Patent No. 738,017, dated September 1, 1903.

Application filed November 29, 1902. Serial No. 133,246. (No model.)

To all whom it may concern:

Be it known that I, SCOTT GEORGE ELTON, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Apparatus for Turning Pipe, of which the following is a specification.

This invention is designed most especially as an improvement on the apparatus disclosed in Patent No. 710,894, granted to Andrew Robinson October 7, 1902, the purpose being to simplify the construction, facilitate manipulation, lessen the labor, and equalize the strain upon the apparatus when turning the pipe.

Other objects and advantages are contemplated and will readily suggest themselves to persons skilled in the art as the structural details and workings of the invention are fully understood, and to these ends reference is to be had to the subjoined description and the drawings hereto attached, in which—

Figure 1 is a side elevation of pipe-turning apparatus embodying the vital features of the invention. Fig. 2 is a view similar to Fig. 1, showing the cradle elevated and a pipe in place. Figure 3 is a view of the reverse side, showing the pipe turned and the apparatus directly above the opening in the floor. Fig. 4 is a rear view. Fig. 5 is a top plan view.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

In accordance with the present invention the cradle and adjunctive parts are mounted so as to run upon an overhead track 20, being supported by means of a carriage 21 of any construction. Hangers 22 are pendent from the four corners of the carriage and pivotally support levers 4 at their lower ends, said levers radiating from a central point and being connected to a ring 23 by means of links 24. The hangers 22 have their upper ends bent to embrace opposite sides of the respective trolley-wheels 25, which are grooved in their peripheries to run upon the tracks 20. The upper ends of the hangers upon the same side are connected by tie-bars 26, and corresponding trolley-wheels are united by means of the axles 27. The levers 4 are mounted in bifur-

cations of the lower ends of the hangers 22, so as to provide long and short arms, the long arms pointing inward and the short arms extending outward and connected with rods or bars 28, supporting the frame 1, carrying the operating mechanism.

The cradle 29 of accustomed construction is provided at opposite sides with trunnions 30, mounted in bearings 31, which are supported by means of rods or bars 32, upwardly diverged and connected at their upper ends to the frame 1. Jaws 5 are applied to opposite sides of the cradle and are pendent therefrom and are adapted to receive a shop-board 33, upon which the pipe is formed or placed.

The jaws 5 are rigidly attached to the cradle in any substantial way. A bowed or forked lever 7 has its members pivoted to opposite sides of the cradle 29 a short distance from their extremities, and movable jaws 6, guided by keepers 37, applied to opposite sides of said cradle, are pivotally connected to the end portions of said lever, and in conjunction with the jaws 5 grip the pipe and secure it within the cradle 29 after the latter has been properly adjusted.

The rear portion of the lever 7 is provided with a pawl 8, which is adapted to engage with one of a series of teeth of a curved rack-bar 9, so as to hold the lever and jaws 6 in an adjusted position. The jaws 6 are constructed in a manner similar to the jaws 5, their inner extensions being adapted to engage with the ends of a shop-board 34, which is placed on top of the pipe preliminary to gripping the same for turning and transportation. The frame 1 may be of any substantial construction and is provided with bearings in which are journaled shafts 2 and 3. The shaft 3 is provided at its outer end with a hand-wheel 18, and a rope, chain, or analogous part 19 is adapted to wind upon the shaft 3, so as to pull down upon the inner ends of the levers 4 and elevate the cradle and pipe when required. The connection 19 is attached at its upper end to the ring 23, and its lower end is secured to the shaft 3 in any way, so as to wind thereon to effect lifting of the cradle and attached pipe. To prevent backward rotation of the shaft 3, a ratchet-wheel 17 is secured thereto and coöperates with the pawl

18^a, pivoted to a side bar of the frame 1. When the shaft 3 is turned so as to wind the rope or connection 19 thereon, the inner ends of the levers 4 are drawn downward and their outer ends are correspondingly moved upward and, being connected with the frame 1, causes a corresponding elevation thereof and a lifting of the pipe clamped to the cradle. The shaft 2 extends from one side to the other of the frame 1, and its end portions are provided with sprocket-pinions 11, around which sprocket-chains pass and connect said sprocket-pinions with sprocket-wheels 10, secured to the trunnions 30 of the cradle. A hand-wheel 15 is applied to an end of the shaft 2, and upon turning said shaft a corresponding movement is imparted to the cradle through the connections 10, 11, and 12, thereby effecting a turning of the cradle and pipe held thereby. A ratchet-wheel 13 is secured to an end portion of the shaft 2, and a dog 14 coöperates therewith to hold the cradle and shaft 2 in an adjusted position. The teeth of the ratchet-wheel 13 are straight, thereby enabling the dog 14 to hold the same against rotation in either direction.

The floor 35 of the shop, factory, or other structure in which the apparatus is installed is provided with an opening 36 for convenience in turning the pipe, thereby obviating an unnecessary lift in order to enable the apparatus to clear the floor or surface when turning the pipe. When it is required to lift a pipe either to transport it from the press to the elevator or other point, the apparatus is moved until the cradle receives the pipe, the inturned parts of the jaws 5 being engaged under the shop-board 33, after which the lever 7 is operated to cause the jaws 6 to engage over the shop-board 34, placed upon the top of the pipe. The shaft 3 is turned to wind the lower end of the rope or connection 19 thereon and effect a lifting of the cradle and pipe gripped thereto. The apparatus is now run upon the track 20, and when reaching a point directly above the opening 36 of the floor the pipe may be turned, if required, this operation being effected by turning the shaft 2 through the instrumentality of the hand-wheel 15. After the pipe has been turned the apparatus is again shifted along the track 20 until the elevator or other point of deposit is reached, when the shaft 3 is released from the pawl 16 and permitted to turn, so as to lower the cradle and pipe upon the floor or other support. The lever 7 is released and operated to liberate the pipe from the jaws 5 and 6, after which the apparatus is returned to the press for operation in the manner stated. On the return trip the cradle may be turned so as to assume a normal position in order to be conveniently fitted for reception of the next pipe to be carried from the press or pipe-forming mechanism.

Having thus described the invention, what is claimed as new is—

1. In pipe-turning apparatus of the character described, means for receiving and supporting the pipe, a carriage adapted to travel upon an overhead track, a system of levers connected with, respectively, the carriage and pipe-supporting means, and operating mechanism for the said levers applied to the pipe-supporting means to effect an elevation and a lifting of the pipe, substantially as set forth.

2. In a pipe-turning apparatus of the character described, a pipe-support, a carriage, a series of levers arranged so as to radiate from a common point and pivotally supported between their ends by means of said carriage, connections between the outer ends of said levers and the pipe-support, a connection attached to the inner ends of said levers, and means for exerting a down pull upon said connection, whereby the pipe-support is elevated, substantially as set forth.

3. In a pipe-turning apparatus of the character described, a pipe-support, a carriage, a series of levers arranged so as to radiate from a common point and pivotally supported between their ends by means of said carriage, connections between the outer ends of said levers and the pipe-support, a connection attached to the inner ends of said levers, a shaft mounted upon the pipe-support and adapted to have said connection wind thereon to effect a lifting of the pipe-support, and means co-operating with the shaft to prevent backward rotation thereof, substantially as set forth.

4. In pipe-turning apparatus of the character described, a carriage, hangers pendent therefrom, levers pivotally supported by means of said hangers, a pipe-support connected with said levers, and means between said levers and pipe-support for operating said levers to effect a lifting of said pipe-support, substantially as set forth.

5. In apparatus for turning pipe, the combination of a frame, a cradle having oppositely-disposed trunnions, a shaft journaled to said frame, sprocket-pinions applied to the end portions of the shaft, sprocket gear-wheels applied to the trunnions of the cradle, and sprocket-chains connecting the sprocket-pinions and the sprocket gear-wheels, substantially as set forth.

6. In pipe-turning apparatus of the character described, and in combination with the cradle, jaws at one end of the cradle, an approximately bow-shaped lever having its side members pivoted to the cradle, movable jaws at the opposite end of the cradle and connected with the extremities of said lever, a pawl applied to the outer or rear end of said lever, and a toothed bar for coöperating with the pawl to hold the lever in an adjusted position, substantially as set forth.

7. The herein-described pipe-turning apparatus comprising a carriage, hangers pendent therefrom, a system of levers pivoted to said hangers and having a radial arrangement, a

frame connected to the outer ends of said le-
vers, a cradle supported by means of said
frame and provided with pipe-gripping jaws,
gear-wheels applied to the trunnions of the
5 cradle, a shaft journaled to the frame and
provided with sprocket-pinions, sprocket-
chains connecting corresponding sprocket-
pinions and gear-wheels, a second shaft jour-
naled to the frame, a connection between the
10 last-mentioned shaft and the inner ends of

the aforementioned levers, and means coöp-
erating with the two shafts to prevent casual
rotation thereof, substantially as set forth.

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

SCOTT GEORGE ELTON. [L. S.]

Witnesses:

F. H. STUART,
C. R. GRANT.