(No Model.)

3 Sheets—Sheet 1.

D. A. MUNROE.

CLAY MILL.

No. 533,483. Patented Feb. 5, 1895.

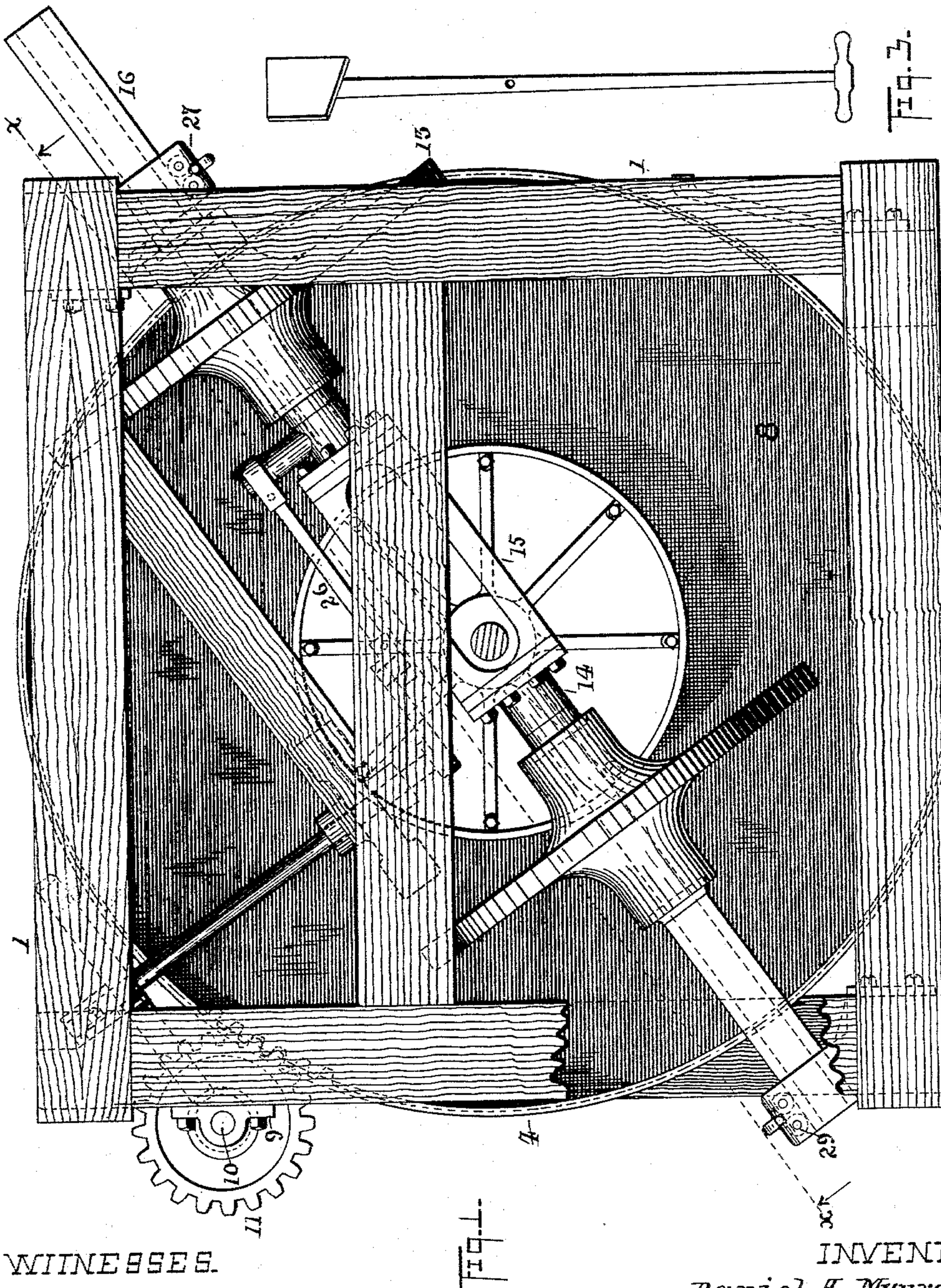

FIG. 1.

FIG. 2.

WITNESSES.

Belle L. Lorrie.

C. E. Humphrey

INVENTOR.

Daniel A. Munroe:

by C. E. Humphrey

ATTORNEY.

(No Model.)

3 Sheets—Sheet 2.

D. A. MUNROE.

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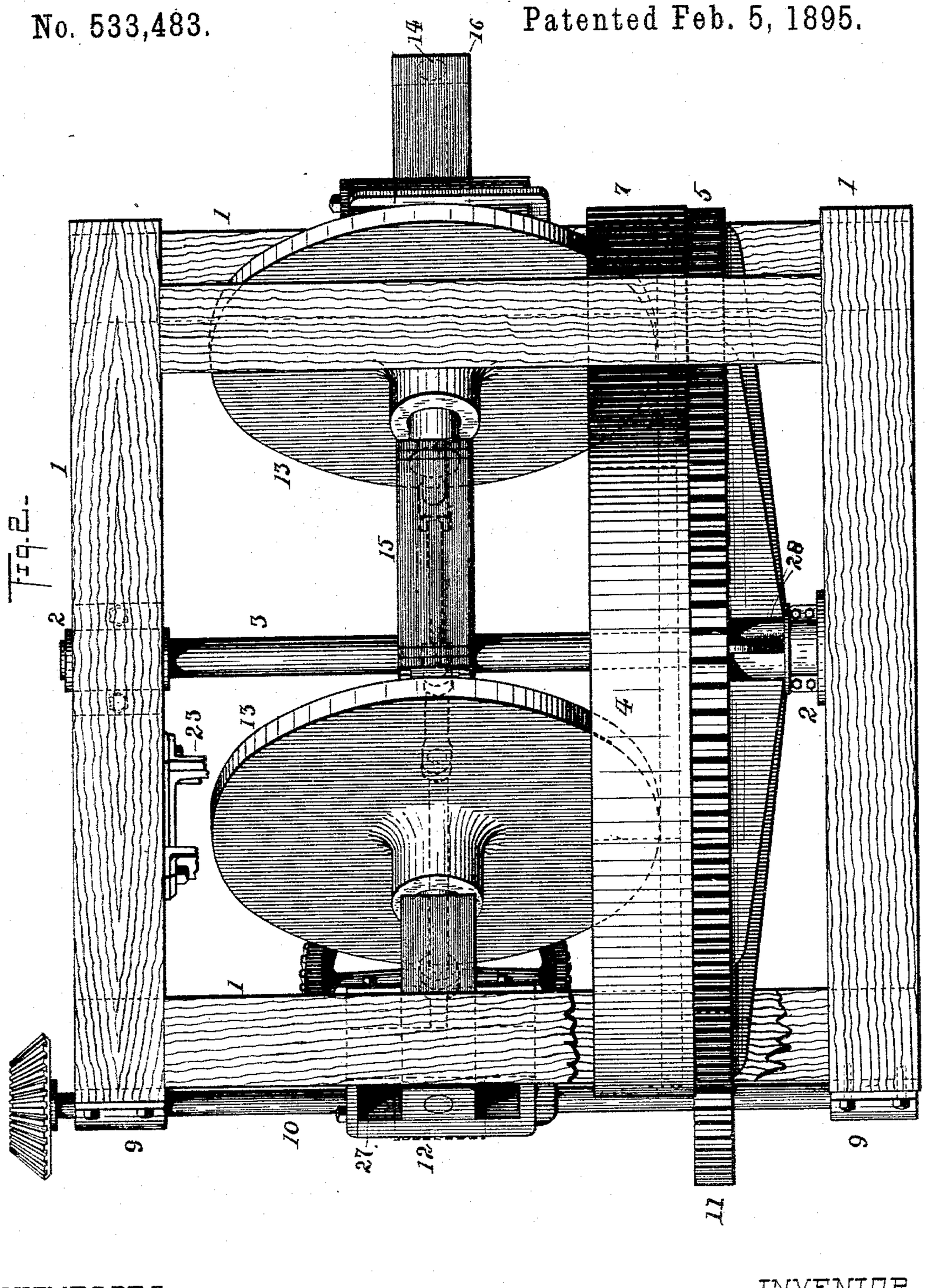

WITNESSES

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(No Model.) 3 Sheets—Sheet 3.

D. A. MUNROE.

CLAY MILL.

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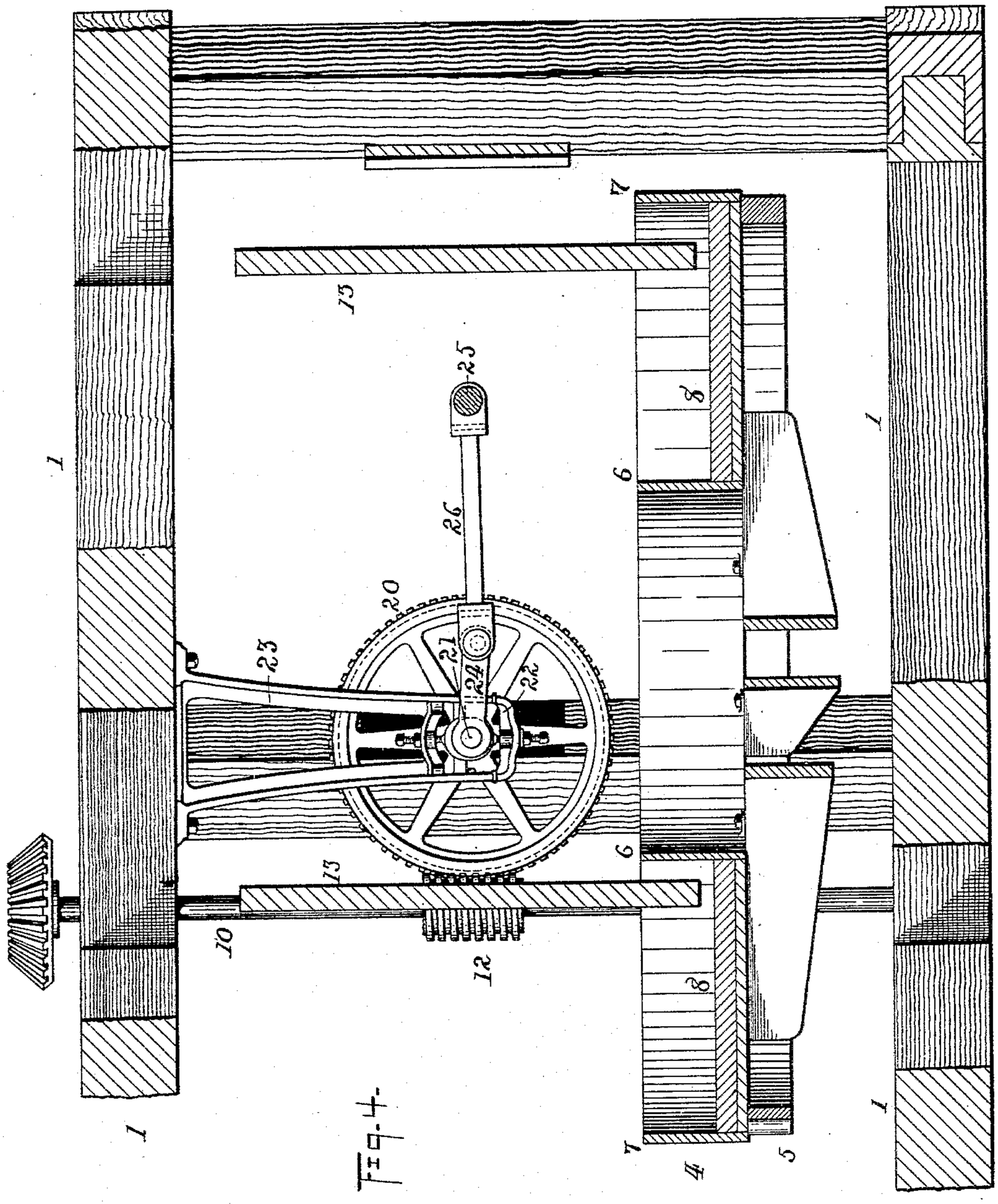

Fig. 4.

WITNESSES
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UNITED STATES PATENT OFFICE.

DANIEL A. MUNROE, OF CUYAHOGA FALLS, OHIO.

CLAY-MILL.

SPECIFICATION forming part of Letters Patent No. 533,483, dated February 5, 1895.

Application filed September 4, 1894. Serial No. 522,154. (No model.)

To all whom it may concern:

Be it known that I, DANIEL A. MUNROE, a citizen of the United States, residing at Cuyahoga Falls, in the county of Summit and State of Ohio, have invented a certain new and useful Improvement in Clay-Mills, of which the following is a specification.

My invention has relation to improvements in clay mills in which a series of wheels suitably mounted are arranged to run on and be reciprocally moved across a horizontally revolving bed.

The objects of my invention are to provide a mill made in as few parts as possible consistent with the work required; and to provide a simple and effective device for rocking the wheels to and fro across the bed.

To the aforesaid objects my invention consists in the peculiar and novel construction, combination and arrangement of the various parts hereinafter designated and then specifically claimed, reference being had to the accompanying drawings forming a part of this specification.

In the accompanying drawings in which similar reference numerals indicate like parts in the different views, Figure 1, is a plan of my improved clay mill. Fig. 2, is a side elevation of the same. Fig. 3, is a form of shovel used in connection with this mill. Fig. 4, is a vertical section of Fig. 1, at the dotted line, X—X.

In the drawings 1, is a frame preferably of wood, bearing in its upper and lower center cross pieces journal boxes 2, to receive a vertical revoluble shaft 3, carrying on its lower end a hub 28, with radial arms integral therewith and supporting at their outer ends an annular horizontal bed 4, to the under face of which and at its outer edge is fastened a gear 5. The bed 4, is provided with inner and outer curbings, 6 and 7 respectively, and bed plate 8, on which the wheels run.

Mounted in bearings 9, on the outside of frame 1, is a vertical counter shaft 10, bearing at its lower end a pinion 11, meshing in the gear 5. Near its center is a worm 12, to be hereinafter mentioned. At its upper end is a gear wheel or pulley by which motion is communicated to it.

The crushing apparatus consists of a pair of wheels 13, mounted on irrevoluble axles 14, the inner ends whereof are fastened to a yoke 15, which straddles the shaft 3. These wheels 13, are counter-bored to receive collars which serve to prevent wheels 13, sliding longitudinally of the axles on which they are mounted as they are reciprocated across the bed. The outer ends of the axles 14, fit in shoes or boxes 16, having rectangular exteriors and to which they are either keyed fast or held by pins, but the mode of fastening is not deemed necessary to show. The boxes 16, fit in vertically elongated slides 27, on the sides of two of the uprights of the frame 1. The slides 27, permit the boxes free vertical motion whenever the wheels 13, encounter unusually hard material and also are open on their ends to allow the boxes 16, to play in and out as the wheels 13 traverse the face of the bed. The inner side faces of the slide 27 are provided with vertical friction rollers 29, shown in Fig. 1, in dotted lines. These are used to lessen the friction of the boxes 16, playing through the slides 27. These shafts and wheels are reciprocated across the bed as follows: The worm 12, on the counter shaft 10, meshes in a worm wheel 20, on a shaft 21, mounted at one end in a box on the frame 1, (shown in dotted lines in Fig. 1,) and at the other end in a box 22, in the drop hanger 23. On the inner end of this shaft 21, is a crank 24, connected to a pin 25, on one of the axles 14 by the connecting rod 26.

Fig. 3, is a shovel used for removing the tempered clay but nothing is claimed therefor.

The operation of this mill is as follows:—Motion is communicated to the shaft 10, by any desired means which in turn revolves the bed 4, by means of the pinion 11, and the gear 5, at the same time the worm 12 slowly turns the worm-wheel 20 and thus revolving the crank 24, and which through the connecting rod 26, and pin 25, reciprocates both wheels across the face of the bed.

What I claim is—

A clay mill of the class designated having a frame bearing a central vertical revoluble shaft mounted therein and bearing a horizontal annular bed, mounted on radial arms on a hub on said shaft, said bed carrying a rack on its under face a counter shaft bearing a power driven gear; a worm; and a pinion arranged to mesh with said rack and re-

volve said bed, said worm adapted to actuate a worm-wheel on a separate shaft mounted in said frame carrying a crank; in combination with a pair of crushing wheels mounted on separate axles, said axles being attached at their inner ends to a yoke surrounding said central shaft, their outer ends being anchored in vertically moving boxes against revolution with said bed, said wheels being arranged to be reciprocated across said bed by said crank attached to said yoke intermediate of said wheels substantially as shown and described.

In testimony that I claim the above I hereunto set my hand.

DANIEL A. MUNROE.

In presence of—

C. E. HUMPHREY,

IDA OSER.