

(No Model.)

2 Sheets—Sheet 1.

W. W. RYDER.
SAW TOOTH SWAGE.

No. 484,163.

Patented Oct. 11, 1892.

FIG. 4.

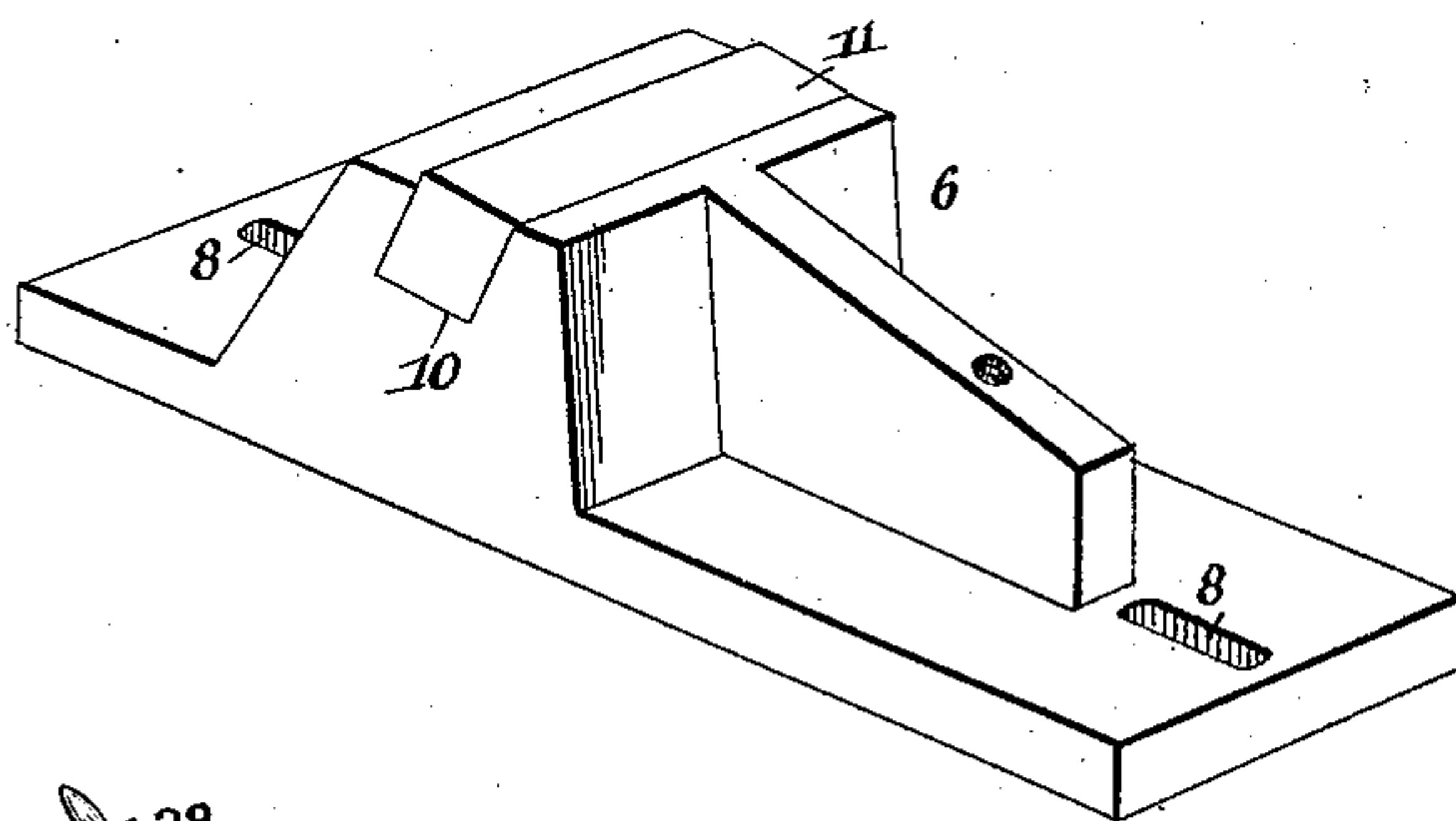
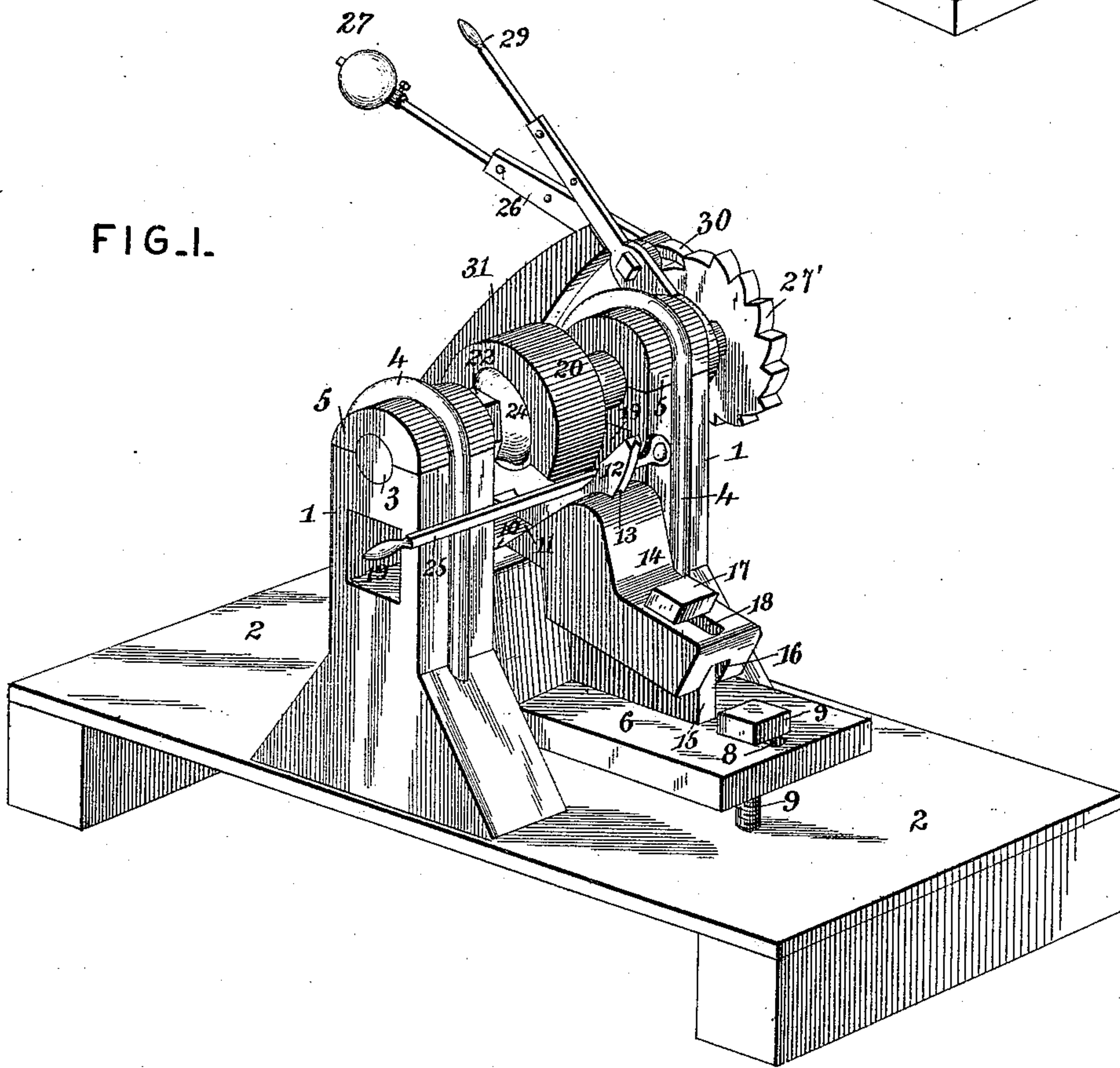


FIG. 1.



Witnesses

Inventor

James H. McLaughlin
H. J. Riley

By *his* Attorneys,

William W. Ryder

C. A. Snow & Co.

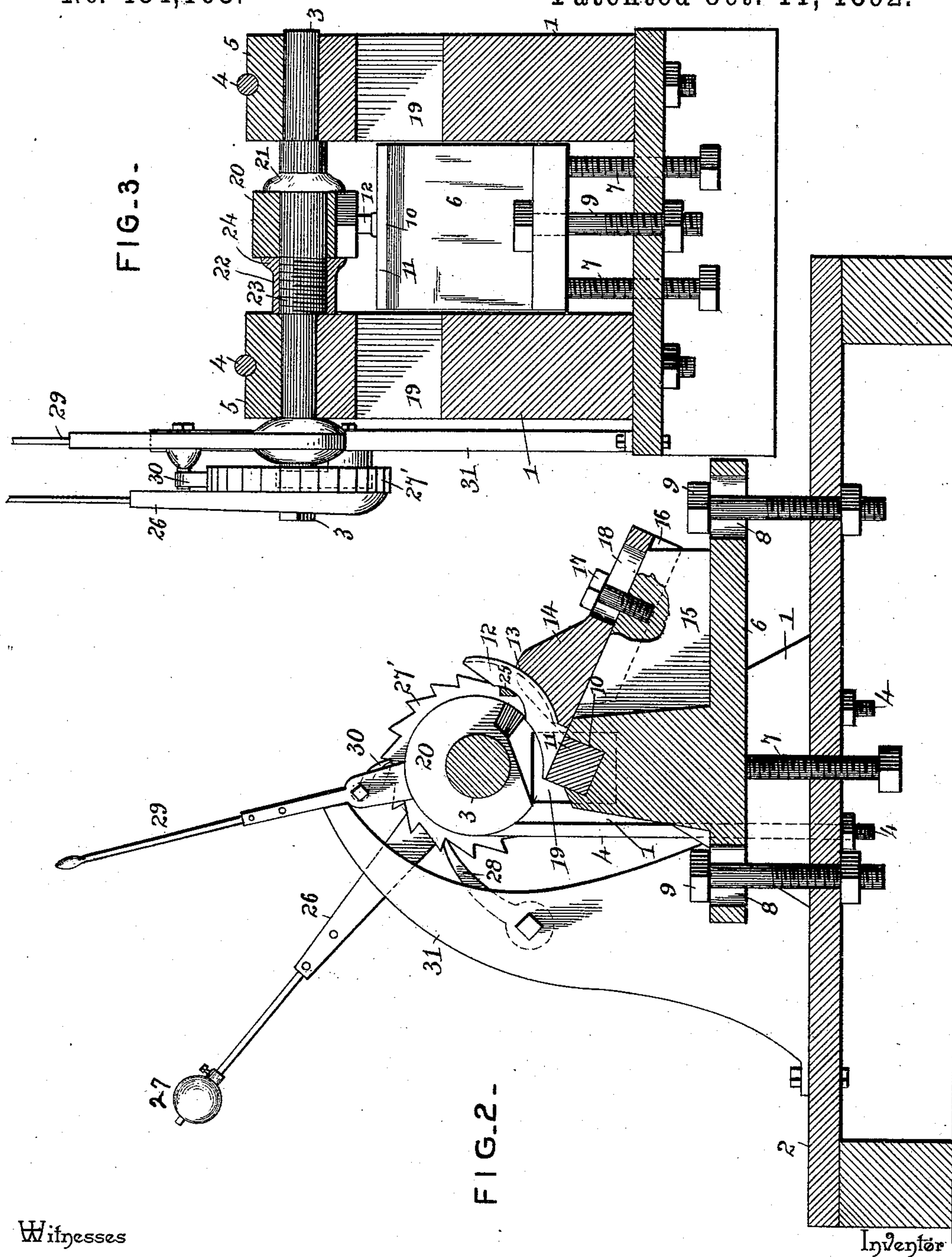
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UNITED STATES PATENT OFFICE.

WILLIAM WILLIS RYDER, OF ALSEA, OREGON.

SAW-TOOTH SWAGE.

SPECIFICATION forming part of Letters Patent No. 484,163, dated October 11, 1892.

Application filed February 29, 1892. Serial No. 423,271. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM WILLIS RYDER, a citizen of the United States, residing at Alsea, in the county of Benton and State of Oregon, have invented a new and useful Saw-Tooth Swage, of which the following is a specification.

The invention relates to improvements in machines for swaging insertible saw-teeth.

The object of the present invention is to provide a simple and inexpensive machine adapted for swaging insertible saw-teeth and capable of being readily adjusted to accommodate saw-teeth of various kinds and sizes.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a swaging-machine constructed in accordance with this invention. Fig. 2 is a central longitudinal sectional view. Fig. 3 is a transverse sectional view. Fig. 4 is a detail perspective view of the anvil.

Like numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates bearings rising from a base 2 and having journaled in them a shaft 3 and secured to the base by stirrup-bolts 4, which also secure caps or upper portions 5 of the bearings. The bearings are arranged on opposite sides of an anvil 6, which is centrally mounted or fulcrumed on supporting-bolts 7 and which is provided at its ends with elongated perforations 8 to receive adjusting-bolts 9 for securing the anvil at the desired inclination. The anvil is tilted on the bolts 7, which are arranged in threaded openings of the base 2 and which are adapted to adjust the anvil vertically to raise and lower the same. The anvil is provided with a transverse groove 10, and arranged in the groove is a longitudinally-adjustable die 11, adapted to support a saw-tooth 12, which rests upon the die and is held in a groove 13 of an adjustable tooth-rest 14. The adjustable tooth-rest 14 is mounted on a flange 15, having an inclined upper edge, which is arranged in the same plane as the upper bearing-face of the die, and the saw-tooth rest 14 is provided in its lower face with

a groove 16 to receive the flange 15, whereby the tooth-rest is adapted to be adjusted longitudinally to accommodate saw-teeth of different sizes. The tooth-rest is secured in its adjustment by a set-screw 17, which is arranged in a slot 18 of the tooth-rest and engages a threaded opening of the flange 15. The die is rectangular in cross-section, and it may be removed from the groove 10 and turned to expose any one of its faces, and as the wear on the die is just at the point or place where the tooth rests the die is made to last considerably longer by being longitudinally adjustable, and the bearings 1 are provided with openings 19, arranged opposite the ends of the die to permit the latter to be shifted longitudinally.

The saw-tooth is swaged while in a heated condition by a removable cam 20, which is carried by the shaft 3. The swaging-cam 20 is adapted to be removed for grinding as it becomes worn and may be adjusted on the shaft to compensate for such wear. It is secured between a stationary flange or collar 21, formed integral with the shaft, and a nut 22, arranged on a threaded portion 23 of the shaft and provided with an integral annular flange or collar 24 and adapted to be screwed up against the swaging-cam 20, which is provided with a central opening.

The tooth is held in position for swaging by a lever 25, fulcrumed on one of the bearings and arranged transversely of the anvil. The shaft is actuated by a power-lever 26, which is secured on a polygonal portion of the shaft, and is provided with an adjustable weight 27, by means of which the striking-force of the cam may be regulated. The lever 26 is connected with a ratchet-wheel 27', which is preferably formed integral with the lever, and which is held against retrograde rotation by a pawl 28. The ratchet-wheel is actuated by a hand-lever 29, mounted on the shaft and provided with an actuating-pawl 30, arranged to engage the ratchet-wheel. By drawing the hand-lever 29 forward the weighted lever 26 is lifted and is carried beyond a vertical position and is allowed to fall, thereby carrying the swaging-cam in contact with the tooth to be swaged, and the force from the fall of the weighted lever swings the same upward on the opposite side of the machine. The weighted

lever is held in this position by the pawl 28, which prevents retrograde rotation of the ratchet-wheel. The hand-lever is supported by a rest 31, which is suitably mounted on the base.

What I claim is—

1. In a machine for swaging saw-teeth, the combination of a base, an anvil fulcrumed intermediate of its ends on the base, and adjusting-screws arranged at the ends of the anvil to secure the same at any desired inclination in either direction, substantially as described.

2. In a saw-swaging machine, the combination of a base, vertically-adjustable screws mounted on the base, an anvil fulcrumed intermediate of its ends on the supporting-screws, and the adjusting-screw arranged at the ends of the anvil to secure the latter at any desired inclination in either direction, substantially as described.

3. In a machine for swaging saw-teeth, the combination of an anvil provided with a transverse groove, a straight polygonal die of the same thickness throughout its length, arranged in said anvil and capable of longitudinal adjustment to present different portions of the same face and adapted to present any one of its faces, and a tooth-rest mounted on the anvil, substantially as described.

4. In a machine for swaging saw-teeth, the combination of an anvil provided with a flange

having an inclined upper edge, a tooth-rest provided in its lower face with a groove to receive the flange and capable of longitudinal adjustment thereon, and means for securing the tooth-rest in its adjustment, substantially as described.

5. In a machine for swaging saw-teeth, the combination of a base, the bearings rising therefrom and provided with polygonal openings 19, an anvil arranged between the bearings and having an adjustable polygonal die of a size to pass through the openings 19, a tooth-rest mounted on the anvil, and a shaft journaled in said bearings and carrying a swaging-cam, substantially as described.

6. In a machine for swaging saw-teeth, the combination of bearings, a shaft journaled therein, a power-lever rigidly connected with the shaft, a ratchet-wheel similarly secured to the shaft, a hand-lever loosely mounted on the shaft and provided with a pawl to engage the ratchet-wheel, and a weight adjustably mounted on the power-lever, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM WILLIS RYDER.

Witnesses:

MARION HAYDEN,
T. R. CHANDLER.