

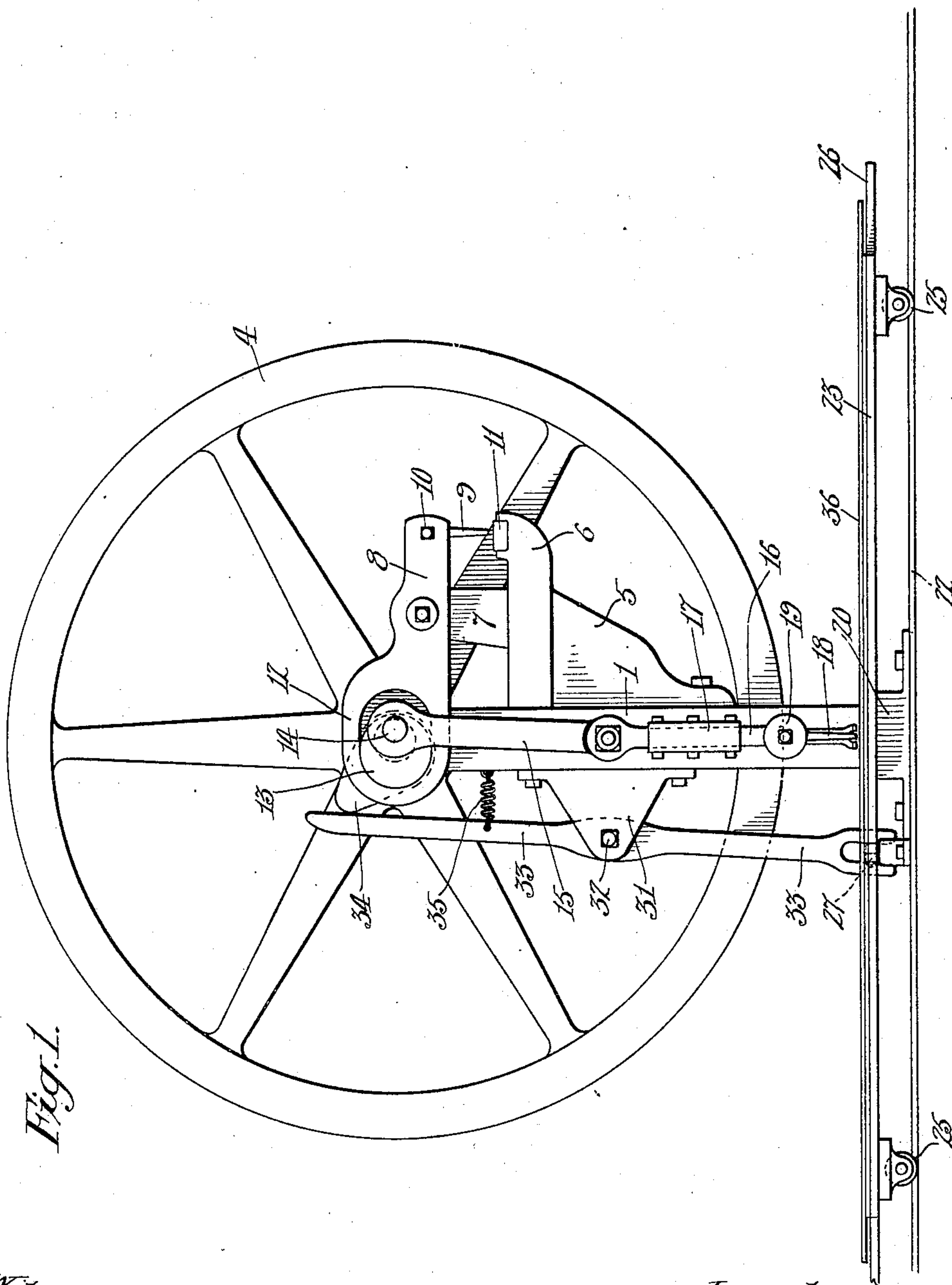
No. 887,910.

PATENTED MAY 19, 1908.

M. M. BEASLEY.
PUNCHING AND SPACING MACHINE.

APPLICATION FILED SEPT. 24, 1907.

2 SHEETS—SHEET 1.



Witnesses:
Frank L. Mahan
Louis W. Gratz

Inventor,
Mert M. Beasley.
Tammendy and Hackley
his attys

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2 SHEETS—SHEET 2.

Fig. 3.

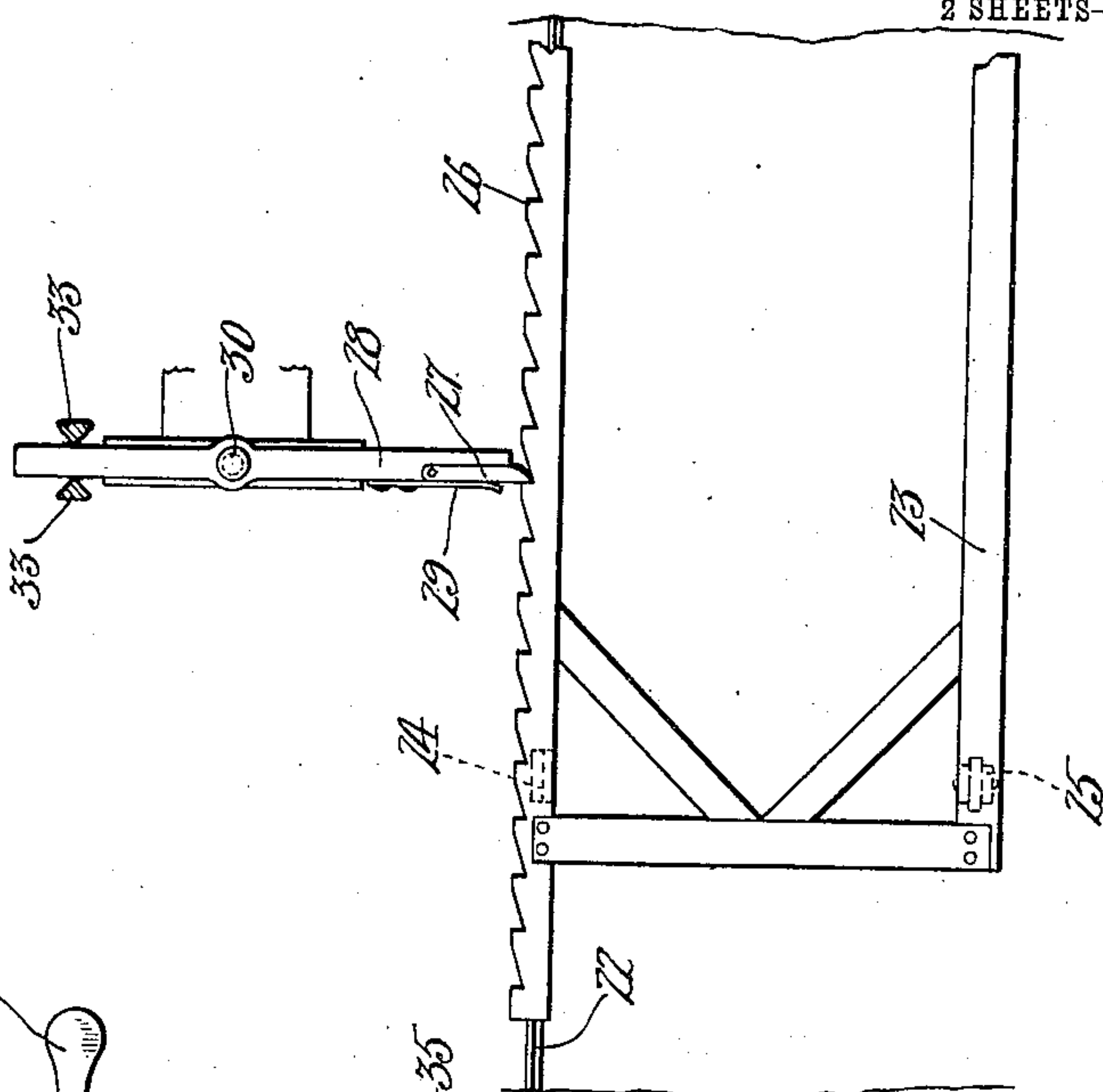
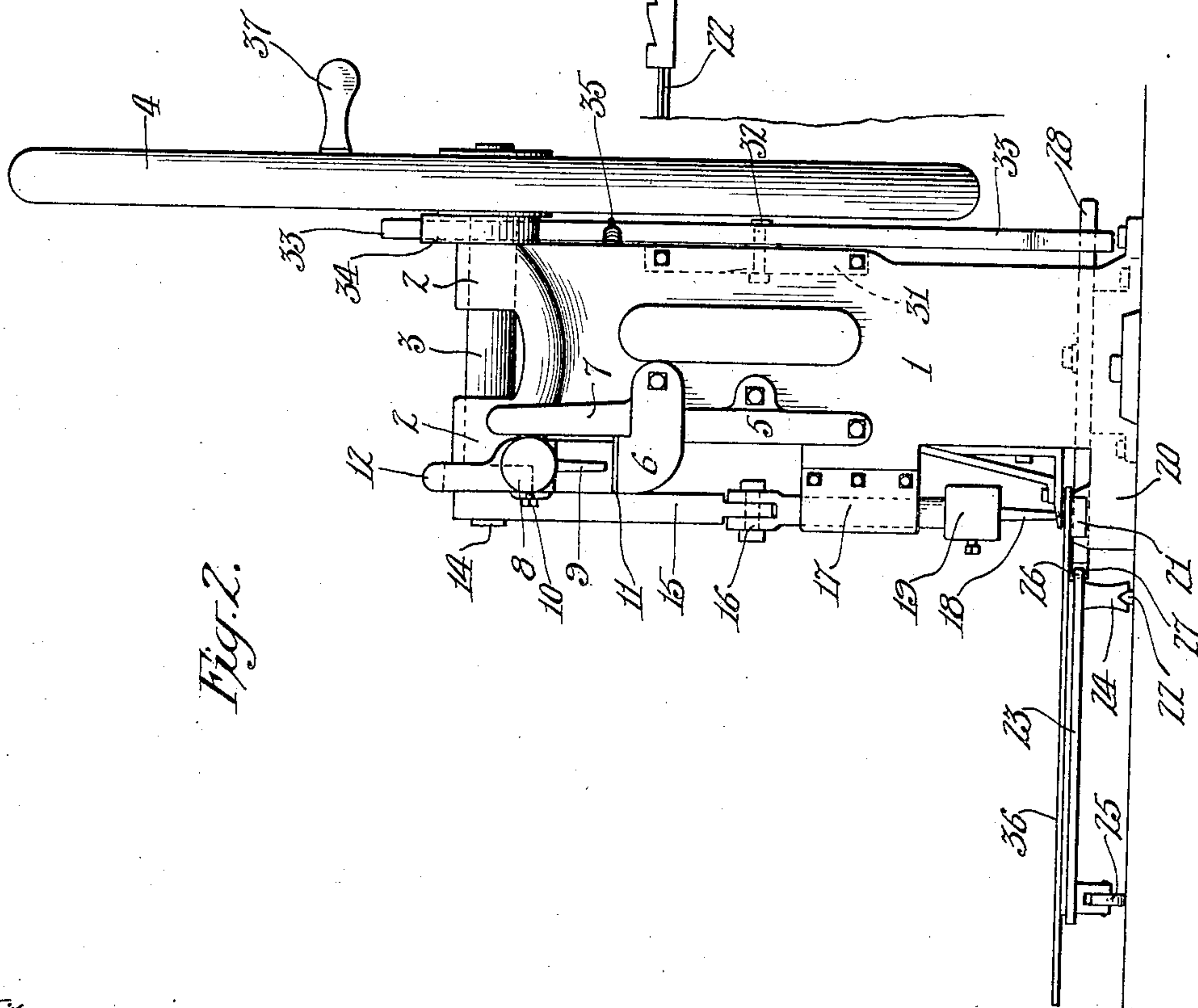


Fig. 2.



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UNITED STATES PATENT OFFICE.

MERT M. BEASLEY, OF SAN BERNARDINO, CALIFORNIA.

PUNCHING AND SPACING MACHINE.

No. 887,910.

Specification of Letters Patent.

Patented May 19, 1908.

Application filed September 24, 1907. Serial No. 394,418.

To all whom it may concern:

Be it known that I, MERT M. BEASLEY, a citizen of the United States, residing at San Bernardino, county of San Bernardino, State of California, have invented a new and useful Punching and Spacing Machine, of which the following is a specification.

This invention relates to a machine designed for punching sheet metal either flat or of tubular construction, such as in the ends of pipes, elbows, etc., and to provide means, in punching flat work, for imparting an intermittent movement to the work under the punch, so that each perforation made by the punch will be automatically spaced a requisite distance from the other perforations without requiring a workman to draw along the work and line it up under the punch.

Other objects and advantages relate to details of construction and operation which will be hereinafter pointed out.

In the accompanying drawings:—Figure 1 is a front elevation of the machine. Fig. 2 is a side elevation. Fig. 3 is a plan view of a portion of the carriage and the adjacent part of the spacing mechanism.

1 designates the main frame of the machine which is provided with journals 2 in which is mounted a shaft 3 carrying a fly-wheel 4. As shown in Fig. 1, a bracket 5 which is bolted to the frame 1 supports a die arm 6, and a standard 7 projects up from the die arm 6. Pivoted to the bracket 7 above the die arm 6 is a punch lever 8, the outer end of which carries the punch 9 which may be detachably secured therein in any desired manner, as for example by set screw 10, the die arm 6 carrying the die 11 with which the punch coacts. The die 11 may be secured to the die arm 6 in any well known manner. The punch lever 8 has a slotted end 12 within which an eccentric 13 operates, the eccentric being mounted on the shaft 3. By rotating the shaft 3, the cam 13 acting in slotted end 12 rocks the punch arm 8 and thus brings punch 9 into the die 11, this part of the device being particularly designed for punching holes in the ends of pipes, elbows and the like, the end of the pipe to be punched being slipped over the die arm 6 and rested upon the die 11 underneath the punch 9.

A crank pin 14 projects from the end of shaft 3 outside the eccentric 13 and operates a connecting rod 15, the lower end of which is pivoted to a punch rod 16 which is slidably

mounted in a way 17 secured to the frame 1. Secured to the lower end of the punch rod 16 is the punch 18, the punch rod 16 having a chuck 19 of any suitable construction for the attachment of the punch 18. As the shaft 3 rotates, the punch is reciprocated by the sliding punch rod 16.

The frame 1 has a foot 20 in which the die 21 is secured in any desired manner underneath the punch 18. A track rail 22 is arranged on the front near the frame 1 and extends past the foot 20 of the frame, and guided by the track 22, and partially supported thereby, is a carriage 23 which near one edge is provided with notched lugs 24 which engage the track rail 22, and which carriage at its outer edge is supported by rollers 25 which ride on the front, thus the track rail 22 guides the carriage in a rectilinear path and supports the inner edge of the carriage, while the rollers 25 support the outer edge of the carriage.

As clearly shown in Fig. 3, the carriage 23 along its inner edge is provided with a rack 26 which is actuated by a dog 27 pivoted to a lever 28, the latter having a spring 29 which bears against dog 27 to restore the dog. The lever 28 is pivoted at 30 to the frame 1 to swing in a longitudinal plane, as shown in Fig. 2. A bracket 31 is bolted to the frame 1, and pivoted at 32 to the bracket 31 is an operating lever 33, the upper end of which is actuated by a cam 34 mounted on shaft 3, and the lower end of the operating lever 33 is forked and engages the lever 28. A coil spring 35 which is attached to the frame 1 and to the upper end of operating lever 33 serves to retract the lever after the cam 34 has advanced the lever, thus as shaft 3 revolves the cam 34 rocks lever 33, and the latter rocks lever 28 which actuates dog 27 which operates on the rack 26 to advance the carriage 23 step by step. The work, designated 36, may be clamped to the carriage in any preferred manner, not necessary to show, and that edge of the work which is to be punched projects over the die 21, as shown in Fig. 2. The cam 34 is so positioned, with respect to the crank pin 14, that the dog is caused to actuate the carriage forward while the punch 18 is withdrawn from the work, while when the punch 18 is in the work the dog 27 is recovering and being engaged with the succeeding tooth of the rack, so that upon withdrawal of the punch from the work the dog will actuate the carriage one step and

bring the work in position for the next punching operation. The machine may be operated obviously either by power or by hand. In the drawings I have shown the fly-wheel 4
5 as being equipped with a handle 37 for hand operation.

What I claim is:—

1. In a punching and spacing machine, a frame, a shaft journaled therein, a cam carried by the shaft, an operating lever pivoted to the frame and actuated in one direction by said cam, a spring for actuating said operating lever in the other direction, a lever pivoted to the frame and engaging a slotted portion of said operating lever, a dog carried by the second named lever, a carriage for supporting the work and provided with a rack coacting with said dog, a sliding punch rod mounted on the frame and carrying a punch, and a crank on the shaft connected with the punch rod for operating the same.

2. In a punching and spacing machine, a frame, a shaft journaled therein, a cam carried by the shaft, an operating lever pivoted

to the frame and actuated in one direction 25 by said cam, a spring for actuating said operating lever in the other direction, a lever pivoted to the frame and engaging a slotted portion of said operating lever, a dog carried by the second named lever, a carriage for supporting the work and provided with a rack coacting with said dog, a sliding punch rod mounted on the frame and carrying a punch, a crank on the shaft connected with the punch rod for operating the same, a die arm 35 extending laterally from the frame and having a standard, a punch lever pivoted to the standard and having a slotted end, and a cam on said shaft operating in the slotted end of the punch lever. 40

In testimony whereof, I have hereunto set my hand at San Bernardino California this 16th day of September 1907.

MERT M. BEASLEY.

In presence of—

W. E. LEONARD,

W. H. SWAN.