

No. 608,562.

Patented Aug. 2, 1898.

C. F. THURBER.
PUNCH AND SHEAR MACHINE.

(Application filed Mar. 22, 1897.)

(No Model.)

Fig. 1.

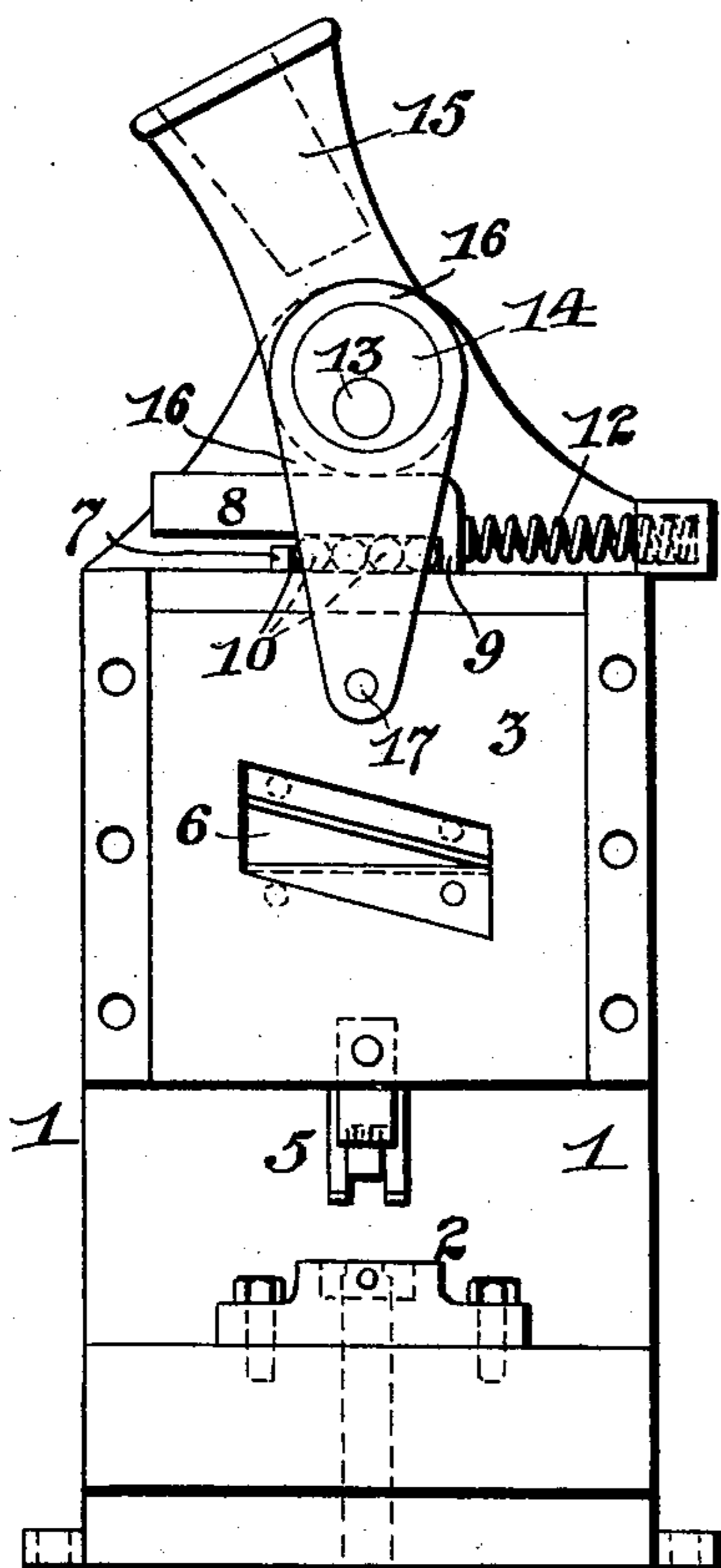
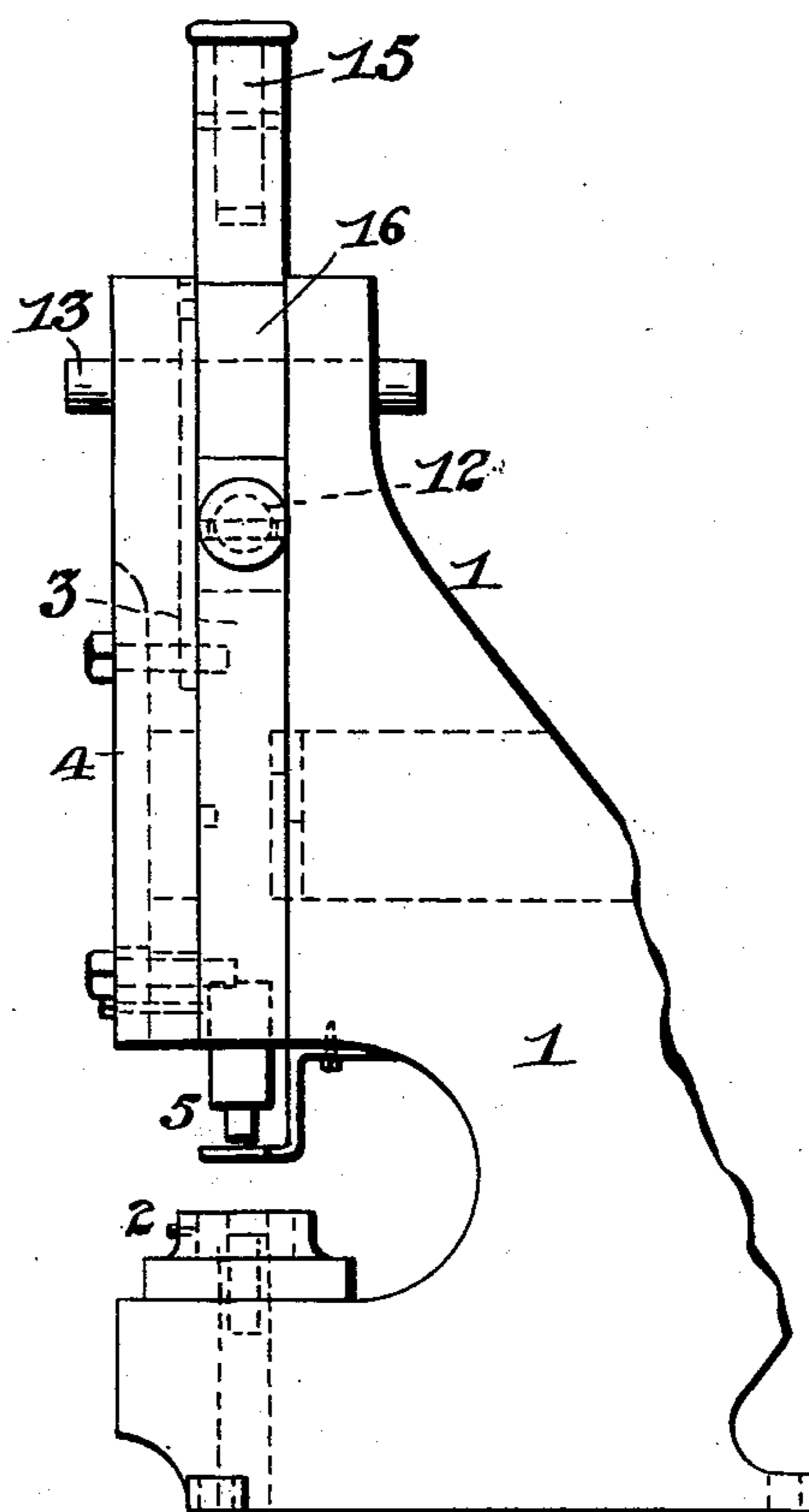


Fig. 2.



WITNESSES

WITNESSES
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UNITED STATES PATENT OFFICE.

CHARLES F. THURBER, OF OLEAN, NEW YORK, ASSIGNOR OF THREE-
FOURTHS TO OLIVER F. CARLEY, FREDERICK L. GLEASON, WILLIAM
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PUNCH AND SHEAR MACHINE.

SPECIFICATION forming part of Letters Patent No. 608,562, dated August 2, 1898.

Application filed March 22, 1897. Serial No. 628,718. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. THURBER, a citizen of the United States, residing at Olean, in the county of Cattaraugus and State of New York, have invented certain new and useful Improvements in Punch and Shear Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to machines for punching and shearing metal; and its object is to provide an improved construction of the same whereby the friction of the parts is greatly diminished, so that the machine will be more efficient in operation.

The invention consists, essentially, in a frame provided with ways, in which works a vertically-movable gate having an upwardly-extending lip on its upper side near one end, a horizontally-movable plate having a downwardly-extending lip at one end, a series of rollers interposed between said plates upon which said plate is supported and moves, a coiled spring connected with said plate for returning it to normal position, and an eccentric for depressing said gate and plate.

It also consists in mechanism connected with said gate and eccentric for raising the gate after it has been depressed, all of which will be hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a front view of a metal punching and shearing or cutting machine constructed in accordance with my invention, the guide-plate being removed. Fig. 2 is a side elevation of the same, the guide-plate being bolted in place.

In the said drawings the reference-numeral 1 designates the frame of the machine, preferably made of cast-iron, formed at the lower front side with a mortise or recess provided with a die 2. Above this mortise or recess the front of the frame is formed with a rectangular recess, in which is seated a vertically-movable gate or slide 3, consisting of a rectangular metal block, which is held in place by a guide-plate 4, bolted to the front

of the frame. At its lower end this gate is provided with an ordinary punch 5 and intermediate its ends is formed with a slot 6 to receive a knife (not shown) for shearing or cutting metal. The metal to be cut by this knife is presented to the same through an opening in the back of the frame. (Shown by dotted lines, Fig. 2.) The upper side of the gate or slide is provided with an outwardly-extending lip 7.

The numeral 8 designates a laterally-movable plate provided with a downwardly-extending lip 9 at one end, and interposed between this plate and the upper end of the gate or slide is a series of loose antifriction-rollers 10, which are held in place by the said lips. A coiled spring 12 is connected with the frame 1 and the plate 8, the tendency of which is to force the latter inwardly as the gate or slide is elevated. Journaled on a pin 13 at the upper end of the frame is an eccentric 14, provided with a socket 15 to receive a lever or bar for operating the same. The front end of this eccentric projects beyond the socket, and passing around the same is a strap 16, which is secured to a pin 17 at the front of the gate. The purpose of this strap is to elevate the gate or slide after having been depressed.

The operation is as follows: The parts being in the positions shown, the eccentric is turned, which, bearing upon the plate 8, will depress the gate or slide. During this movement the plate 8, which is supported by the rollers, will slide to one side, thus reducing the friction between it and the eccentric, and consequently increasing the power of the punch. To elevate the gate, the eccentric is turned in the opposite direction, when the strap passing around the same will raise the gate. At the same time the plate 8 will be returned to normal position by the coiled spring.

Having thus fully described my invention, what I claim is—

1. In a punching and cutting or shearing machine, the combination with the frame, and the vertically-movable gate or slide having a lip on its upper end, of the laterally-movable

plate having a lip at one end, the loose anti-friction-rollers, and the eccentric, substantially as described.

2. In a punching and cutting or shearing
5 machine, the combination with the frame, the vertically-movable gate or slide having a lip at the upper end, of the laterally-movable plate having a lip at one end, the loose anti-friction-rollers, the coiled spring, the eccen-

tric, the eccentric-strap and the pins on the 10 front of the gate or slide, substantially as described.

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

CHARLES F. THURBER.

Witnesses:

FRED A. CLOSE,
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