

J. Burns.

Making Wood Screws.

N^o 78,512.

Patented Jun. 2, 1868.

Fig. 2.

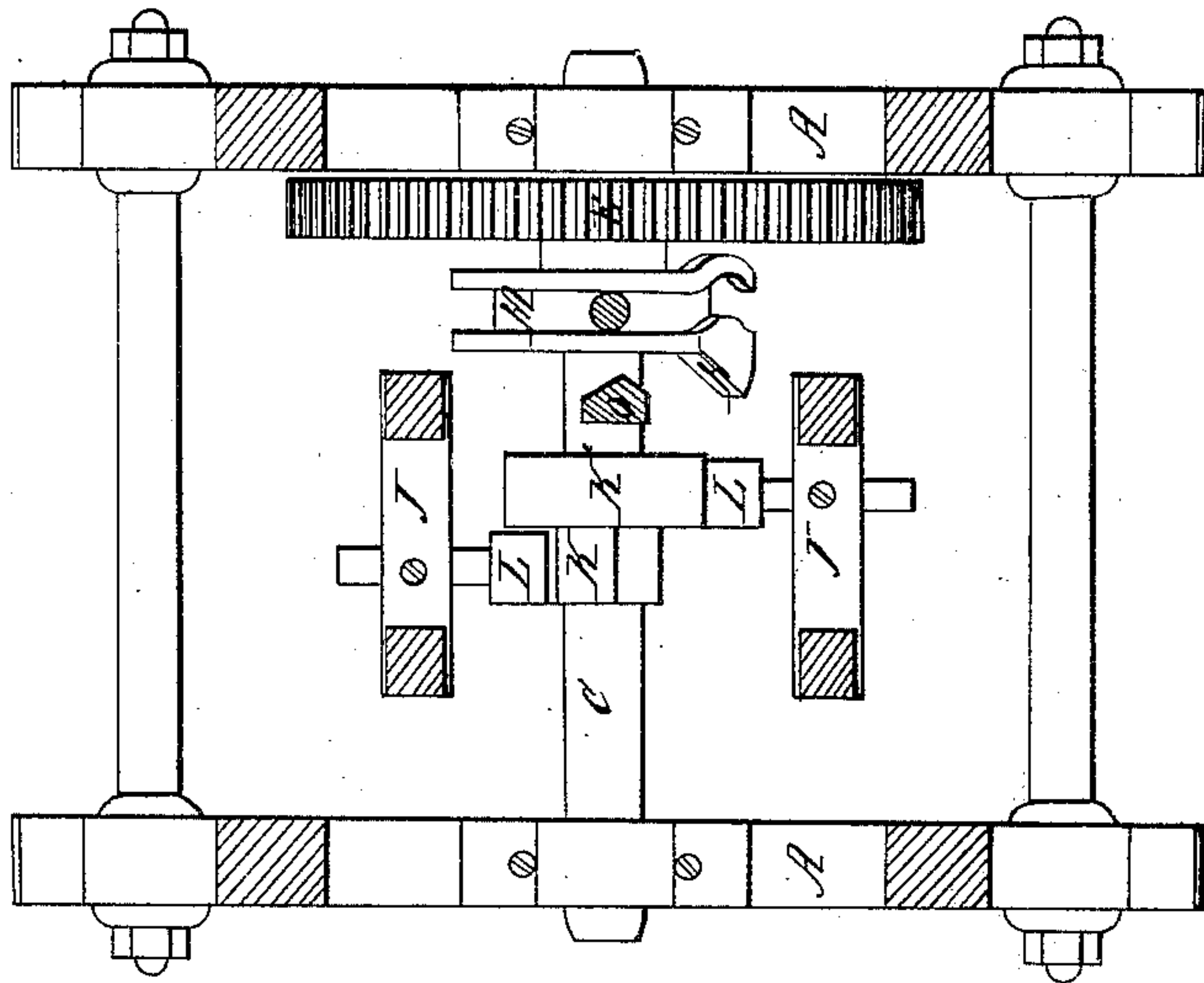
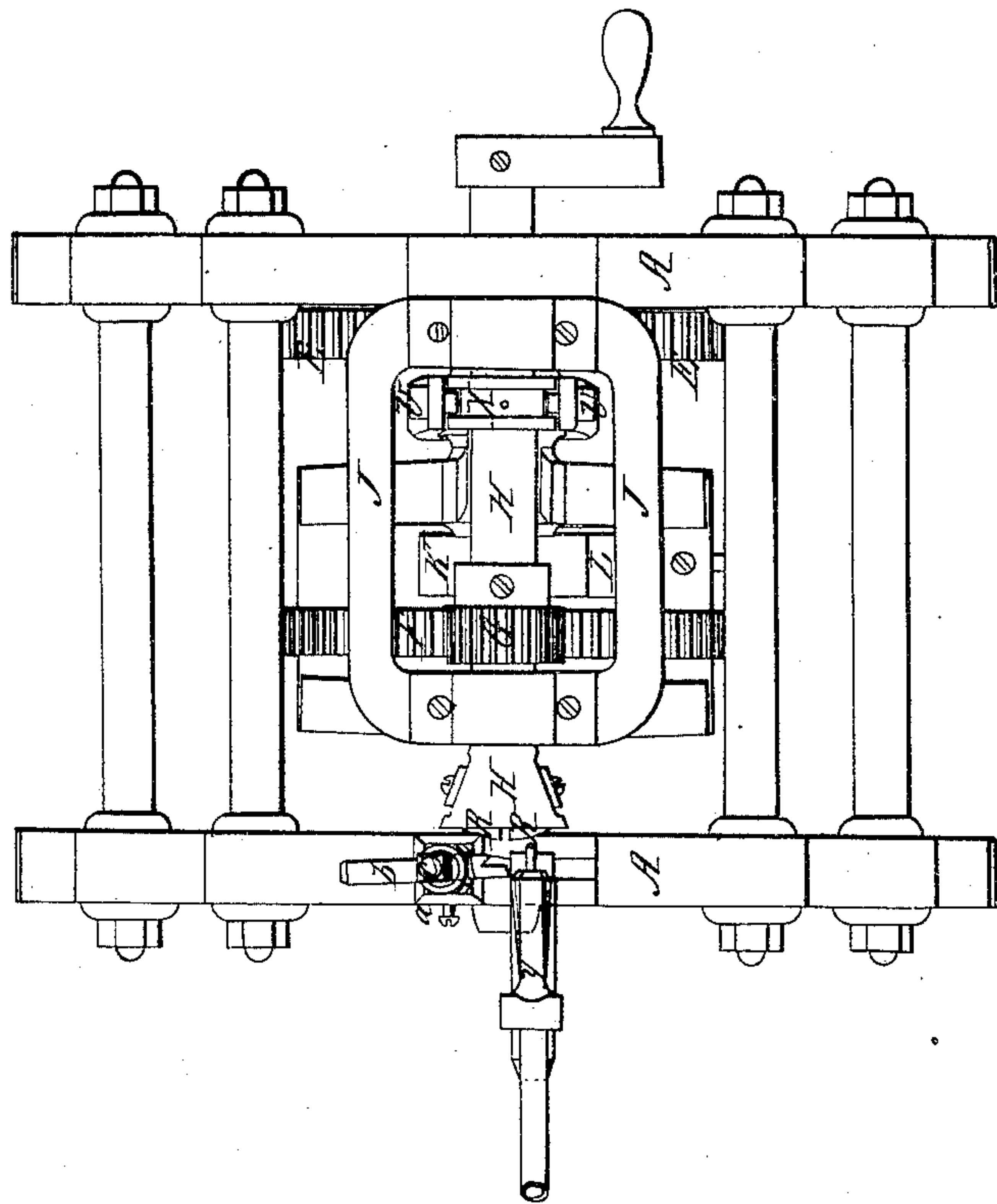


Fig. 1



Witnesses.
Arthur Weiss
Wm. Miller.

Inventor.
James Burns

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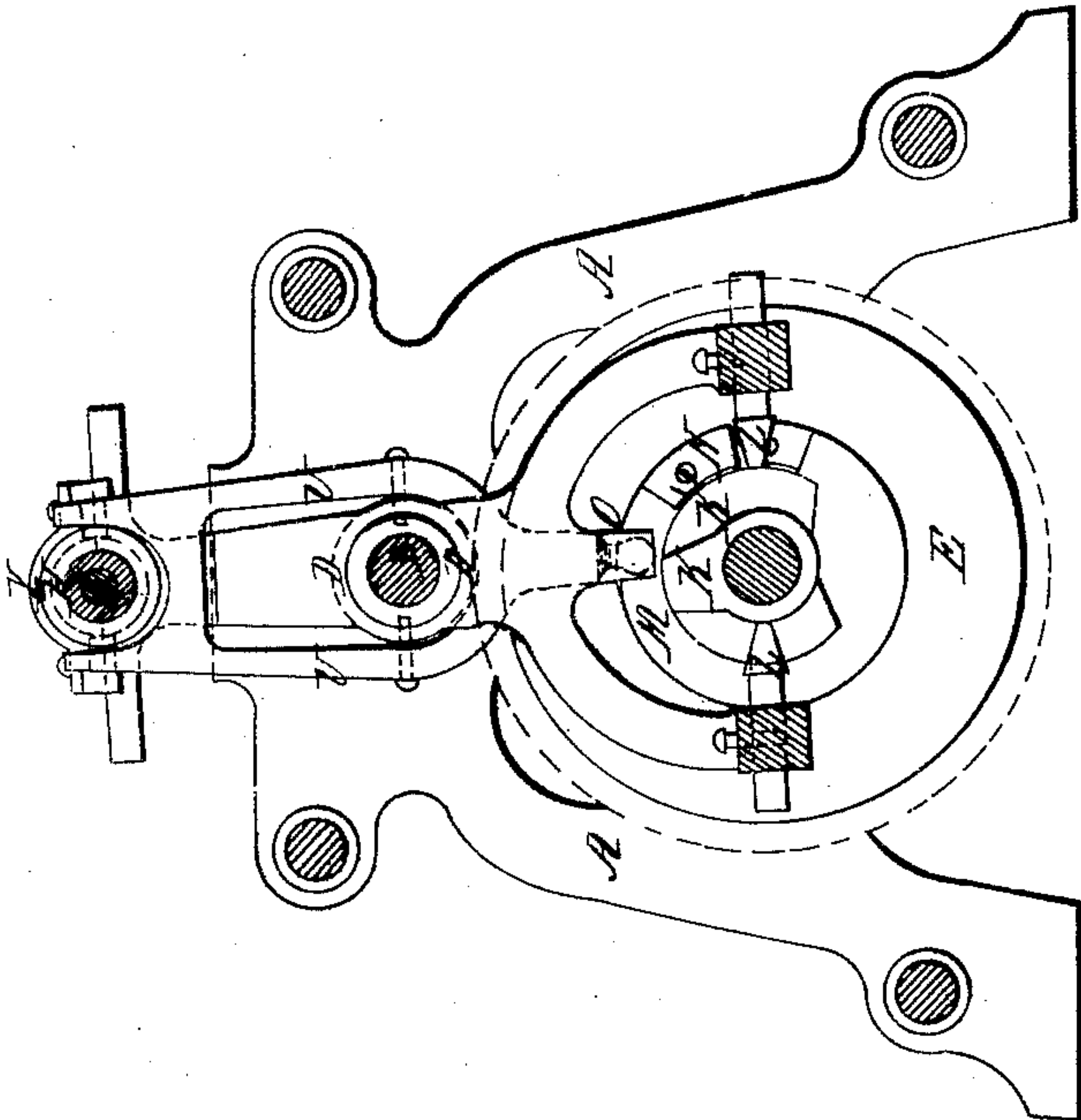
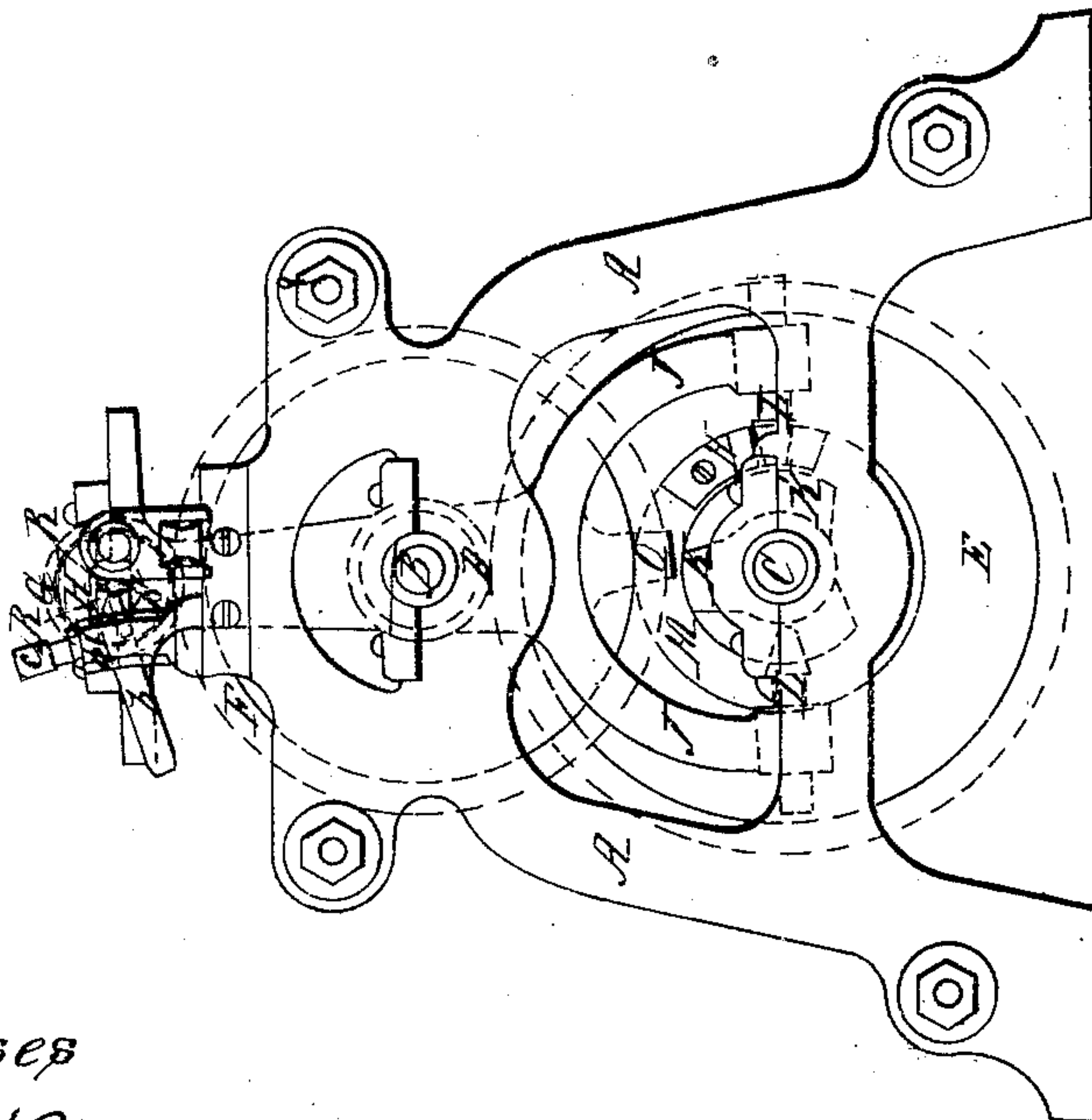


Fig. 3.



Witnesses
Arthur Keill
W. Miller.

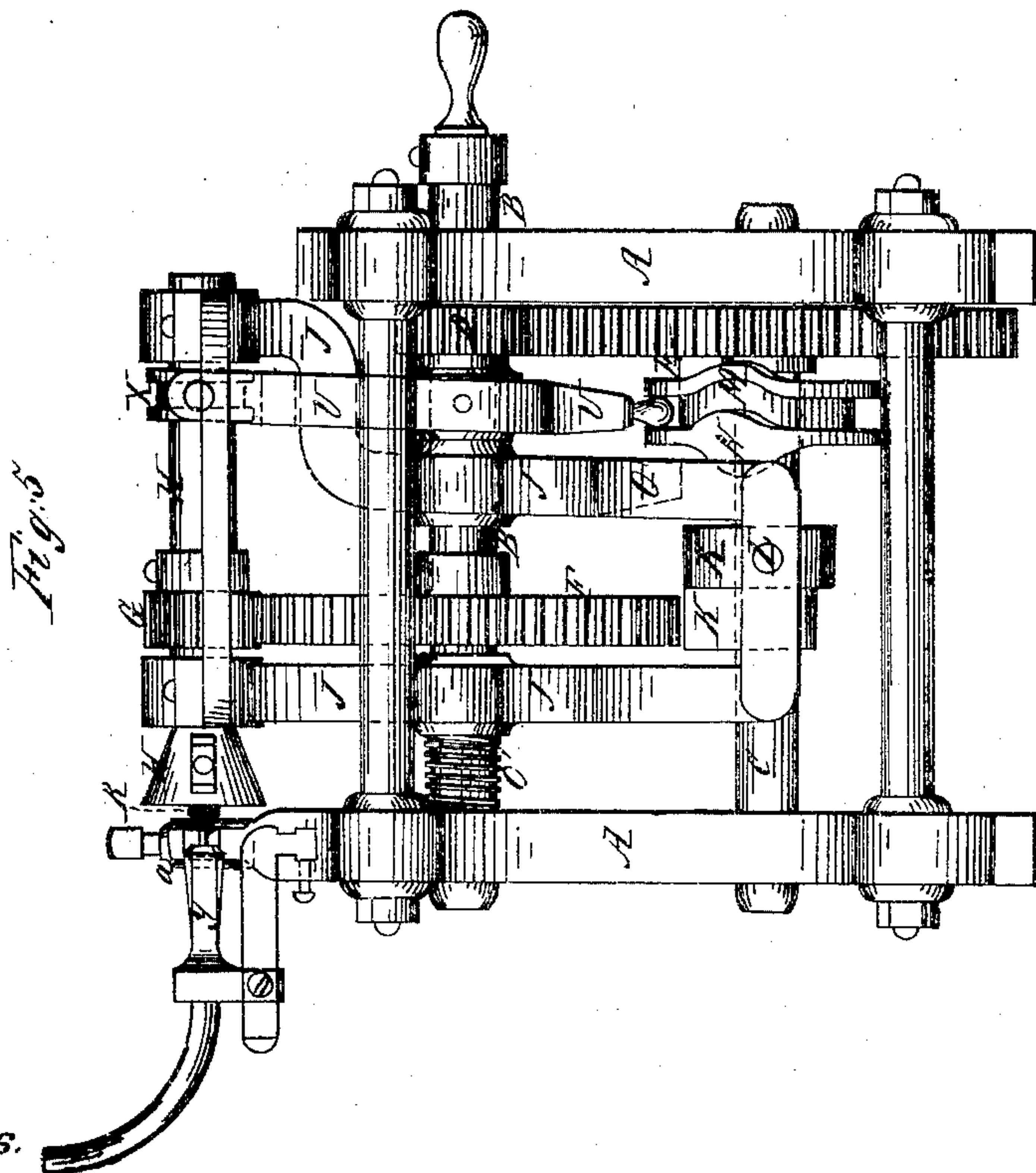
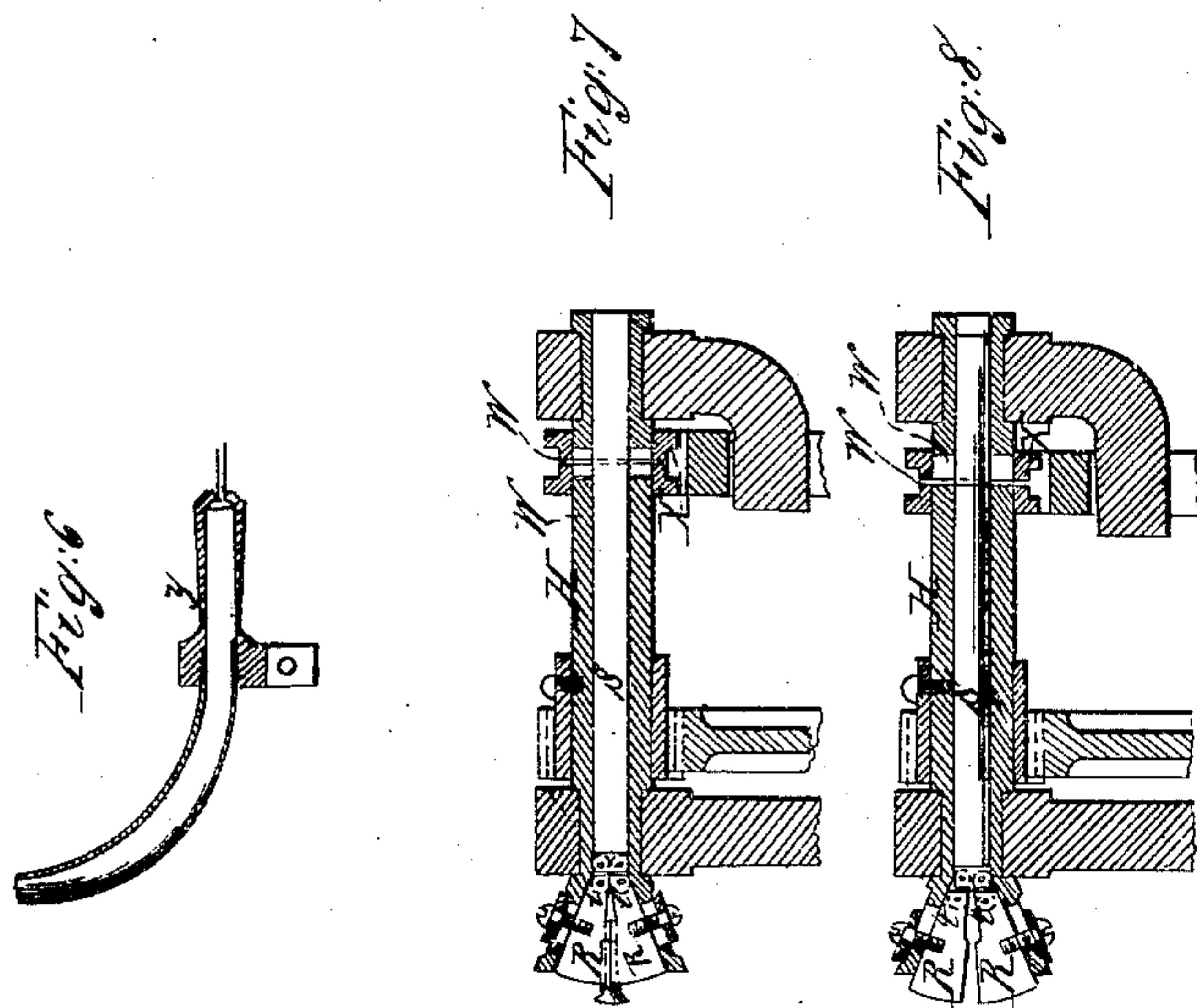
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Witnesses.

Arthur Will

Wm Miller.

Inventor:
James Burns

United States Patent Office.

JAMES BURNS, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF, RICHARD McCULLOUGH, AND JOHN FANNING.

Letters Patent No. 78,512, dated June 2, 1868.

IMPROVED MACHINE FOR SHAVING SCREWS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JAMES BURNS, of the city, county, and State of New York, have invented a new and useful Improvement in Machinery for Making Wood-Screws; and do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification, of which—

Figure 1 is a top view of the machine.

Figure 2, a horizontal section.

Figure 3, an elevation of the feed-end.

Figure 4, a vertical and transverse section.

Figure 5, a front elevation.

Figure 6, sectional view of spring-guide.

Figure 7, a sectional view, representing the gripping-jaws closed, and holding a screw-blank, and

Figure 8 a view of same, with jaws extended after discharge of the blank.

This invention relates to an improvement in machinery for making wood-screws, but principally to that portion employed for turning off the head of the screw-blank, technically termed the shaver, and consists of an oscillating and reciprocating carriage, which carries a gripping holder up to a spring-guide, (into which the screw-blank is fed by its own gravity,) and seizing the screw-blank, carries the same up to a stationary tool, and holds it during the operation of shaving the head of the screw-blank, and after the operation discharges the shaved blank, dispensing with the use of a punch for feed or discharge of the screw-blank.

The movements of the carriage and gripping holders, which render the machine automatic, are performed by the aid of cams on a carrying-shaft, as will be hereinafter explained.

In the said drawings, A indicates the frame of the machine, B the driving-shaft, and C the cam-shaft. On the driving-shaft is placed a pinion, D, which drives a wheel, E, fastened on the cam-shaft, and on said driving-shaft is a wheel, F, which meshes into a pinion, G, by means of which the hollow trumpet-shaft H, containing the gripping holder, is rotated. J represents the oscillating and reciprocating carriage, placed on and swinging loose on the driving-shaft. The oscillating movements of this carriage (or the movements transversely of the driving-shaft) are performed by means of the cams K K', fixed on the cam-shaft C, being brought, at each revolution of the cam-shaft, alternately in contact with adjustable stops L L, projecting from the lower end of the carriage, (see fig. 4,) said oscillating movements being for the purpose of enabling the gripping-jaws placed on the upper side of the carriage, after seizing the screw-blank, to carry it up to the tool, and, after the shaving operation, return for the next blank.

On the cam-shaft C is fixed a grooved cam-wheel, M, having on its inner side a cam or projection, N. This projection, at each revolution of the cam-shaft, is brought in contact with an arm, O, projecting downward from the carriage, by means of which, and a spiral spring, o', on the driving-shaft, the reciprocating movements of the carriage (or movements longitudinally of the machine) are effected, this reciprocating movement of the carriage being for the purpose of bringing the gripping-jaws up to the spring-guide, and receding with the screw-blank.

On the upper end of the carriage J, and supported in suitable bearings, is the hollow trumpet-shaft H H, containing the gripping-jaws R R, and sliding shaft S, (see figs. 7 and 8,) said jaws being connected with said sliding shaft by means of the links t t. These gripping-jaws are closed and extended by means of the cam-wheel M operating a forked lever, U, which in turn operates the sliding shaft S by means of a pin, W, which works in a slot, w, in the trumpet-shaft. Said pin projects through the sliding shaft, and through a grooved collar, X, embraced by the arms of the forked lever U. Y is the spring-guide, into which the screw-blanks are fed by their own gravity. This spring-guide, which slides into ways on top of the frame A, is a tube, and is smaller in diameter at its discharging-end than the interior of the tube or the head of the screw-blank. It is also slit

at intervals at said end, (see figs. 1, 6.) By this arrangement the screw-blank will not pass through the end of the tube, but will be held until seized by the griping-jaws, the slit end of the tube opening as the blank is drawn forth, and closing again to retain the next blank in position.

a is a tool-post, slid into ways on the frame A, and supports the stationary shaving-tool *b*, and *c* is its set-screw for holding said tool in place.

The operation of my shaver is very simple, and is as follows:

The screw-blanks being fed by their own gravity, as already explained, the first blank to be operated on is held by its head, by the spring-guide, until the reciprocating movement of the carriage J brings the griping-jaws R R up to the screw-blank, (said jaws being extended as they approach the screw-blank, by means of the sliding shaft S, forked lever U, and cam M,) when the jaws will embrace the screw-blank firmly, and draw the blank from the spring-guide as the carriage recedes. Next, the oscillating movement of the carriage will bring the griping-jaws, with the screw-blank, up to the stationary tool *b*, and rotate the blank against the tool until the blank-head is shaved, when the next oscillating movement of the carriage will bring the blank away from the tool, the griping-jaws be again extended, the blank dropped, and the jaws brought up to draw the next blank from the spring-guide, and so on.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. I claim, in combination with the stationary tool *b* and spring-guide Y, the forked lever U, cam M, and griping holders R R, for taking the screw-blank from the spring-guide, holding, bringing up, and rotating same against the stationary tool during the operation of shaving the blank-head, and discharging the blank without the aid of a punch, for either feed or discharge of the screw-blank, substantially as described.

2. I claim the combination of the oscillating and reciprocating griping-holder carriage J, cams K K' N, and spring O, arranged substantially as and for the purposes set forth and described.

In testimony whereof, I have hereunto set my signature, this twentieth day of March, A. D. 1868.

JAMES BURNS.

Witnesses:

ARTHUR NEILL,
WM. MILLER.