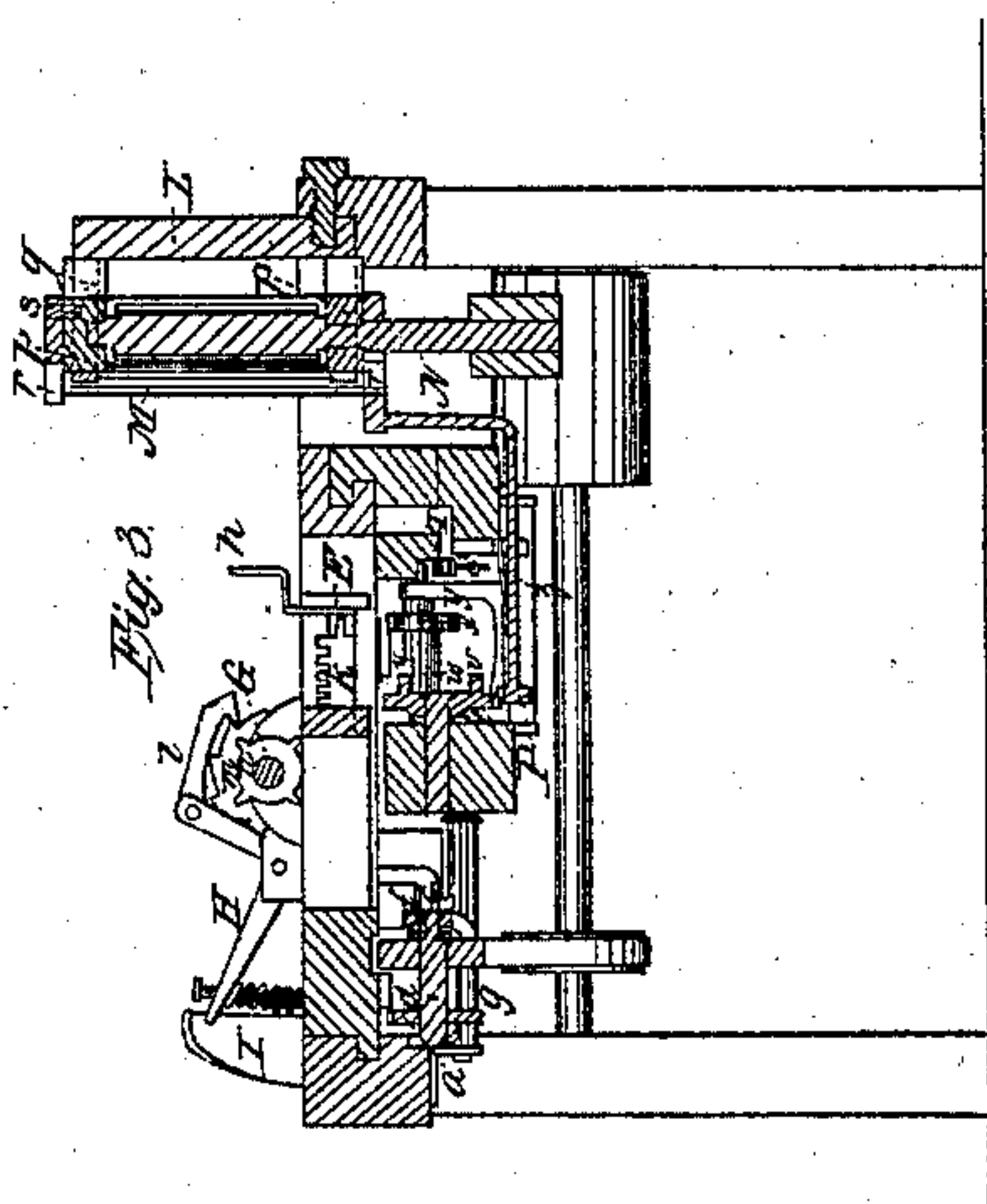
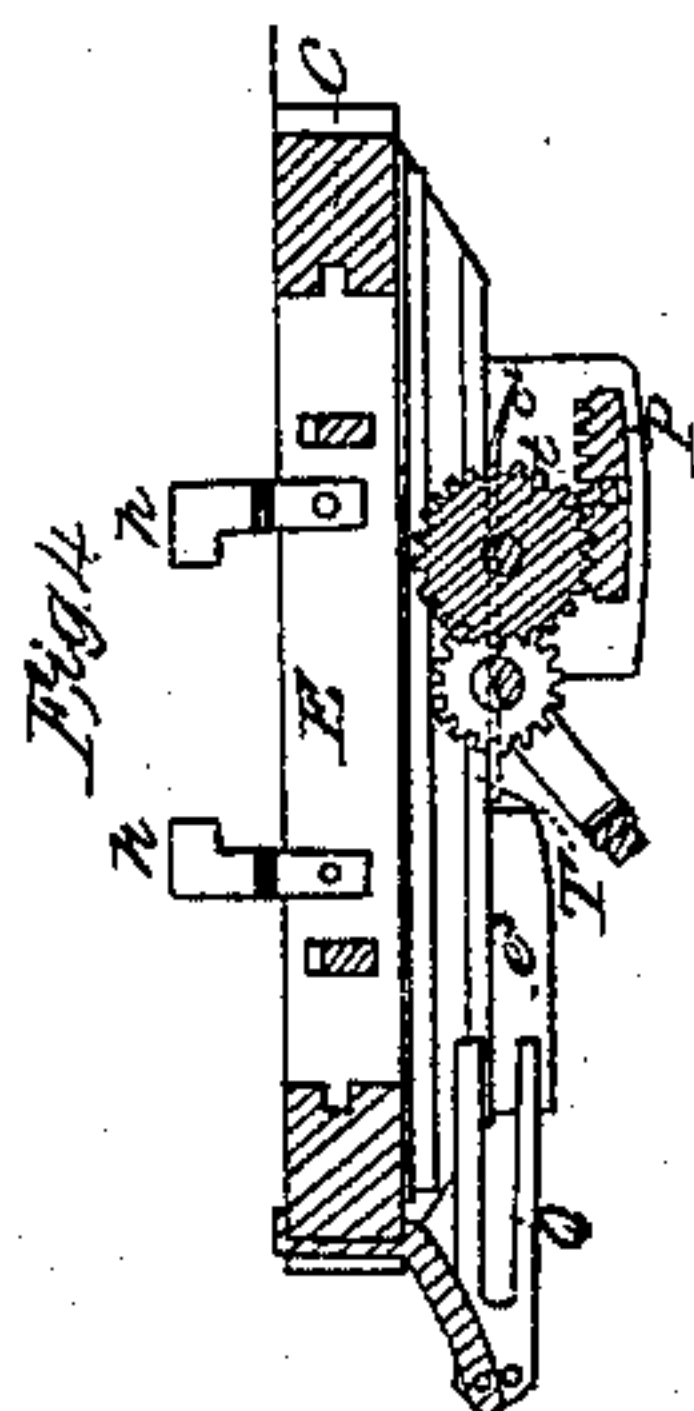
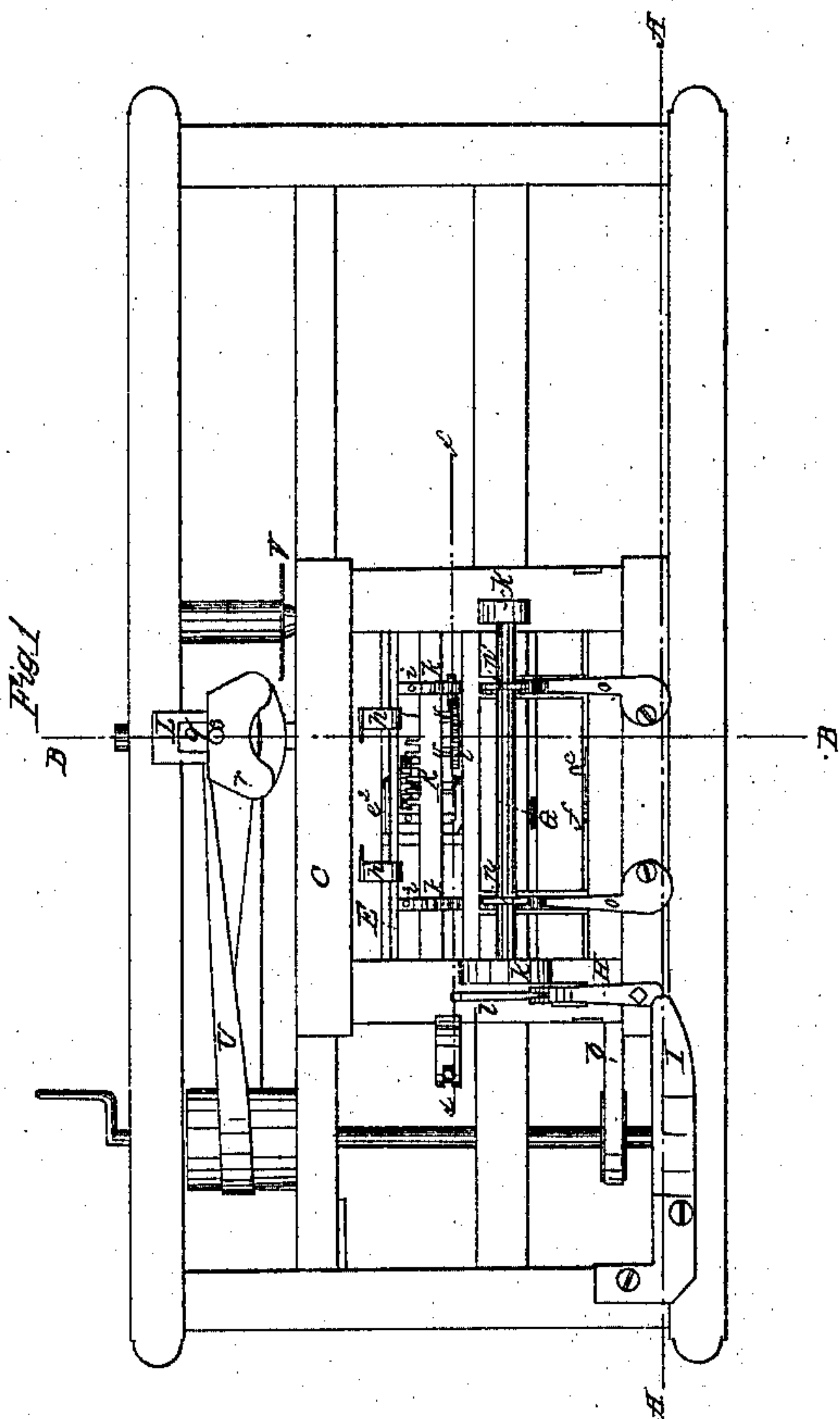
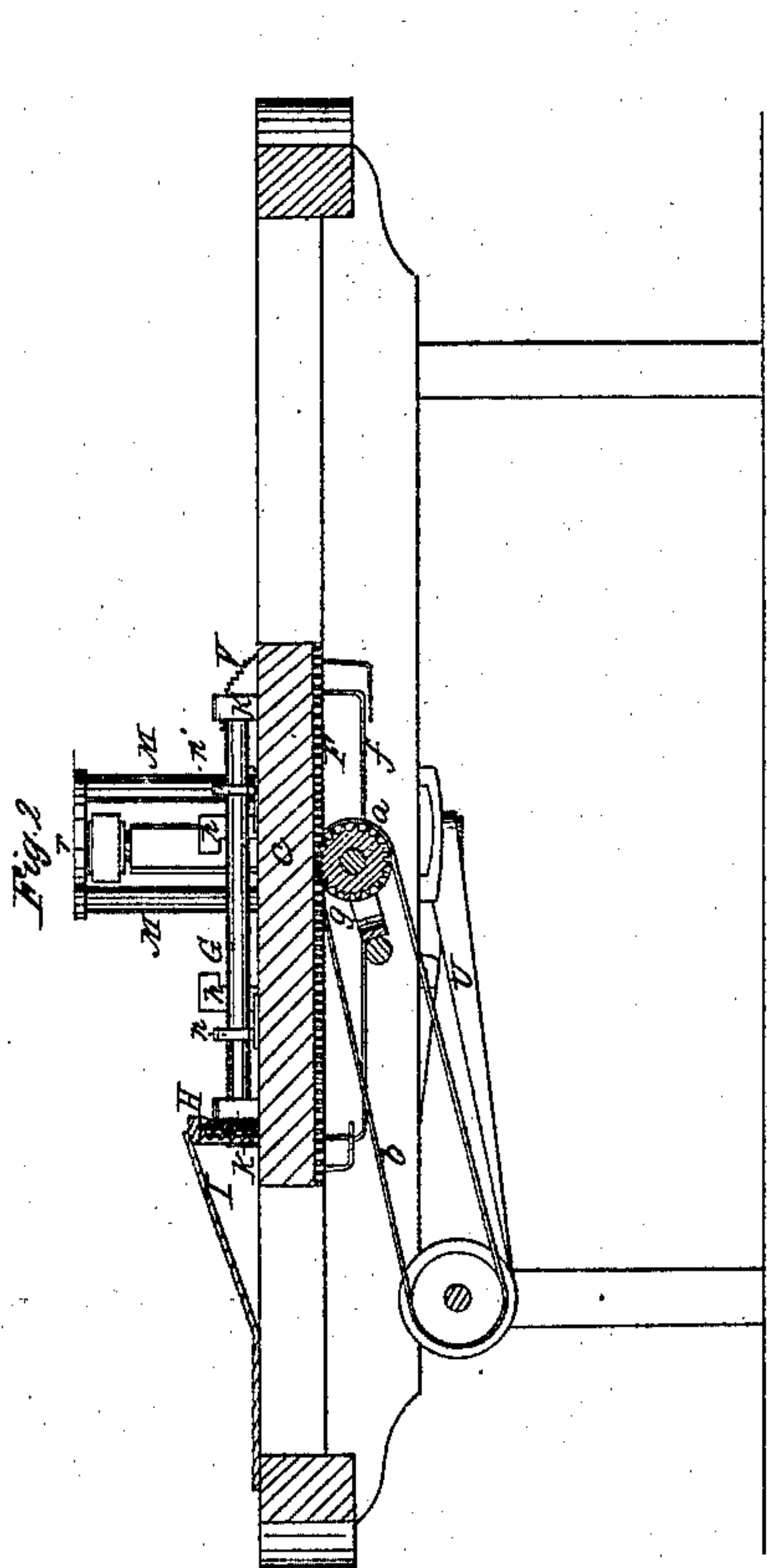


*D. D. Tynner,*  
*Sawing Shingles,*

*No. 15,749,*

*Patented Sep. 16, 1856.*





# UNITED STATES PATENT OFFICE.

D. D. TUPPER, OF BOSTON, MASSACHUSETTS.

## SHINGLE-MACHINE.

Specification of Letters Patent No. 15,749, dated September 16, 1856.

*To all whom it may concern:*

Be it known that I, DAVID D. TUPPER, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Shingle-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan; Fig. 2 a longitudinal vertical section upon the line A, A of Fig. 1; Fig. 3 a transverse vertical section upon the line B, B, of Fig. 1; Fig. 4 a section through the carriage on the line  $x, x$ , of Fig. 1.

Heretofore where sawed shingles have been planed this operation has been performed with a separate and distinct machine, after the shingle has been sawed upon another.

The object of my invention is to perform the two operations simultaneously, and to finish the shingle upon one and the same machine.

In my machine a cylinder of rotary planing cutters is caused to operate upon the bolt immediately in advance of the saw so that one surface of the shingle is planed before it is sawed from the bolt. It is evident however as the surface of the bolt is at no time parallel with the direction of its motion that the head which carries the pressure rolls should also be inclined so that a plane passing through the axes of these rolls shall be parallel with the face of the bolt, and my invention consists in vibrating the head for this purpose as will now be more particularly described.

In the accompanying drawings C is the carriage which is fed forward by the wheel  $a$ , actuated by a band  $b$  from the main shaft. It is drawn back by a weighted cord in the ordinary manner, the wheel  $a$  being dropped out of gear with the rack bar F for the purpose as follows:  $c$  is a pin upon the end of the shaft  $d$ , of the wheel  $a$  which is guided above and below a plate  $f$  by switches at each end. The whole runs in a swinging frame  $g$  which rises and falls as the pin  $c$  passes above or below the plate  $f$  and thus the wheel is alternately engaged with and disengaged from the rack bar as required. The bolt is held by the dogs  $h, h$ . These dogs are carried by the bar E to which are hinged at  $i, i$ , the rack bars  $k$ .

In order that the butts of the shingles

may be sawed alternately from opposite ends of the bolt, it is necessary that the rack bars be fed alternately forward, and this is effected in the following manner: G is a shaft having boxes K, in the top of the carriage, and carrying at one end the ratchet wheel  $m$  which is driven one tooth by its pawl  $l$  each time the carriage returns after making a cut, the bent lever H which carries the pawl passing under an inclined guide I and retracting it.  $n, n'$  are wheels having each four teeth, and which are so secured to the shaft that the teeth in one wheel shall be opposite to the spaces between the teeth upon the other. The teeth are also at such a distance from each other that each wheel acts upon its rack bar  $k$  only upon every alternate motion of the pawl  $l$ , and thus the dogs  $h$  are alternately advanced as required.  $o$  are spring retaining pawls that serve to hold the rack bars  $k$  from being forced back.

The manner in which the cutter head is constructed and operated, and the pressure rolls are inclined after each successive cut, now remains to be described. The cutter cylinder runs in boxes  $p$  which slide in slots in the standard L, and to which are also pivoted at  $s$  the plates  $r$  which carry the pressure rolls M. To the lower plate  $r$  is secured the bent arm N the extreme end of which carries a rack bar P that engages with the cogged wheel  $t$ . This wheel is turned a quarter of a circle more or less alternately in one direction and the other each time the carriage advances and a cut is made, and thus the rolls receive the required inclination upon each side to enable them to bear upon the inclined face of the bolt. The arm N is locked and held stationary while the cut is being made by the spring dog  $z$  that falls into one of two notches in the frame work which need not be more particularly described. The wheel  $t$  is rotated as before mentioned in one and the other direction by the forked arm or dog Q attached to the carriage which strikes one or other of the pins  $v$  projecting from the face of the wheel, and moves it the required distance. The dog Q is guided so as to strike the pins alternately as follows:  $x$  is a toothed wheel, the shaft of which is notched or cut away at  $w$  and runs in a swinging frame  $y$  that is alternately raised and lowered by the following means: The shaft projects through its bearing in the



swinging frame, and on the return of the carriage passes over a spring guide bar T, upon the carriage and the wheel  $\alpha$  is raised so as to engage with a short rack bar R also upon the carriage. This causes the wheel to make a semirevolution, and as the carriage completes its return traverse the shaft passes off the guide bar T, leaving the notch  $w$  in a position to guide the forked arm Q so as to strike one of the pins  $v$  whereby the pressure rolls are inclined in one direction. On the arrival of the carriage at the return end of its traverse, the end of the shaft of the wheel  $\alpha$  is switched by the spring  $c^2$  up onto the guide bar T and the rack R again throws the wheel half around bringing the notch  $w$  into position to guide the forked arm onto the other pin  $v$  and thus before another cut is made the pressure rolls are inclined in the opposite direction as required.

The cutter cylinder is operated by a band U from the driving shaft and the saw V by

a suitable connection with some moving part of the machinery which need not be further referred to as this forms no part of my present invention. The boxes  $p$ , are forced forward to their work by india rubber or other springs  $q$ , which yield slightly to permit the butt of the shingle to pass the cutters. The spring bolt  $z$ , which holds the cutter head is unlocked by the wedge  $e^2$  at the instant the cut is completed and before the lever N, is required to move.

What I claim as my invention and desire to secure by Letters Patent is—

The within described method of arranging and operating the cutter head whereby the pressure rolls are inclined, to correspond with the inclination of the face of the bolt, for the purpose set forth.

DAVID D. TUPPER.

Witnesses:

SAM. COOPER,  
P. E. TESCHEMACHER.