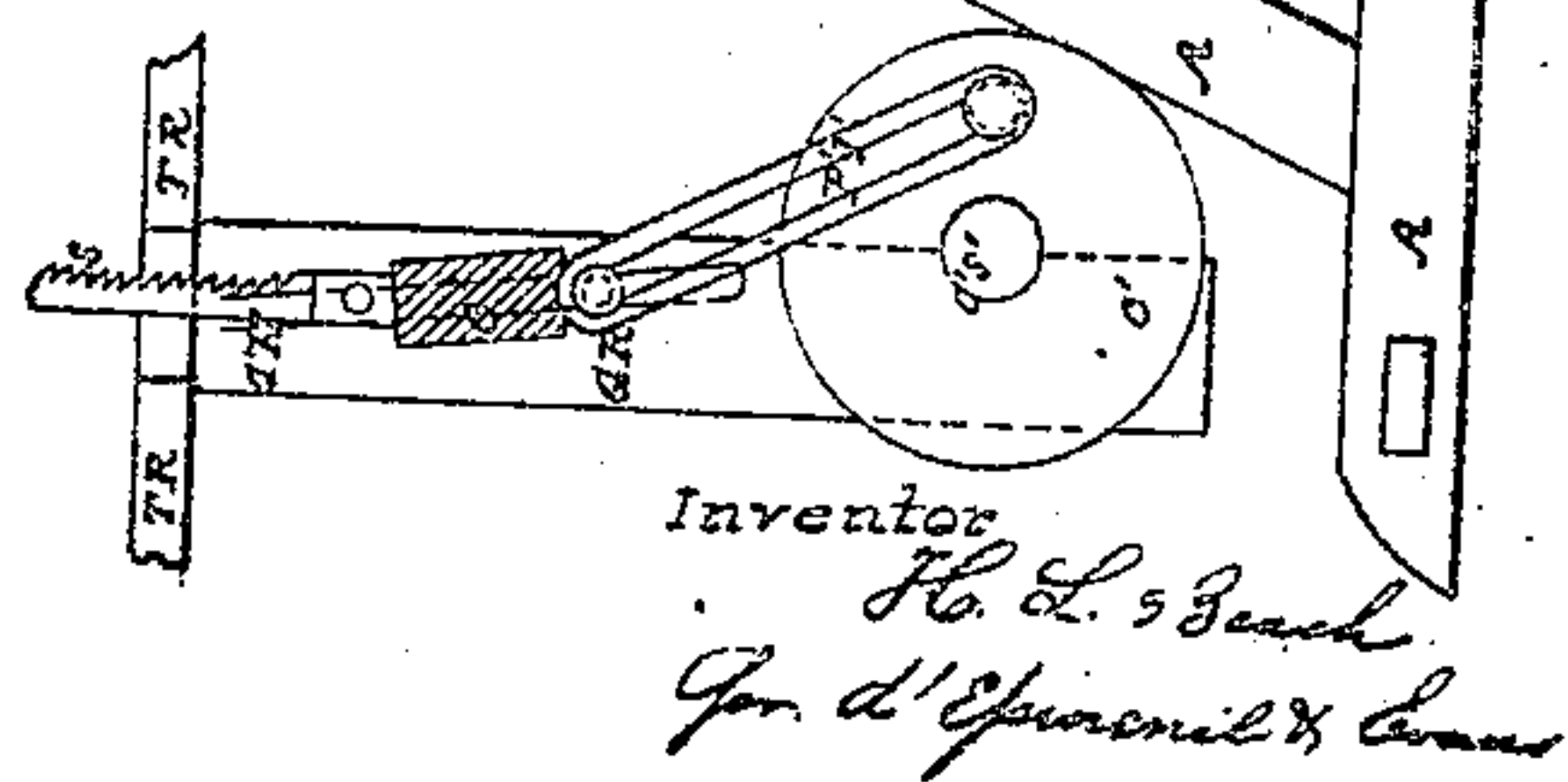
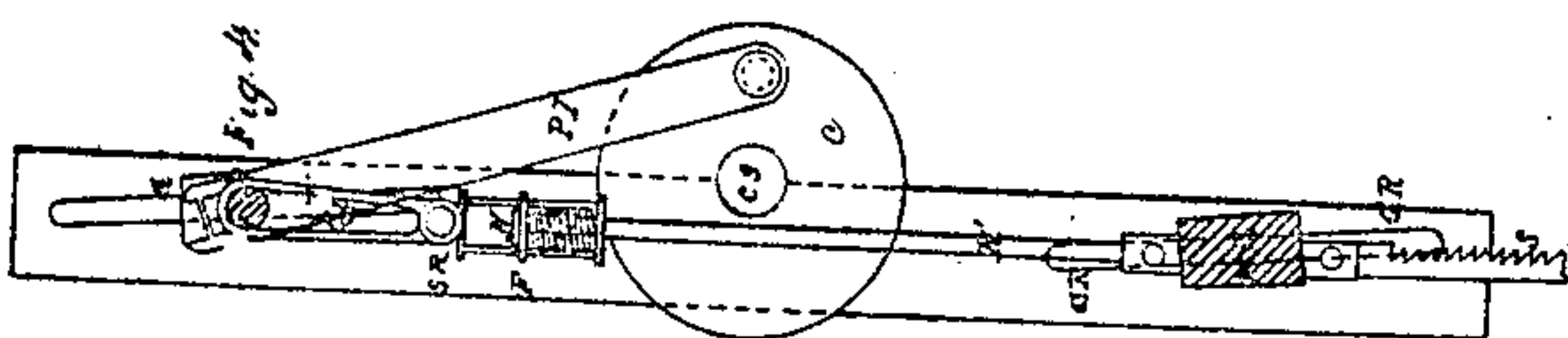
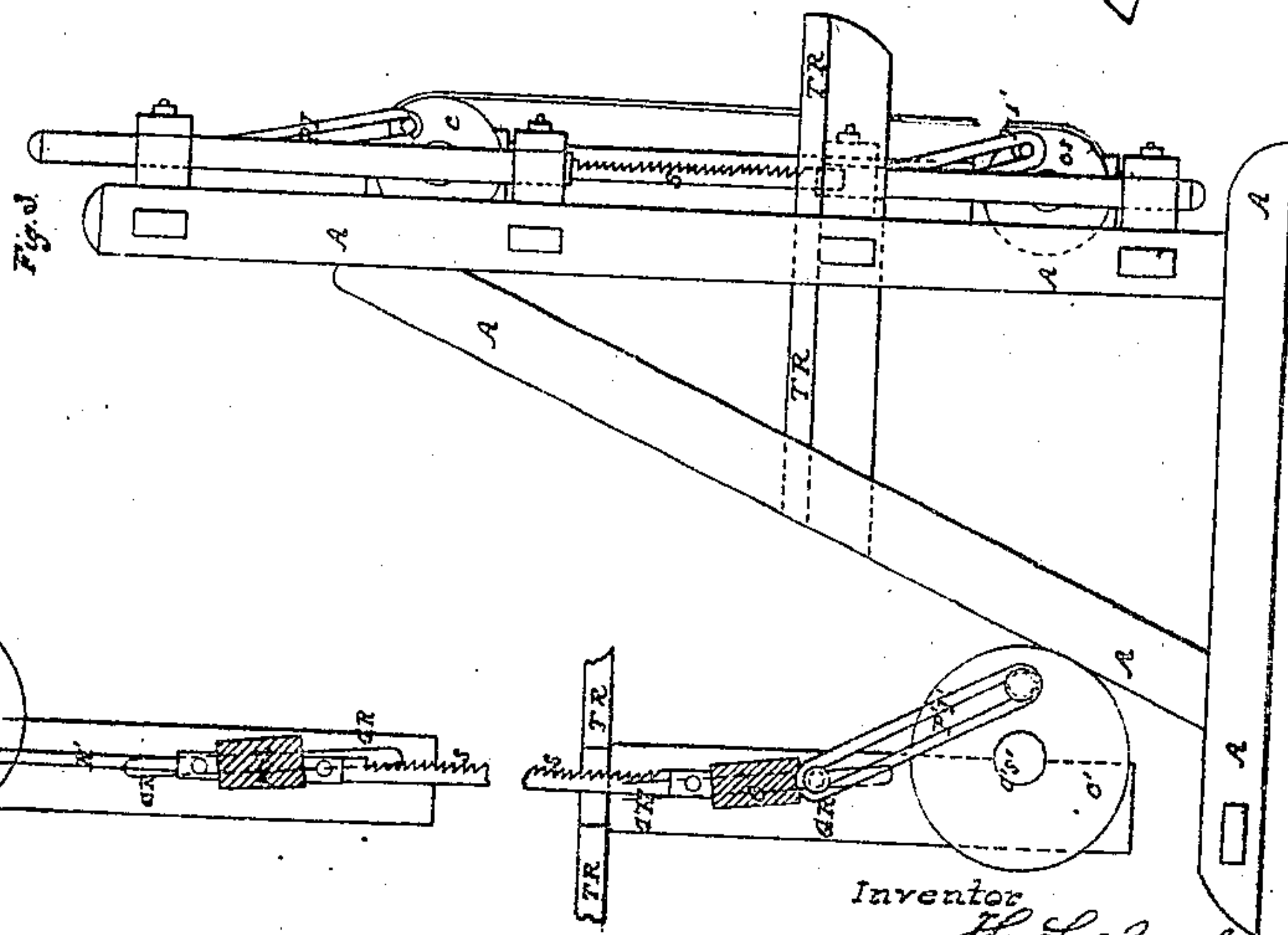
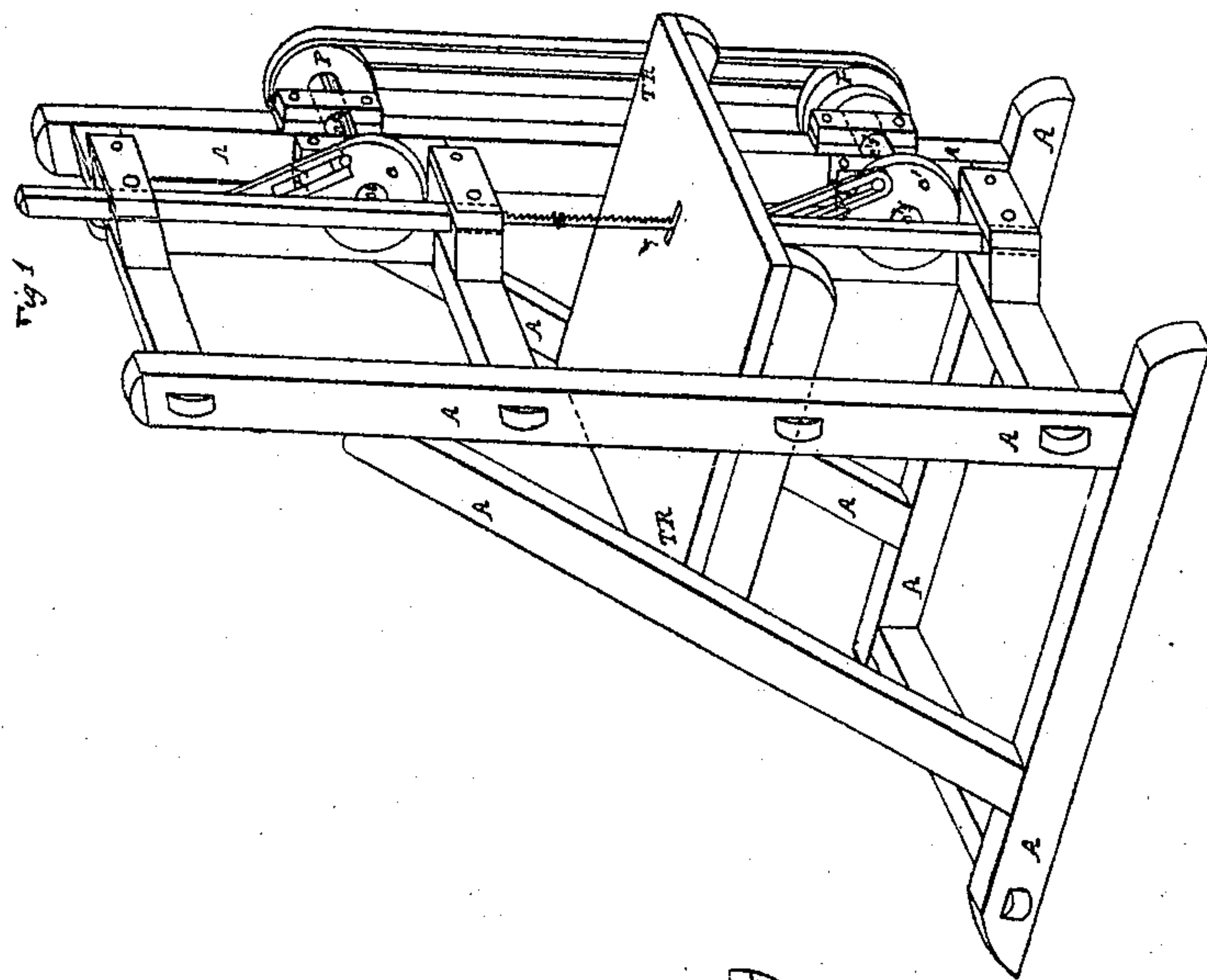
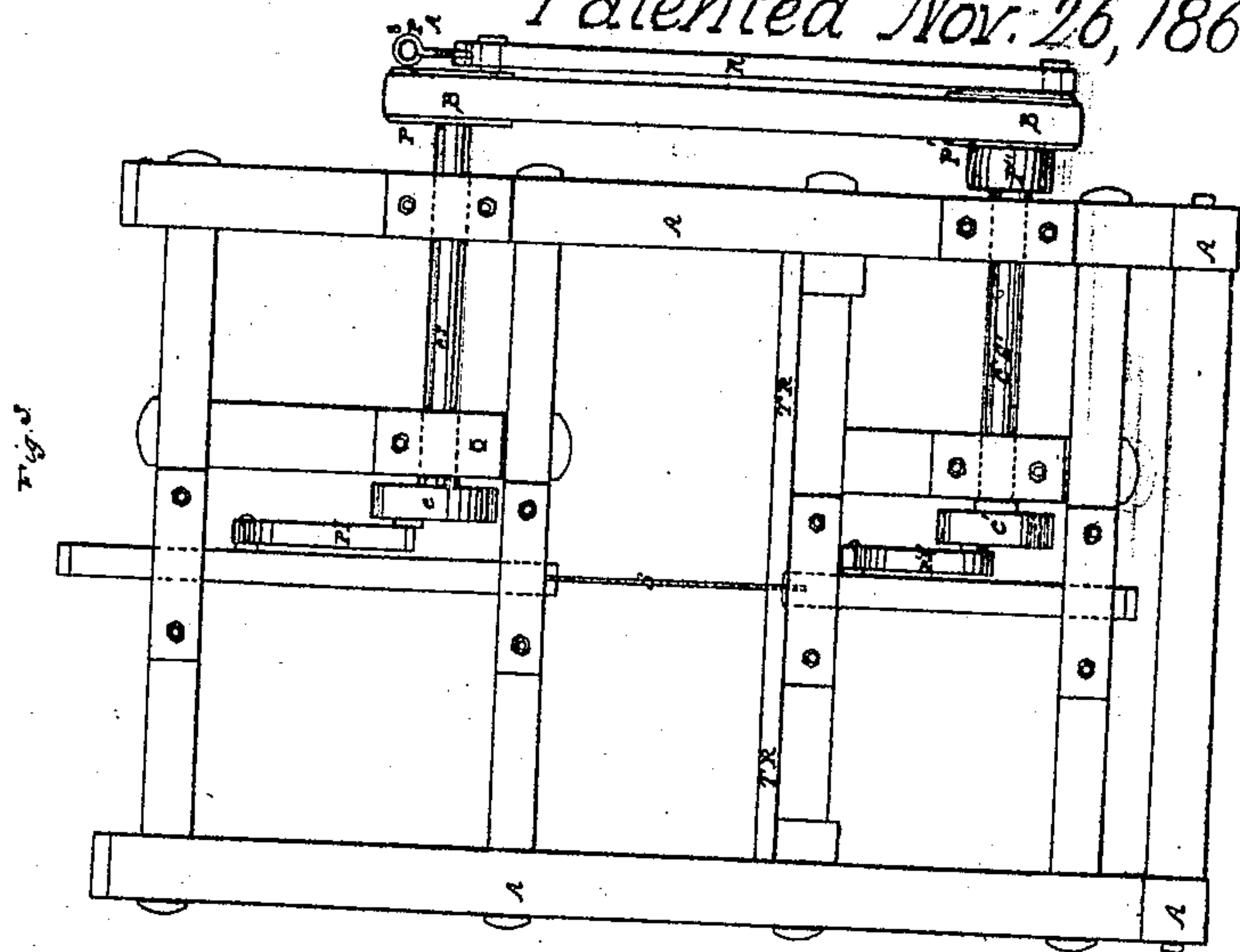


# H. L. Beach.

## Scroll Sawing Machine.

N<sup>o</sup> 71265

Patented Nov. 26, 1867.



Witnesses  
 Isaac R. Clarkford.  
 C. H. Evans

Inventor  
 H. L. Beach  
 Per d'Espinoil & Co.

# United States Patent Office.

H. L. BEACH, OF NEW YORK, N. Y.

*Letters Patent No. 71,265, dated November 26, 1867.*

## IMPROVEMENT IN SCROLL-SAWING MACHINES.

*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, H. L. BEACH, of the city of New York, in the county of New York, and State of New York, have invented a new and useful Improvement in "Scroll-Saws;" and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, and to the letters of reference marked thereon, and in which—

Figure 1 is a perspective view of my scroll-saw.

Figure 2, a front-elevation view of same.

Figure 3, a side-elevation view of the same.

Figure 4, an elevation view (on a somewhat larger scale) of the saw as connected with its pitman, springs, &c.

The nature of my invention consists in providing a "scroll-saw" of a cheap and simple construction, capable of being adapted to any dimension of timber, and which will do the work at a great saving of labor and material, on account of its peculiar attachments, as hereinafter described.

To enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation.

A A is the upright frame, wooden or metallic, into which my apparatus is set. T R is the table-rest, on which rests the timber to be sawed. C S and C' S' are two shafts set on frame in a parallel position, both bearing on the inside end a crank, C and C', and on the outside end pulleys P and P', connected by belt B and rod R. Pitmen P I and P' I' are respectively attached to crank C and C' and to guides G and G', said guides having a sliding, up-and-down movement along guide-rods G R and G' R', fig. 4. It is well to remark that guide-rods G R and G' R' are both set in an inclined position, so that when guides G and G' slide down, their motion is downward forward, and when sliding up it is upward backward. The head H of saw S is fastened to a third or middle guide, M G, set on similarly to the guides G and G', above described, and the saw is driven upwards by attachment A T, fig. 4, as follows: The end r of rod R' is fastened, by its lower end, to head of guide M G, and its upper (rod r') end is provided with a thread on which nut N sets. The upper end r' of rod R' runs into a barrel of a frame, F, as shown in fig. 4, into which a spiral spring, S P, is so placed that rod R' runs through it. On the top of said spiral spring is set plate P L, made so that it slides up and down barrel or frame F, and is maintained in proper position by nut N which screws on thread or head of rod R', as aforesaid. Said nut gives more or less stiffness to spring S P. On the top plate of frame or barrel is a ring attached to it by a free swivel-rivet, and nut N being permanently attached or soldered on inside sliding plate P L, it will be sufficient to turn the barrel or spring-frame, as the case may be, to act on nut N, and therefore stiffen or loosen the spring. Lastly, swivel-ring S R is fastened on to a slotted connecting-rod, C R, which is itself fastened on to pin P G of the upper guide.

The saw runs through table T R, and has its lower end attached to head of guide G', which is itself connected with crank C' by slotted pitman P' I'. Pulley P'' connects my machine with the power which is to act on it, and belt B, driven by belt on P'', communicates the motion to both parallel cranks C S and C' S'. One can easily see that it is essential both cranks C and C' should work symmetrically. I therefore connect both pulleys P and P' with rod R, which has for its object to keep both cranks in the same relative position they have been placed by the operator in the action of stiffening or loosening the saw; the screw arrangement S P A being for the purpose of modifying at will the length of rod R, so as to adapt it to the relative positions of the cranks. Now pitman P' I', being slotted, pulls the saw down, but cannot push it up, on account of the loss of power or motion resulting from the slot in P' I'. The same reasoning applies to connecting-rod C R, which can pull the saw up but cannot push it down. Therefore, should any of the two pins which hold the saw break, (as will sometimes happen,) the saw, drawn up or down, will remain safe in either position, and whatever be the speed at the time of the break, because the pin in the opposite pitman will work without effect up and down the slot in said pitman. It must also be remarked that the pitch which both upper and lower guides derive from the inclined position of the rods along which they slide up and down, gives the saw the needed forward movement when drawn down and backward when drawn up.

In the above description I have mentioned metallic or wooden pitmen and connecting-rods slotted, and this is the most mechanical and working-like mode to be adapted in a well-made machine; but in case of need, or for



any other cause, reason, or notice, I mean to use leather straps, ropes, or any other material that will answer my purpose, viz, to draw the saw alternately up and down without, in any case, pushing it up or down.

Having thus described my invention, its construction and operation, what I do claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. The saw-straining spring arrangement N F S P, in its combination and relative action with rod R', crank-shafts C S and C' S' and saw S, all constructed in the manner and for the purpose above set forth and described.

2. The combination of saw S, guides G, M G, and G', rod R', sliding guide-rods G R and G' R', cranks C and C', crank-shafts C S and C' S', slotted pitman P' I', and slotted connecting-rod C R, the whole combined, constructed, and operating in the manner and for the purpose above set forth and described.

H. L. BEACH. [L. S.]

Witnesses:

ALEX. DU FLON,

WILLIAM APPELGATE.