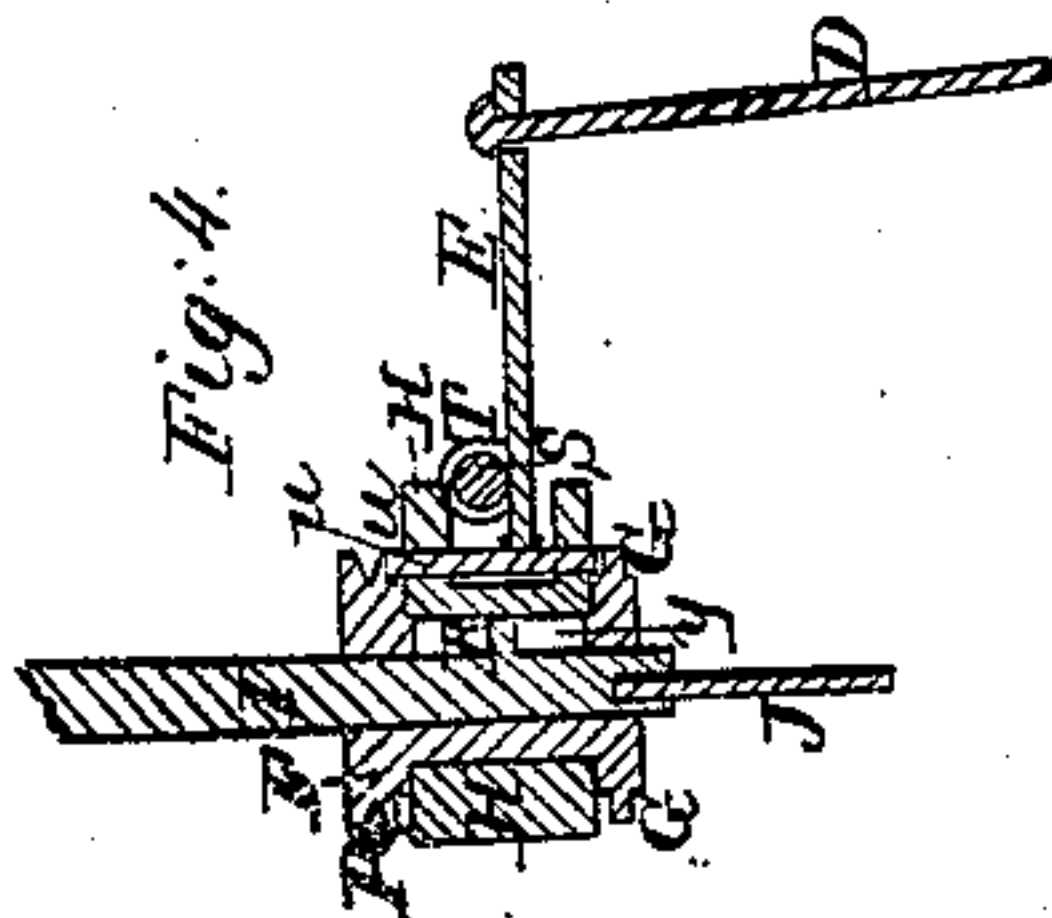
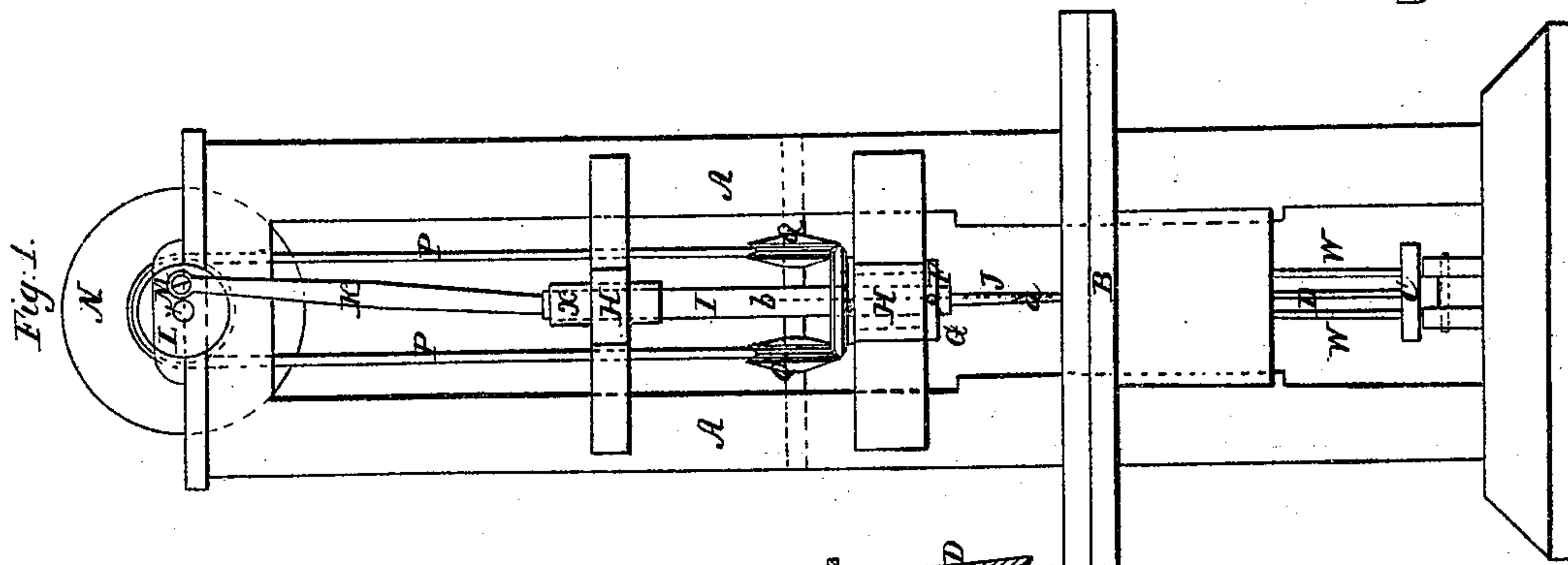
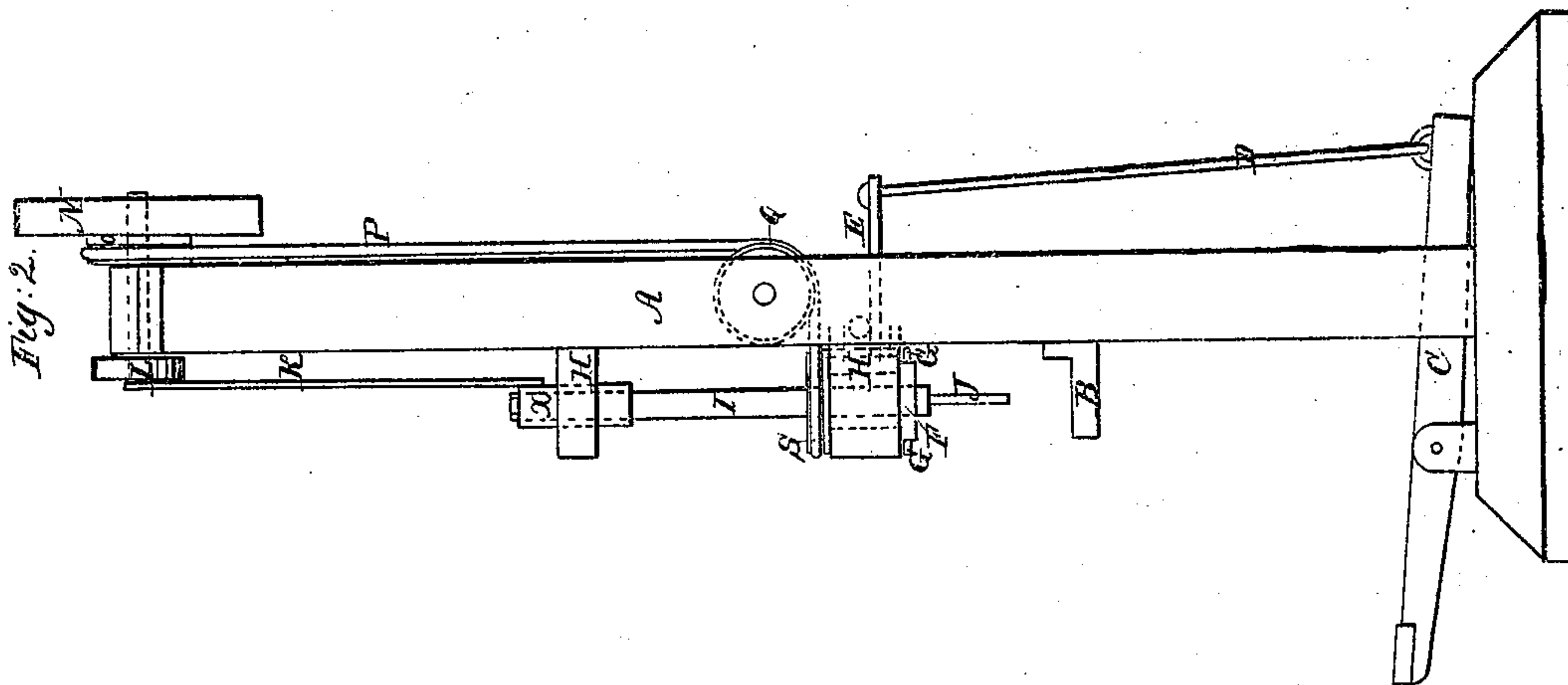
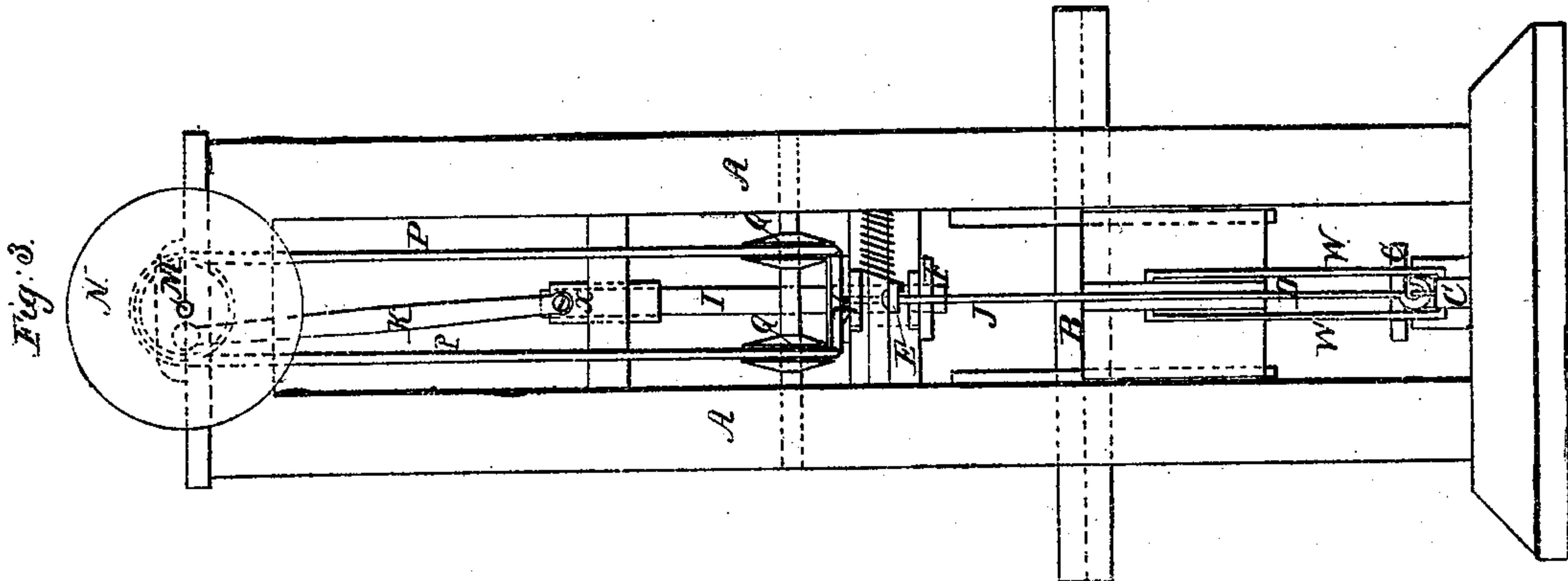


*H.B. Smith,*  
*Mortising Machine,*  
*No 10, 422,                      Patented Jan. 10, 1854.*





# UNITED STATES PATENT OFFICE.

HEZEKIAH B. SMITH, OF LOWELL, MASSACHUSETTS.

## MORTISING-MACHINE.

Specification of Letters Patent No. 10,422, dated January 10, 1854.

*To all whom it may concern:*

Be it known that I, HEZEKIAH B. SMITH, of Lowell, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Power Mortising-Machines; and I do hereby declare that the same is fully and clearly described and represented in the following specification and accompanying drawings, letters, figures, and references thereof.

Of the said drawings Figure 1 denotes a front elevation, Fig. 2 denotes a side elevation, Fig. 3 denotes a back elevation, and Fig. 4 a transverse and vertical section at *a b* Fig. 1.

The principal and main features of novelty, in my mortising machine consists of a combination so arranged and operated, that the chisel is reversed by power, (by friction with band or other contrivance) and stopped in the required position to finish either head of the mortise.

The stock to be mortised is to be placed upon the table which can be seen at B, in Figs. 1, 2 and 3 of the drawing. This table is connected to the treadle C by two rods W, Figs. 1 and 3, the operator by placing his foot upon the treadle C and depressing the same, then the table B together with the stock or wood to be mortised will be raised until the chisel J seen at Figs. 1, 2, 3 and 4 penetrates, or is forced into it by the vertical movement of the piston I and chisel J, sufficient to give the required depth of the mortise; then the stock or wood is moved longitudinally by hand or otherwise, until the chisel arrives at one end of the mortise; then by raising or removing the foot from the treadle C seen at Figs. 1, 2 and 3 in the drawings, the table B together with the stock or wood to be mortised is lowered so that the chisel is entirely free from the piece being mortised; at that instant the rod D, which can be seen in Figs. 1, 2, 3 and 4 depresses or lowers the out end of the arm or lever E seen at Figs. 2, 3 and 4, said arm being connected with the slide *u* seen in the section Fig. 4, the said slide being connected with the said arm so that as the outside end of the arm is depressed, the slide *u* is raised sufficiently to disconnect it from the stop pin G seen at Figs. 1, 2, 3 and 4, attached to the reversing cylinder F which then instantly reverses the chisel by means of the friction band P Figs. 1, 2, 3 and 4, the said chisel is not allowed to turn more

than one half of a revolution until the treadle C, is again depressed and raised on account of the slide *u*, as it is raised from the stops G and coming in contact with the tooth V seen in Figs. 1 and 3, the said tooth V is firmly secured to the reversing cylinder F.

In the piston that holds the chisel which can be seen at I Figs. 1, 2, 3 and 4 there is a spline or guide pin, seen at R Fig. 4; this spline guides or governs the vertical movement of the piston and chisel, by fitting to a slot in the reversing cylinder seen at *y* in Fig. 4, by this arrangement the reversing band P seen at Figs. 1, 2, 3 and 4 and the reversing cylinder F governs perfectly the reversing of the piston and chisel, and also allows the said piston and chisel to move up and down freely.

S in Fig. 4 is a transverse section of the pivot or fulcrum on which the lever E turns as it moves the slide *u* as seen at Fig. 4.

T in Fig. 4 is a spiral spring that forces the out end of the lever E upward when the foot of the operator is placed upon the treadle C and depressed. The rod D seen at Figs. 1, 2, 3 and 4 by being connected with the out end of the said treadle C is raised, through the hole in the out end of the lever E thereby lowering the slide *u* as seen at Fig. 4 thereby stopping the chisel by the stop pins G, on the reversing cylinder F coming in contact with the said slide *u* Fig. 4; by means of the ring seen at X at the upper end of the piston Figs. 1, 2 and 3 the said piston is allowed to revolve freely and at the same time to move vertically by means of a groove being turned near the upper end of the piston, and a steady pin or spline fitted to the said groove and firmly secured to the ring X, it being understood that the said ring moves only vertically, while the piston moves vertically and is revolved or reversed at the pleasure of the operator.

The piston stands H may be seen as attached to the frame A Figs. 1, 2 and 3, and a section of the lower stand for the piston may be seen at H Fig. 4. The connecting rod may be seen at K Figs. 1, 2 and 3, the crank at L Figs. 1 and 2 and the driving pulley at N Figs. 1, 2 and 3, the reversing band pulley is seen at *o* Fig. 2. At M Figs. 1 and 3 may be seen the driving shaft, and at Q Figs. 1, 2 and 3 may be seen the friction rolls to guide the reversing band P.

I have described the parts on which I



base my claim, much more thoroughly than  
the other parts of my improved mortising  
machine, for the reason that the novelty of  
my improvement requires more explanation  
5 than the other parts that have been before  
known, all of which will be readily under-  
stood by inspection of the drawing.

What I claim as my invention is—

The afore described combination for re-

versing the chisel by power applied by fric- 10  
tion (with band or otherwise) and stops  
operated so as to stop the chisel when re-  
versed in the manner essentially as set forth.

HEZEKIAH B. SMITH.

Witnesses:

A. P. BONNEY,

ELHANAN W. SCOTT.