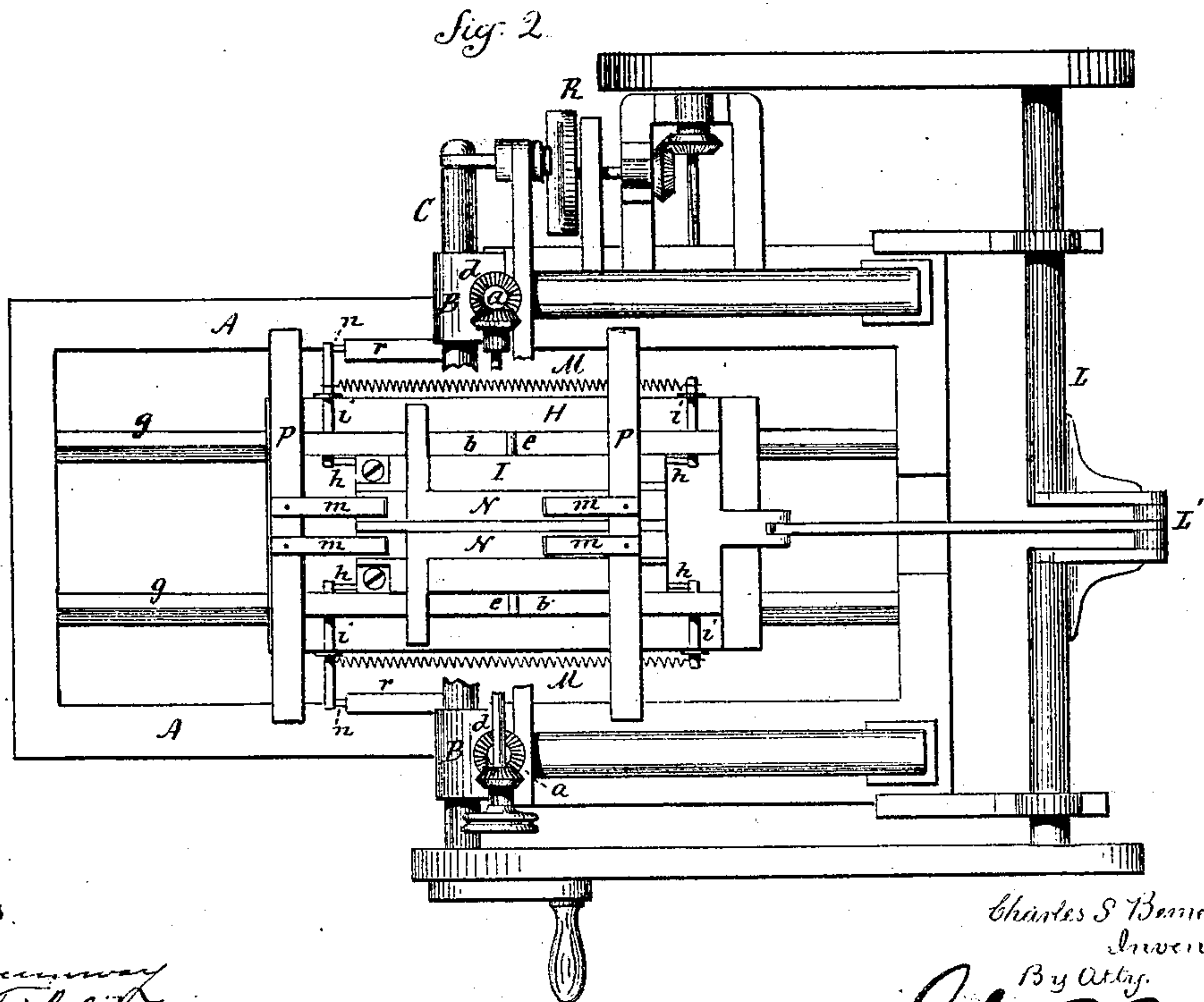
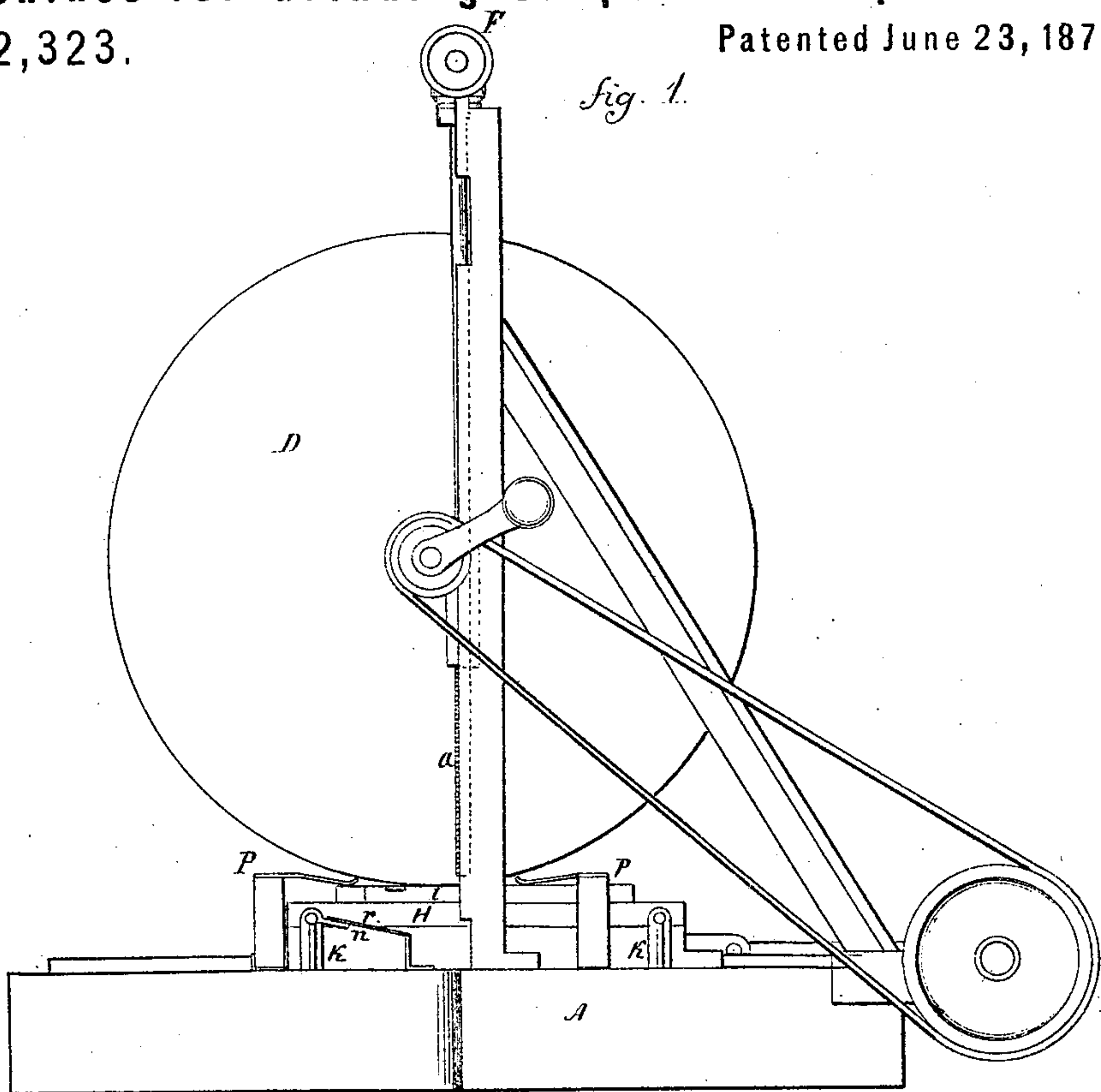


C. S. BEMENT.

Machines for Grinding Carpenters' Squares.

No. 152,323.

Patented June 23, 1874.



Witnesses.

W. H. Conway
A. J. Tibbitts

Charles S. Bement
Inventor

By Atty.

John E. Earle

C. S. BEMENT.
Machines for Grinding Carpenters' Squares.
 No. 152,323. *Fig. 3* Patented June 23, 1874.

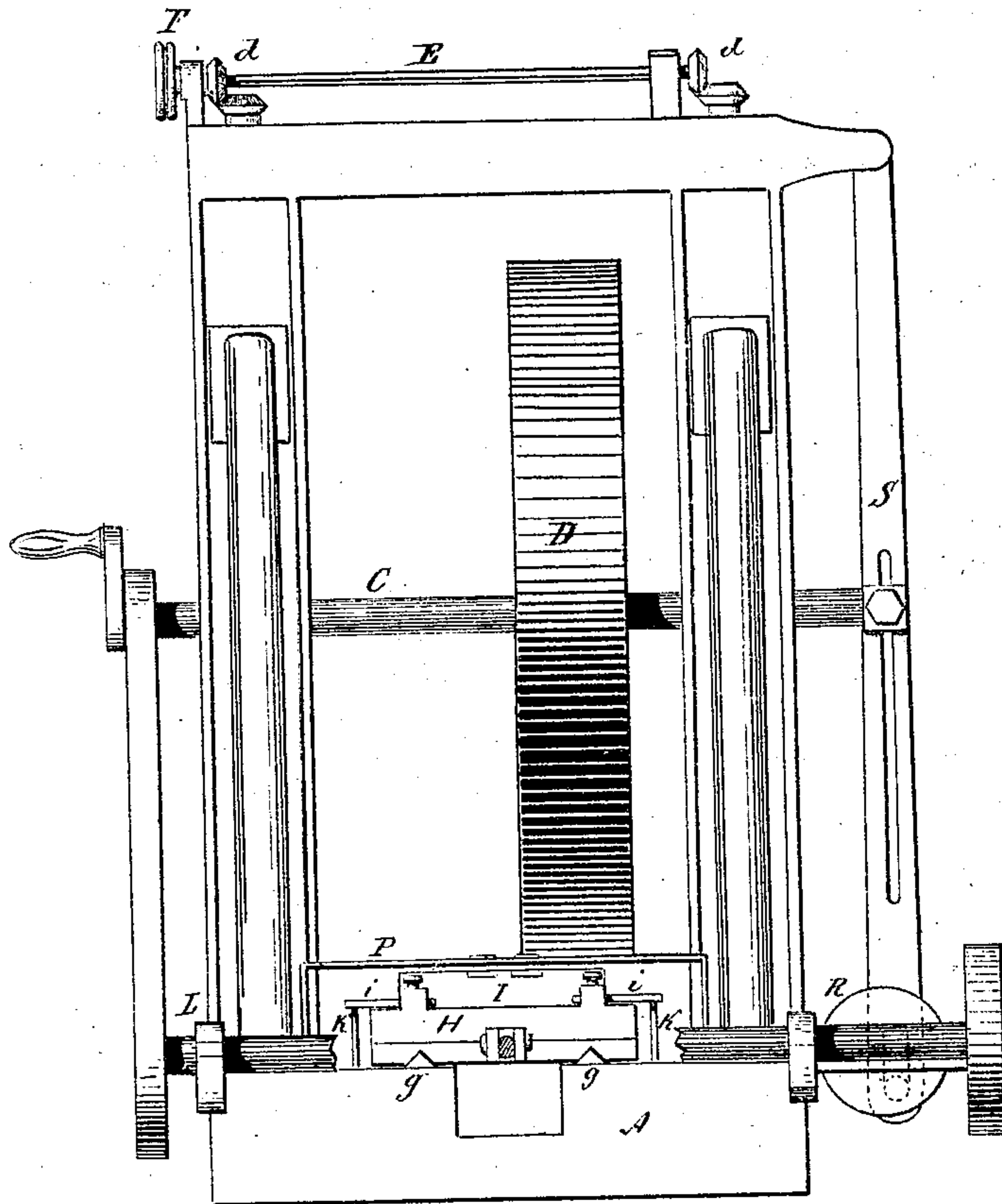
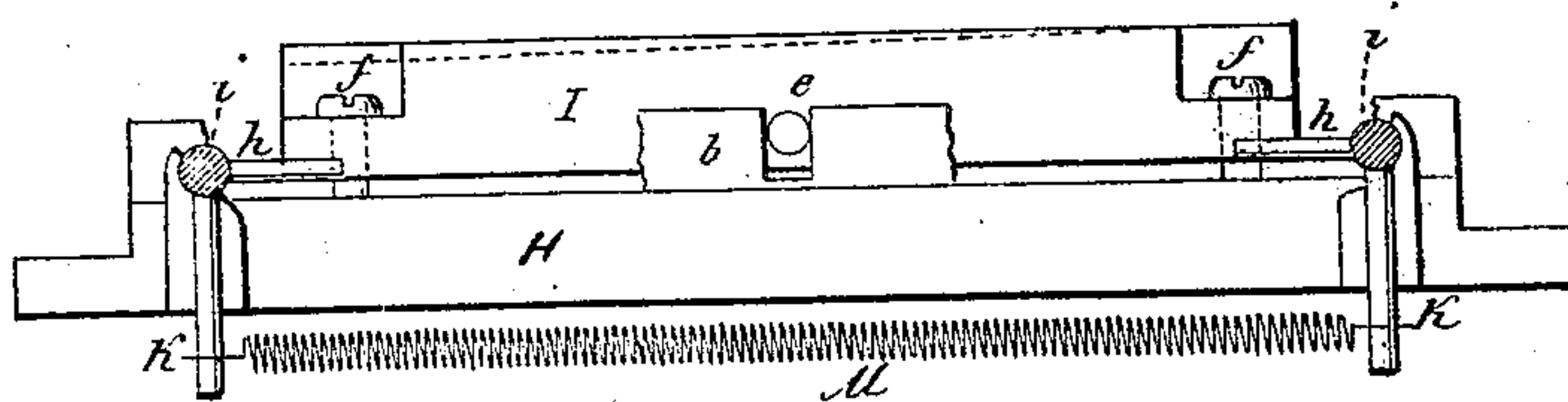


fig 4



Witnesses.
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UNITED STATES PATENT OFFICE.

CHARLES S. BEMENT, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO
SARGENT & CO., OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR GRINDING CARPENTERS' SQUARES.

Specification forming part of Letters Patent No. 152,323, dated June 23, 1874; application filed
January 21, 1874.

To all whom it may concern:

Be it known that I, CHARLES S. BEMENT, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Machine for Grinding Carpenters' Squares; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a side view; Fig. 2, a plan view, with the stone removed to more clearly show the bed; and in Fig. 3, an end view.

This invention relates to an improvement in apparatus for grinding the surface of carpenters' squares, but applicable to grinding the surface of other articles, the object being to make the holding and presentation of the article to the stone automatic; and the invention consists principally in a reciprocating bed, arranged beneath the stone so that the article to be ground will pass back and forth beneath the revolving stone, combined with the mechanism hereinafter described, whereby the said bed is made self-adjusting.

A is the base of the machine, and above this base, in bearings B, is arranged a shaft, C, carrying the grindstone or grinding-wheel D. The bearings B are made adjustable, vertically, by vertical screws *a*, both worked by a transverse shaft, E, through pinions *d*, so that by turning the shaft E, by means of the hand-wheel F, the stone may be raised or lowered, the grindstone caused to revolve by the application of power thereto in any convenient manner. H is the bed, set upon the base on ways *g*, and to this bed a reciprocating movement is imparted from a shaft, L, through a crank, L', or other suitable device, to cause the bed to reciprocate beneath the stone. On the bed H a platen, I, is arranged between ribs *b* on the said bed, and so as to lie free to move up and down to a slight extent and prevented from longitudinal movement, except with the bed. (Shown in side view, detached, in Fig. 4.) The platen I is

provided with trunnions *e*, set into a recess in the ribs *b*, that retain it in its proper longitudinal position on the bed, and vertically it is prevented from an upward movement beyond a certain point by headed bolts *f*, the bolts allowing a slight play up and down of the bed. At each corner of the platen an arm, *h*, extends from a rock-shaft, *i*, beneath the platen, as seen in Fig. 4, and at right angles thereto another arm, *k*, extends downward, the two arms connected by a spring, *m*, or may be a single spring to each arm, the tendency of which is to throw the arms *h* up and support the platen I in its highest position. On the platen the squares N to be ground are placed, as seen in Fig. 2, bedded thereon, so as to prevent longitudinal or transverse movement, and from the base, each side of the center, a bar, P, extends over the platen, and from these the springs *m* extend to bear upon the tongue of the square which is to be ground, and in such relative position to each other that the platen will have carried the square under the springs of one bar before it has left the springs of the other bar—that is, the ends of the springs of one bar are distant from the ends of the springs of the other bar less than the length of the blade of the square to be ground. These hold the blade firmly on the platen, so as to prevent their rising. The grindstone works between the ends of the springs *m*, as seen in Fig. 1, upon the surface of the squares, as the bed and platen are moved back and forth. The stone is adjusted relatively to the platen so that when the platen is raised to its highest position the surface of the squares will be sufficiently ground, and the platen continues to pass back and forth beneath the stone until the grinding ceases, which it will when the platen can rise no farther.

As the pressure of the platen is always against the stone, the tendency would be to grind more rapidly at the ends of the blade as the blade passes onto and off the stone. To avoid this, I attach to the rock-shaft *i* an arm, *n*, (see Figs. 1 and 2,) and on the base arrange an inclined trip, *r*, so that just as the

end of the blade reaches the stone the arms *n* will pass beneath the trip *r*, and cause the shafts *i* to turn and take the pressure of the arms *h* from the platen.

It is desirable to use the whole surface of the stone in grinding, in order that it may wear evenly. To do this I give to the shaft of the stone a longitudinal reciprocating movement by means of a crank, *R*, which is caused to revolve by connection to the other parts of the machine, substantially as seen in Fig. 2. This crank is in connection with a bar, *S*, and the revolution of the crank imparts to this bar *S* a vibratory movement. To this bar *S* the shaft *C* is attached, as seen in Fig. 3, and this imparts to the shaft and thence to the stone a movement transverse across the platen

corresponding to the extent of vibration of the bar *S*.

I claim as my invention—

1. In combination with the bed *H* and platen *I*, the rock-shafts *i*, their arms *h* extending beneath the said platen, and so as to support the said platen and yield to the pressure thereon, substantially as set forth.

2. In combination with the bed *H* and platen *I* and rock-shafts *i*, having a reciprocating movement imparted thereto, the arm *n* on said rock-shaft, and the stationary trip *r* on the base, substantially as and for the purpose described.

Witnesses: CHARLES S. BEMENT.

A. J. TIBBITS,

J. H. SHUMWAY.