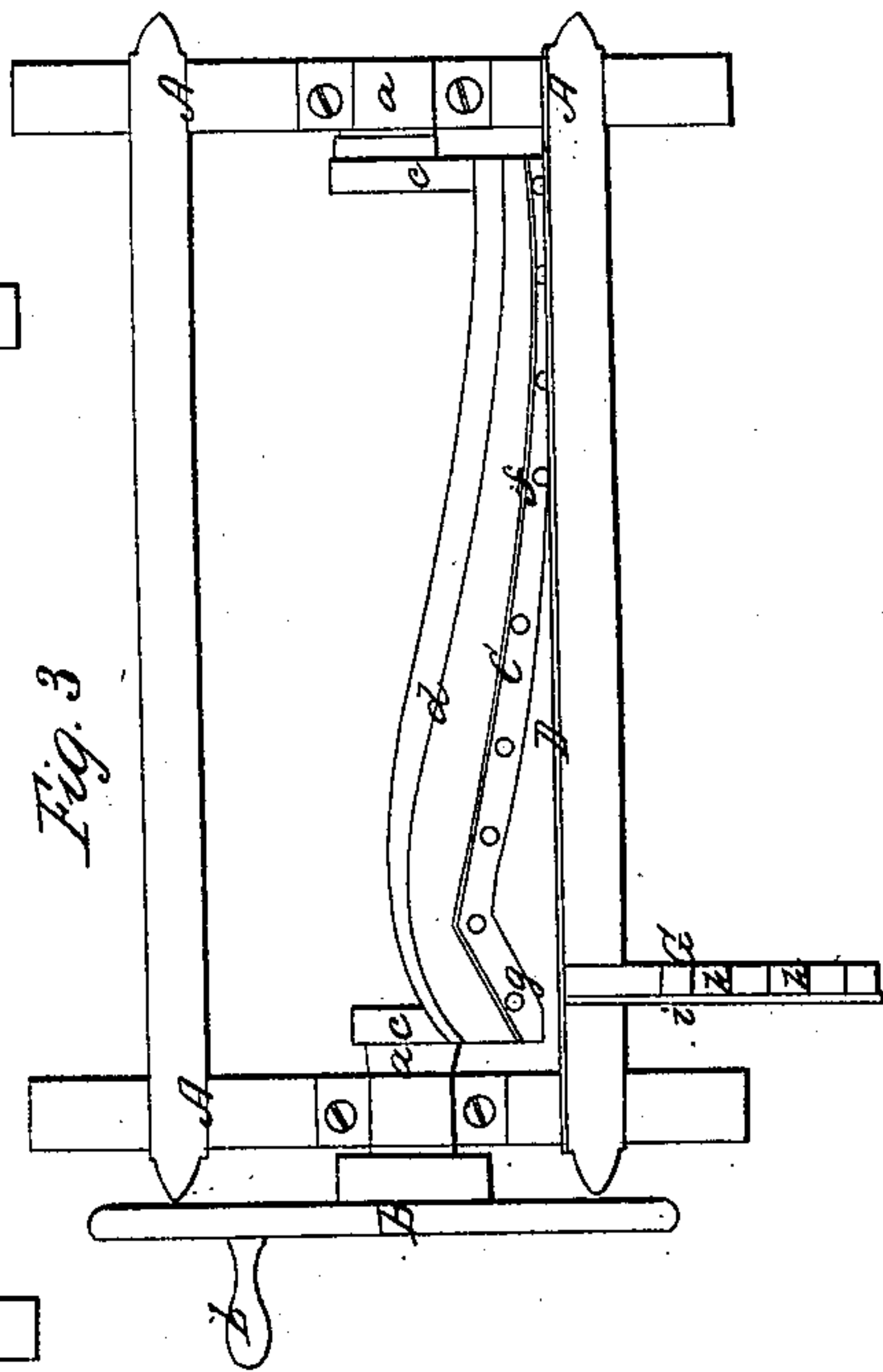
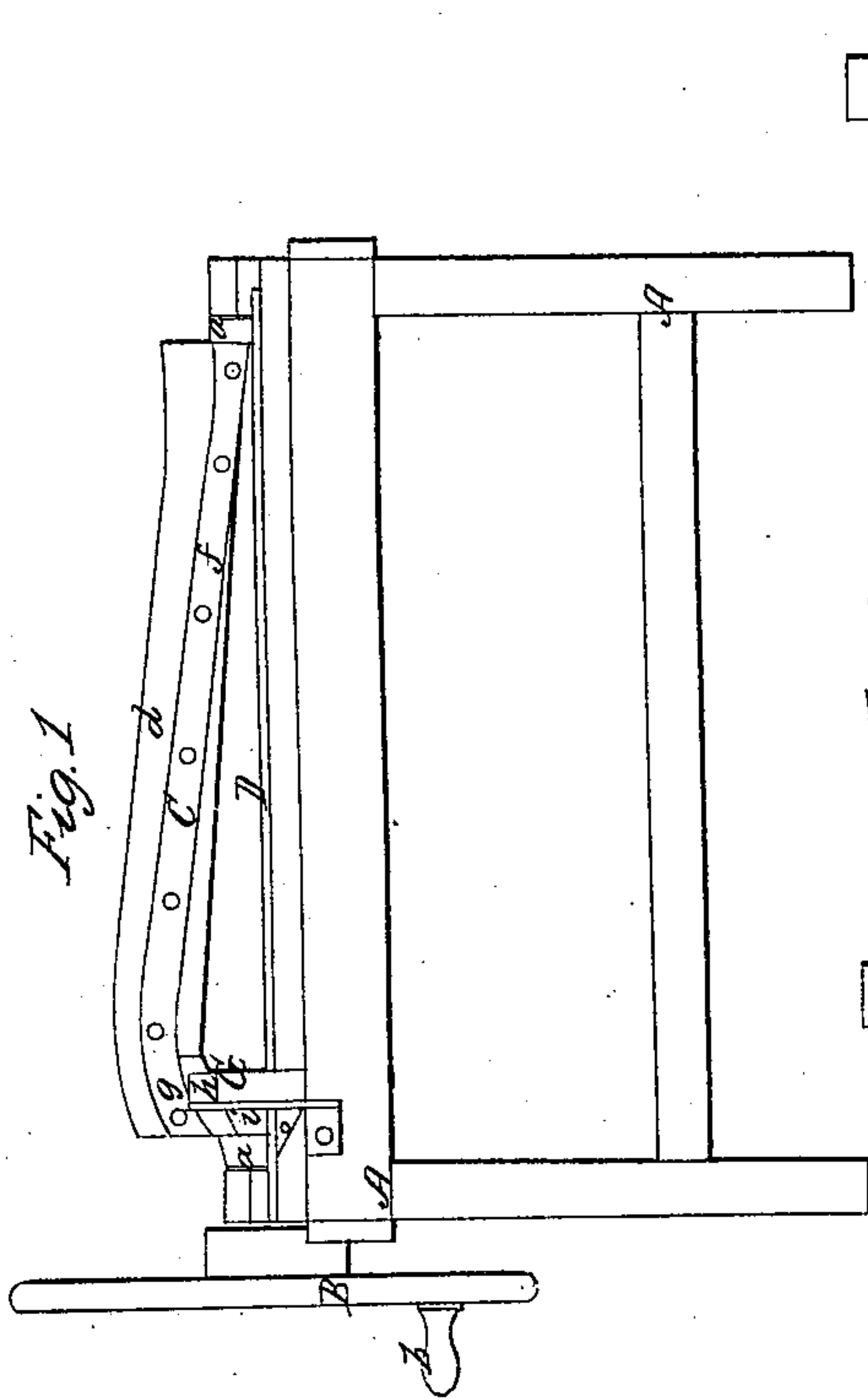
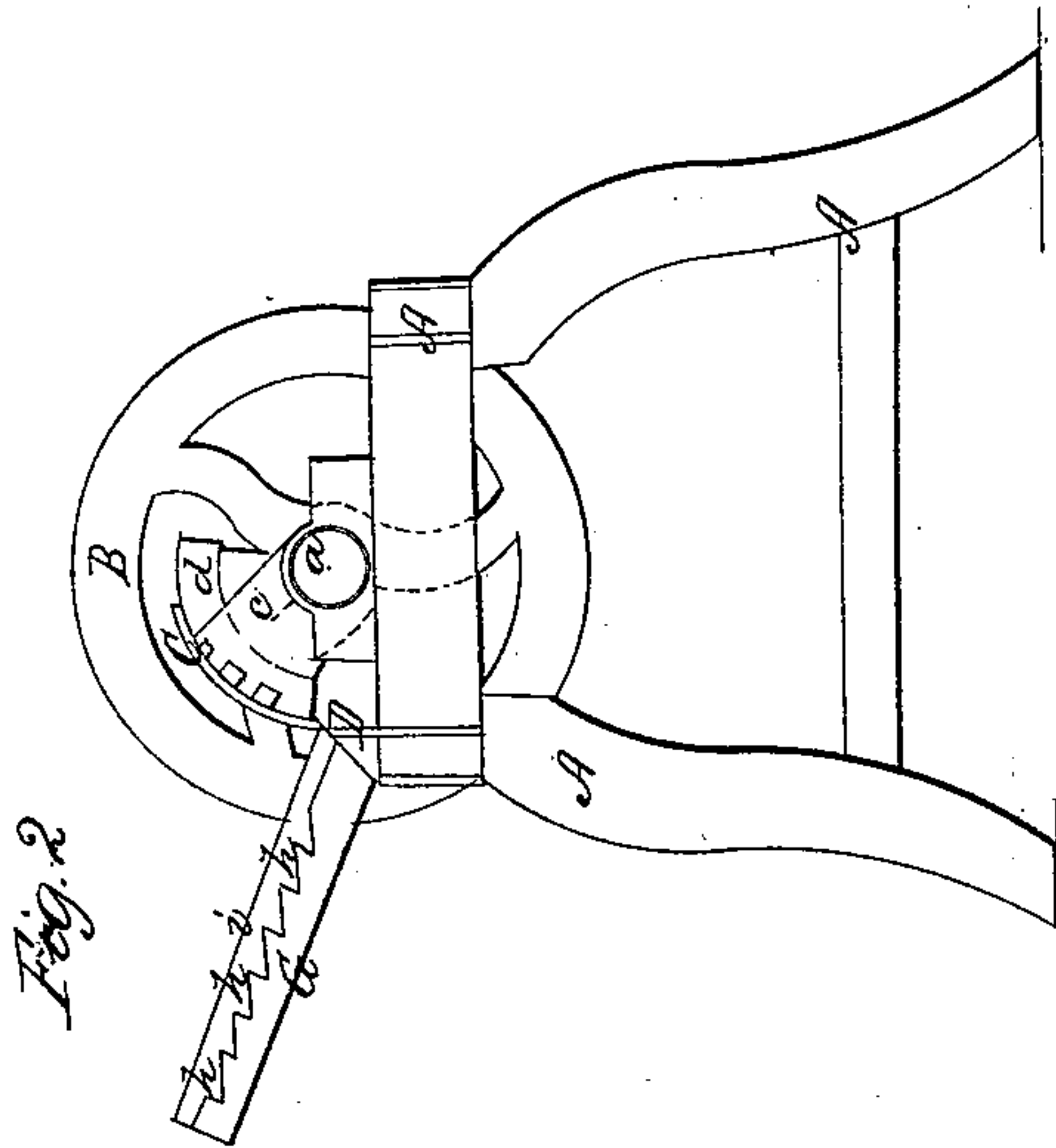


# H. J. Ruggles, Slate Cutter.

N<sup>o</sup> 81,112.

Patented Aug. 18, 1868.



Witnesses;  
G. J. Brown  
R. O. Smith

Inventor;  
Henry J. Ruggles  
By his atty.  
J. S. Brown

# UNITED STATES PATENT OFFICE.

HENRY J. RUGGLES, OF POULTNEY, VERMONT.

## IMPROVED SLATE-TRIMMING MACHINE.

Specification forming part of Letters Patent No. 81,112, dated August 18, 1868.

*To all whom it may concern:*

Be it known that I, HENRY J. RUGGLES, of Poultney, in the county of Rutland and State of Vermont, have invented an Improved Machine for Trimming and Squaring Slate; and I 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—

Figure 1 being a front elevation of the machine; Fig. 2, an end elevation thereof; Fig. 3, a plan of the same.

Like letters designate corresponding parts in all of the figures.

In trimming slate, ordinarily the knife strikes first one end or edge, and thence proceeds in a shearing manner through to the opposite end or edge. By this method of trimming, the last part of the cut is very liable to chip off corners of the slate, and thus injure it. I have found that, by beginning to shear with another knife or cutting-edge at the opposite end or side of the slate before the first knife or cutting-edge has passed entirely through, so as to cause the two cuts or cracks to meet at some distance from the edge, no such liability to chip or break off corners exists. Since this method of trimming cannot well be applied by hand, I have devised a simple machine for the purpose, as represented in the accompanying drawings.

Let A represent a frame of suitable construction and size for the purpose. Two bearings are formed on its opposite ends, to receive the shaft or journals *a a* of the trimming knife or knives. As shown, these are simple journals, and the bar *d*, to which the knife (or knives) is attached, is connected therewith by arms *c c*. The whole is turned by a crank or handle, *b*, on a balance-wheel, or the equivalent thereof.

The knife-bar *d* forms part of a cylinder, the periphery of which turns in close and uniform proximity to a straight stationary or leger blade, D, attached to one side of the frame A.

The knife C is attached in a spiral direction upon the periphery of the bar *d*, as to its portion *f*, so as to cut shearing, in connection with the leger-blade, from the outer end to its

inner termination, while the other portion, *g*, is arranged obliquely or spirally in the other direction, so as to shear from the other end toward the middle of the knife, in connection with the leger-blade. The two portions *f* and *g* might be of equal length, and begin to cut at the same time, be arranged equally spiral, meet in the middle, and cut alike; but it is better to cut mostly from one end, so that only the labor of cutting at one place at a time shall be required, and only to commence cutting at the other end when the main portion *f* of the knife has cut nearly through the slate. Thus the said portion *f* extends the greater part of the whole length of the knife, and the short portion *g* is set at a different inclination or degree of spiral from the long part *f*. These two parts may be separate knives, if preferred.

Not only does this construction of knives produce better work, but it is more rapid in its operation than ordinary slate-trimmers.

In connection with this trimmer I employ a gage, G, for squaring and evening the width of the slate. It is secured to the frame at right angles to the leger-blade D, and is composed essentially of the right-angled head-plate *i*, for squaring, and of the notched support *h*, for holding the slate to the blades and gaging the width thereof. The gage is placed at an inclination to the blades, as shown in Fig. 2, so that the weight of the slate will cause it to press forward against the displacing action of the cutting-knife.

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

The arrangement of the cutting-edges *f* and *g* of the moving knife, so as to cut from both opposite edges of the slate, and cause the cut to terminate at a distance from either edge, substantially as and for the purpose herein specified.

The above specification of my improved machine for trimming and squaring slate signed by me this 21st day of March, 1867.

HENRY J. RUGGLES.

Witnesses:

HENRY RUGGLES,  
E. CLARK.