E. G. Matthews,

Dressing Stone.

No. 10,156. Patented Oct. 25, 1853.

Fig. 2

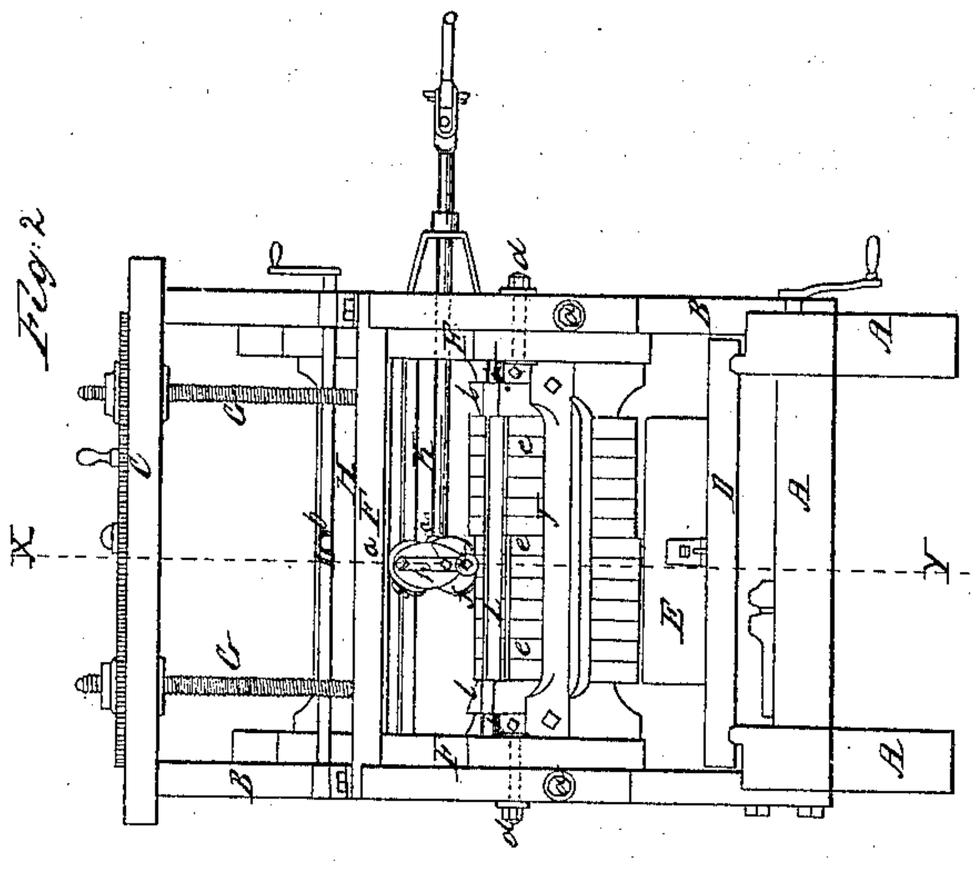

Fig. 4

Fig. 5

Fig. 6

Fig. 7

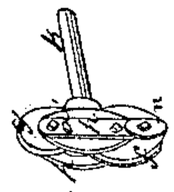

Fig. 1

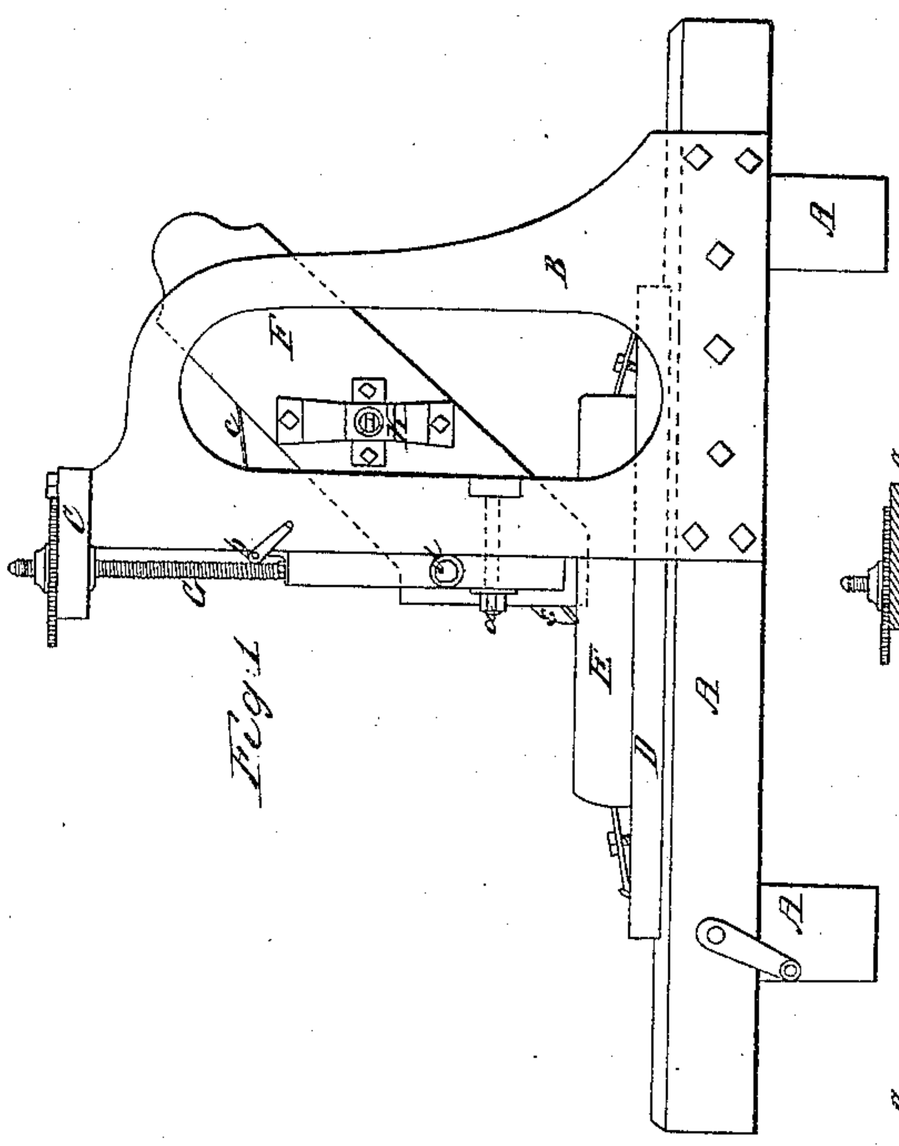

Fig. 3

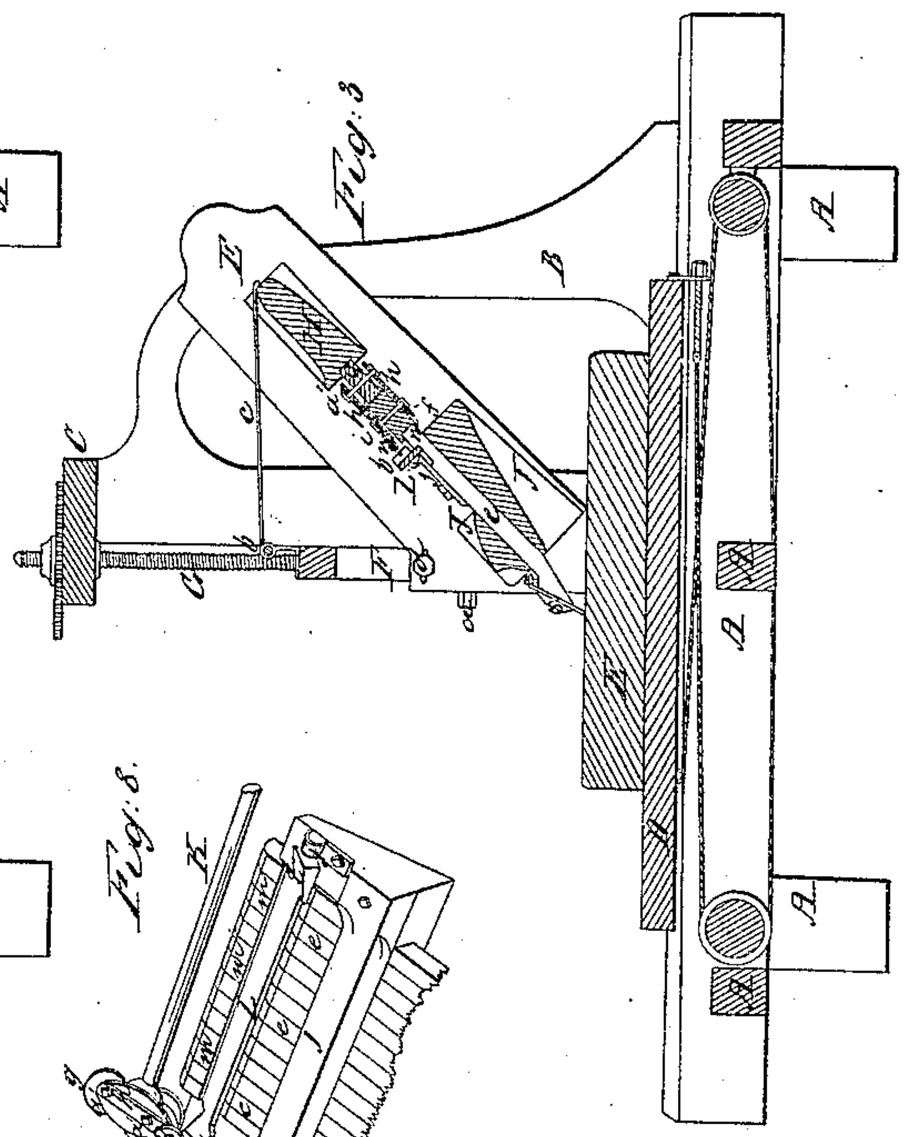

Fig. 8.

UNITED STATES PATENT OFFICE.

E. G. MATTHEWS, OF TROY, NEW YORK.

MACHINE FOR DRESSING STONE.

Specification of Letters Patent No. 10,156, dated October 25, 1853.

To all whom it may concern:

Be it known that I, E. G. MATTHEWS, of Troy, in the county of Rensselaer and State of New York, have invented a new and useful Improvement in Machines for Cutting or Dressing Stone; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a side elevation. Fig. 2 is a front view, showing the arrangement and mode of driving the cutters or chisels. Fig. 3 is a longitudinal vertical sectional view taken at the line X Y of Fig. 2. Figs. 4, 5 and 6, are enlarged views of the cutter stock and its parts. Fig. 7 is a detached perspective view of the driving and friction wheels, that drive the cutter. Fig. 8 is a detached perspective view of the rocking bar, cutter stocks, and driving apparatus, showing the combination of the bar, with the cutter stocks and roller on the frame of the driving apparatus, the same letters having reference to like parts in each figure.

The nature of my invention consists in the mode, or manner in which I drive the cutters, which is done by means of two wheels, each of like diameter, with their peripheries in contact, and arranged in a suitable frame attached to the end of a driving rod, so that the lower or driving wheel rolls over the inclined ends of the cutter stocks, and driving them down sufficiently to make the required cut in the stone; the upper or friction wheel at the same time, rolling against a cross bar, in a groove, said bar being placed in a parallel position with the heads of the cutter stocks. Also in the combination of the cutter stocks, and the roller or its mechanical equivalent attached to the frame of the driving wheel, with the rocking bar, the bar having inclined planes at each end upon which the roller, as the driving wheel reaches the end of its stroke, strikes, thereby causing the bar to rock against a shoulder in the cutter stocks, and bringing them up, in readiness to be again acted upon by the driving wheel on its return stroke. Also in the construction of the cutter stock so as to enable self sharpening and adjustable cutters to be used.

The construction and operation of my improved machine is as follows, viz:

A A is the frame work, B B upright side frames, C cap piece.

D is the carriage, to which is attached any of the known methods of feeding the stone to the cutters.

E is a block of stone arranged upon the carriage for dressing.

F F is an adjustable frame, sliding between the upright side frames, and is adjusted to suit any thickness of stone by means of the set screws G G and (*a a*) the angle of inclination of the cutters and stocks, is changed when required by means of winding or unwinding the windlass (*b*) with the rope or chain (*c*) attached to the cross bar H, and unloosening the set screws (*d d*) until the required alteration is effected, when they are tightened.

J is the case containing the cutter stocks (*e e e*) arranged side by side, and sliding by each other freely, as the driving wheel rolls over their heads.

The driving apparatus is constructed as follows, the lower or driving wheel (*f*) and the upper or friction wheel (*g*) are of like diameter and arranged upon the shafts (*a' a'*); the driving wheel is provided with flanges to guide it over the heads of the cutter stocks, the friction wheel rolls in a groove cut in the cross bar H of the adjustable frame, both wheels are arranged with their peripheries in contact, and in the frame (*h*) which is attached to the end of the driving rod K, by means of which, a reciprocating motion is given to the frame and wheels, over the heads of the cutter stocks.

L is a rocking bar, hung on its journals in the boxes (*j j*), at each end is an inclined plane (*l*), the inner edge of the rocking bar fits against a shoulder (*m*) cut in the upper faces of the cutter stocks, as the driving wheel reaches the end of its stroke, the friction roller (*n*) or its mechanical equivalent, strikes on the inclined plane, and rocks the bar, which catching under the shoulder of the cutter stocks throws them up in readiness to be again acted upon by the driving wheel in its return stroke.

The different parts of the cutter stock (*e*), are so made as to render the cutter adjustable and self sharpening; the follower (*o*) is made with a slot (*p*) in it to permit it to be screwed down past the bolt (*q*) and steady pin (*r*) of the cap (*s*) by the set screw M; this construction and arrangement forms a strong stock for the cutter (*t*) permitting thin plates of steel to be used for cutters, and

as they are worn down on the cutting edge by use, they can be readjusted with very little trouble, by means of the followers and set screws, until the cutters are worn out, and then can be replaced by new ones with little trouble and time.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. I claim the driving apparatus for driving the cutters; said apparatus being formed or constructed of the driving wheel (*f*) and friction wheel (*g*) arranged substantially as herein specified, in the frame (*h*) attached to the driving rod K, by means of which rod, a reciprocating motion is given to the said frame, which causes the driving wheel to roll back and forth, on and over the heads of the cutter stocks, thereby causing the cutters to make the desired cut in the stone, the friction wheel meanwhile rolling on the periphery of the driving wheel, and also in a groove in the cross bar as before described. I do not intend to confine or limit myself in this claim, exclusively to the use of one friction wheel, but hold myself at liberty to use one or more, and to vary the arrangement of them, while the principle of driving the cutters as herein described and shown is substantially adhered to.

2. I claim the rocking bar L, with inclined planes at each end; in combination with the cutter stocks (*e*) and the roller (*n*) or its mechanical equivalent attached to the frame (*h*) of the driving apparatus, for the purpose of rolling or striking on the inclined planes of the bar, as the driving apparatus reaches the end of its stroke, so as to rock or tip the bar, thereby causing the inner edge of the bar to catch or strike under the shoulders in the cutter stocks, and raise them up in position for the driving wheel to act upon them in its return stroke, substantially as herein specified.

E. G. MATTHEWS.

Witnesses:

JNO. J. SAVAGE,

JOHN MORAN.