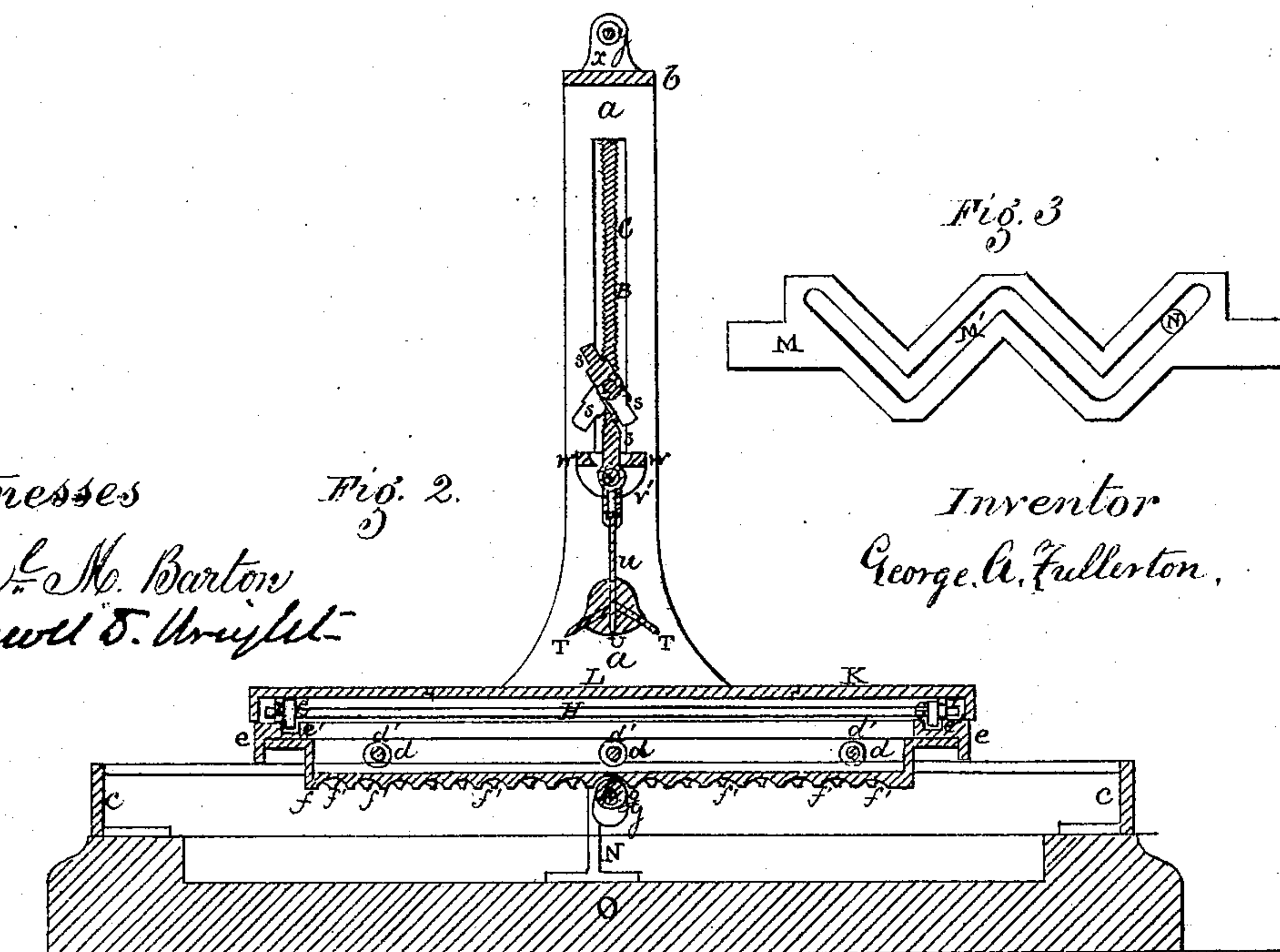
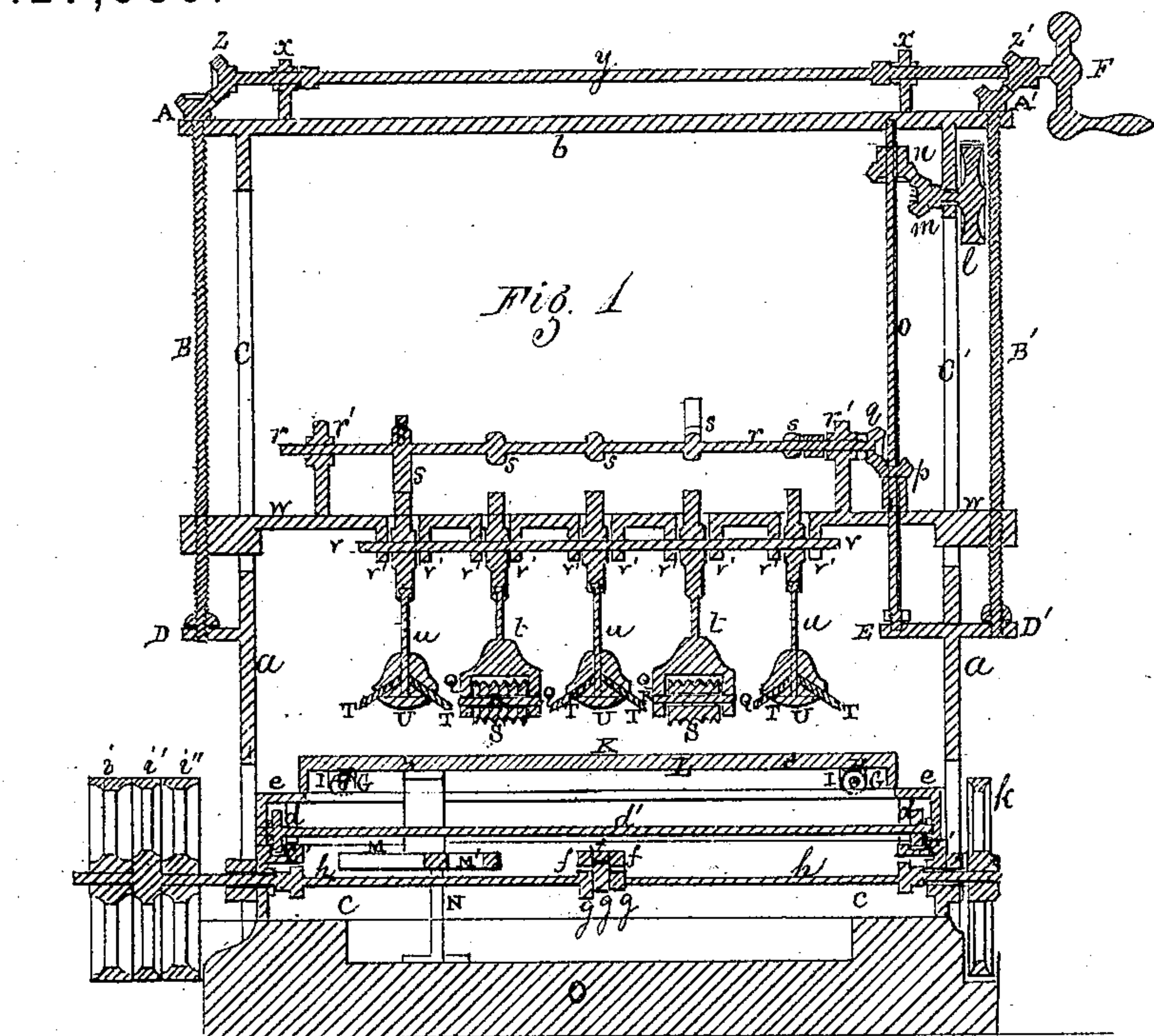


GEORGE A. FULLERTON.
Improvement in Stone-Dressing Machine.
 No. 127,589. Patented June 4, 1872.



Witnesses
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GEORGE A. FULLERTON, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN STONE-DRESSING MACHINES.

Specification forming part of Letters Patent No. 127,589, dated June 4, 1872.

SPECIFICATION.

I, GEORGE A. FULLERTON, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Stone-Dressing Machines, of which the following is a specification:

Figure 1 of the drawing is a central vertical transverse section. Fig. 2 is a central vertical longitudinal section, and Fig. 3 is a part in detail of my improved machine.

The present invention relates to certain new and useful improvements in machines for dressing granite and other stone, &c., and has for its principal objects the feeding along backward and forward, longitudinally and laterally, and revolving the granite, or other substance, in such a manner as to expose every portion of its surface to a mechanical action upon the stone, &c., as near like that produced by hand labor as possible, thereby dressing the stone as efficiently and more expeditiously and economically than by the ordinary method of dressing the stone by hand. My improvements consist mainly of a series of mechanical devices, to be fully explained in due course, so arranged and operated as to allow a granite or other slab or block to be carried backward and forward longitudinally and laterally and to be revolved below a series of adjustable hammers and cutters so arranged as to strike at different times and in various positions on the stone or other substance below them in such a manner as to effectually dress the stone, &c.

a a a in the drawing, represent the frame of my machine formed at the top with a cross-plate, *b*, and connecting at the bottom with a bed or platform, *c c*, formed with traveling-ways *c' c'*, which receive rollers *d d d* connected by shafts *d' d' d'* with a second bed or platform, *e e*, which is provided with traveling-ways *e' e'*, in which travel rollers *G G* operated by shafts *H H* supported by standards *I I* attached to a third or upper platform or bed, *K*. Instead of the rollers *d d d* and their shafts *d' d' d'* and the rollers *G G* and their shafts *H H*, operating in the ways *c' c'* and *e' e'*, the platforms may be made to travel on each other by any suitable arrangement that I may prefer to adopt. Attached to the platform *e e* are several parallel cam-bars *f f f*, each formed with curved indentures *f' f' f'*, &c., arranged

alternately with those on its parallel bar. Engaging with the cam-bars *f f f* are eccentric cams *g g g* connected with a shaft, *h h*, turning in the sides of the bed or platform *c c* and operated by the center one of three belt-wheels, *i i' i''*, arranged with straight and cross belts for the purpose of reversing the action of the shaft *h h*. Operated by the shaft *h h* is a belt-wheel, *k*, on the outside of the frame *a a a*, connecting with a belt-wheel, *l*, that actuates a vertical gear, *m*, engaging with a horizontal gear, *n*, which revolves a feathered shaft, *o*, that actuates a horizontal adjustable gear, *p*, which engages with a vertical gear, *q*, which operates a horizontal shaft, *r r*, supported by standards *r' r'* attached to an adjustable plate, *w w*. Attached to and revolving with the shaft *r r* are cams *s s s s s*, arranged at proper intervals and at different angles with each other so as to operate in such a manner as to connect with, and disengage from, one at a time with a top of a series of bush-hammers, *t t*, and pointing-hammers *u u*, arranged alternately with each other and so as to swing forward and backward on a shaft, *v v*, supported by standards *v' v'* formed on the plate *w w*. Supported by standards *x x* attached to the cross-plate *b*, is a shaft, *y*, formed at each end with gears *z z'* that engage with gears *A A'*, and operate screw-shafts *B' B* which engage with screw-threads formed in the ends of the plate *w w*, so as to raise and lower the plate *w w* and the several devices connected with it in the slots *C C'*, formed in the frame *a a*. The screw-shafts *B B'* and feathered shaft *o* find seats in bearings *D D'* and *E*, connected with the frame *a a a*. The shaft *y* is operated by a crank, *F*, or by any other suitable means. The bush-hammers *t t* are formed with bearings *Q Q* which support an axle, *R*, on which revolve cutters *S S*; these cutters *S S* may be formed in one circular piece with serrated periphery, or they may be of separate circular pieces with sharpened edges put together to form substantially one piece with serrated periphery, as in the former arrangement, or in either case the cutters may be made stationary so as not to revolve on the axle *R*. The pointing-hammers *u u* are arranged to swing on the shaft *v v* and also to revolve, and are supplied with a series of cutters, *T T T*, held in slots formed at intervals in the periph-

ery of the lower portion of the hammer *u* by the bottom or flange *U* of the stem of the hammer *u*, or by any other suitable method. The hammers *t t* and *u u* may be arranged so as to operate singly by an independent wheel and belt or other suitable motive power, and the cutters *S T* may be fed around by any suitable means, or revolved and rotated by the power produced by the blow of the cutters *S T* upon the stone, &c., or they may be fixed in the hammers *t t u u u* so as to dress the stone, &c., by a blow produced by the cutters *S T* simply falling upon it. The platform *K* is formed with a turn-table, *L*, in its center for the purpose of revolving the stone, so as to more readily assist in the adjustment of every part of its surface to the influence of the cutters *S* and *T*; and has attached to its under side a zigzag or **W**-shaped slotted piece, *M*, formed with a zigzag slot, *M'*, as shown in Fig. 3, which travels on a stem, *N*, attached to the bottom *O* of the machine.

The operation of my invention is as follows: Power being applied to the center belt-wheel *i'* revolves the shaft *h h* and engages the cams *g g g* with the cam-bars *f f f*, thereby causing the bed or platform *e e* to travel longitudinally by means of the rollers *d d d* operating in the ways *e' e'*, or by any other suitable method for producing the like result, and at the same time the longitudinal passage of the platform or bed *e e* causes the zigzag slot *M'*, of the slotted piece *M*, to travel on the stem *N* in such a manner as to carry, by means of the rollers *G G*, traveling in the ways *e' e'*, or by any other means adapted to the purpose, the upper bed or platform *K* backward and forward laterally on the platform *e e*, which, when it reaches the end of its course, is made to travel backward by the reverse action given to the shaft *h h* by the shifting of the belt on the belt-wheel *i'*. By the action above described the stone or other substance, which is placed on the upper platform or bed *K*, is carried forward and backward both laterally and longitudinally, and may be revolved if desired by the use of the turn-table *L*, so that any and every part of the stone, &c., will be brought in contact with the cutters of the hammers and be dressed to a perfectly level surface. By operating the shaft *h h* motion is communicated by means of the gears *m n p q* to the

feathered shaft *O* and horizontal shaft *r r*, thus causing the cams *s s s s s* to strike and pass over alternately, one at a time, the heads of the hammers *t t* and *u u u*, thereby swinging the hammers *t t* and *u u u* up and then suddenly letting them fall so as to bring the cutters *S T* heavily in contact with the top of the stone, &c., traveling below them, each blow on the stone causing the cutters *S S* to revolve, and the cutters *T T T* to rotate after each stroke, producing a revolving intermittent blow upon the stone, &c., similar to that made by the turning of the chisel in the hands of a stone-cutter. The plate *w w*, and consequently the hammers *t t* and *u u u* connected with it, are raised and lowered to accommodate slabs of any thickness to be admitted below them, by means of the screw-shafts *B B'* engaging with female screws formed in the ends of the plate *w w* and operated by the shaft *y* whose gears *z z'* engage with the gears *A A'* of the shafts *B B'*, the feathered-shaft *O* allowing the gear *p* to be raised or lowered so as to connect with the gear *q* as the plate *w* is changed in height.

Having thus fully described my improvements, what I claim as my invention and desire to have secured to me by Letters Patent, is—

1. The platform *K*, formed with a turn-table *L*, when combined with the following elements—viz.: the shafts *H*, rollers *G*, zigzag slot-piece *M*, stem *N*, and reciprocating-frame *e*—all as specified.

2. The frame *e*, when combined with the shafts *d'*, rollers *d*, cam-bar *f*, cam *g*, and bed *c*, all as described.

3. The swinging hammer *t* or *u*, when made to revolve on its socket, as set forth.

4. The zigzag slot-piece *M* with zigzag slot *M'* traveling on the stem *N*, the whole in combination with the platform *K*, frame *e*, and bed *c*, shaft *h*, cam-bar *f*, cam *g*, and belt-wheel *i*, substantially as explained.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE A. FULLERTON.

Witnesses:

SAML. M. BARTON,
CARROL D. WRIGHT.