ADAMS'
Imp^ts in stone dressing

2. sheets
(Sheet 1)

FIG 1

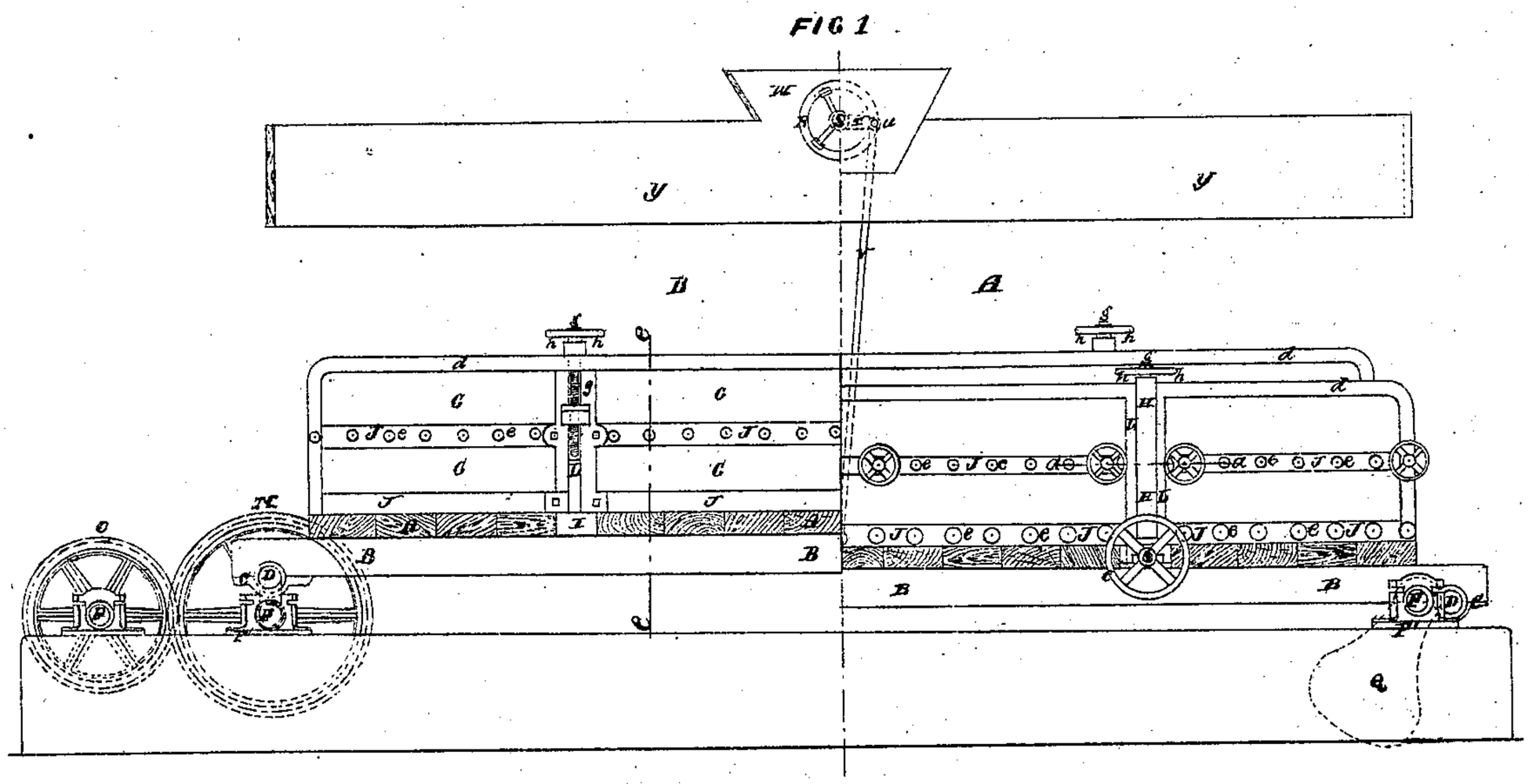
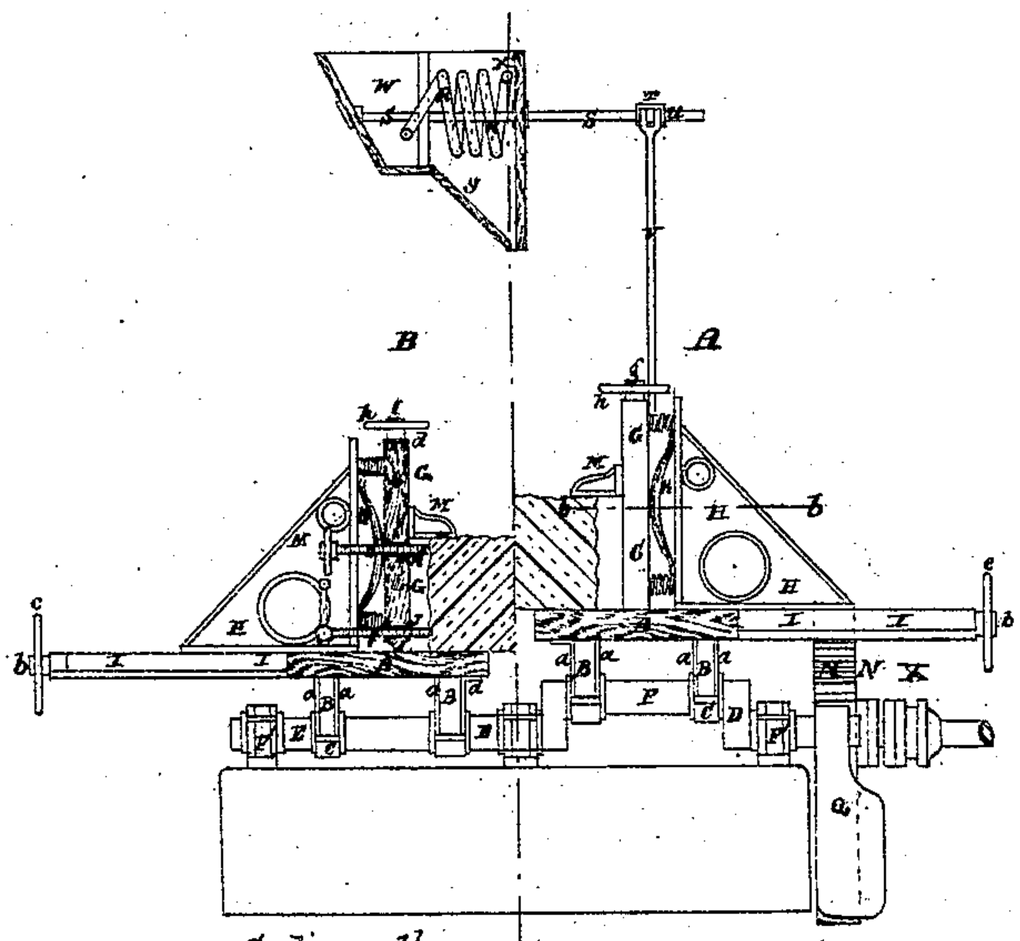


FIG 2



Section on the line e e fig. 1 Sheet 1

End Elevation

George Smith Witness
John Burn Dorig. Witness

Inventor
William Adams

ADAMS'
Imp^ts in stone dressing

2. Sheets.
(Sheet 2.)

PATENTED JUN 27 1871

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FIG. 1

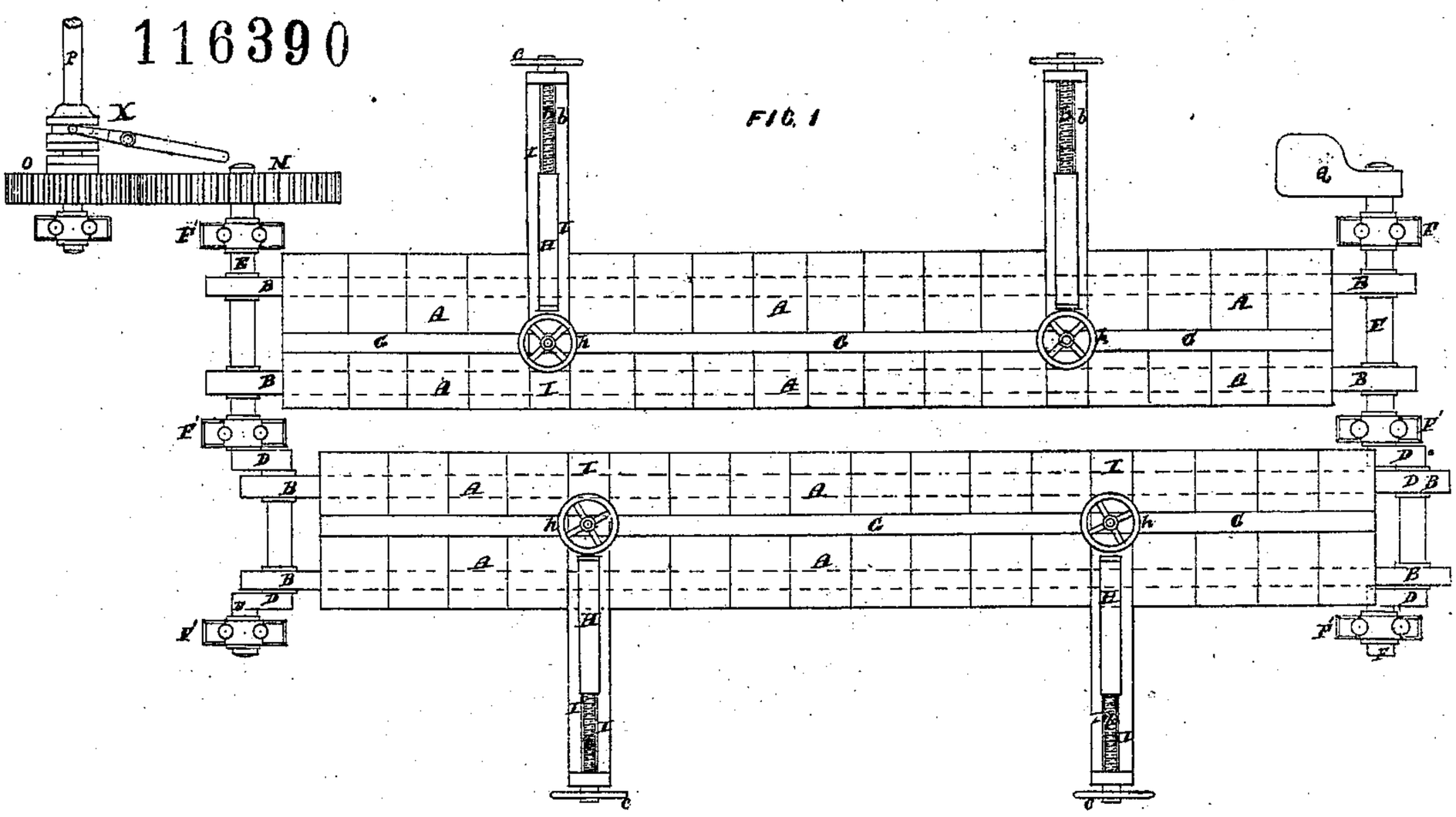


FIG. 2

Section on the line b b. fig. 2 Sheet 1.

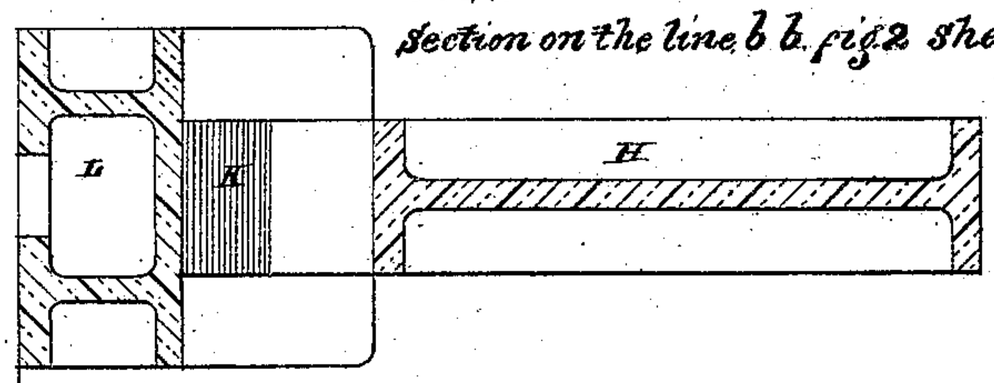
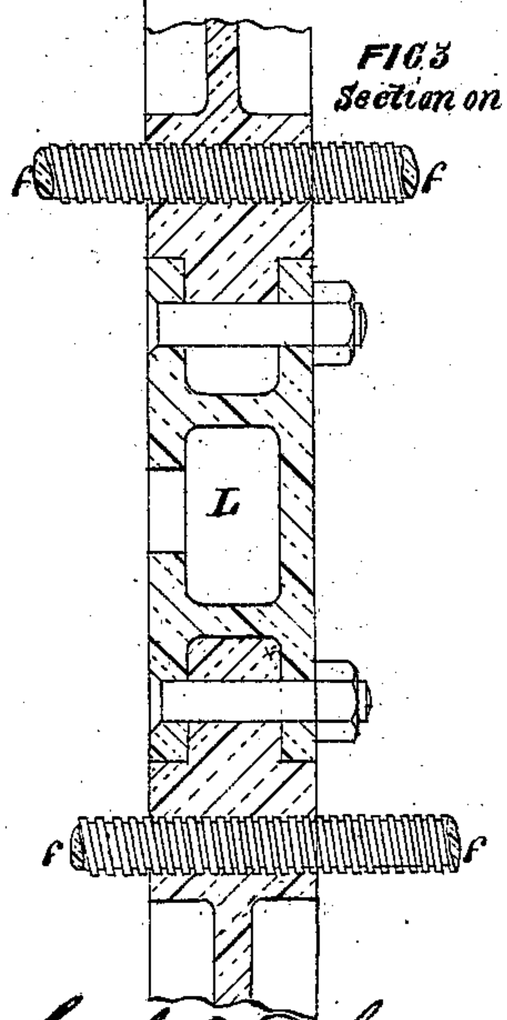


FIG 3
Section on the line a a. fig. 1. Sheet 1



George Smith Witness
Thos Bailey Doig Witness

Inventor
William Adams

UNITED STATES PATENT OFFICE.

WILLIAM ADAMS, OF EDINBURGH, NORTH BRITAIN.

IMPROVEMENT IN MACHINES FOR DRESSING STONES.

Specification forming part of Letters Patent No. 116,390, dated June 27, 1871.

To all whom it may concern:

Be it known that I, WILLIAM ADAMS, formerly of Glasgow, in the county of Lanark, North Britain, but now residing in Edinburgh, in the county of Mid-Lothian, North Britain, have invented Improvements in Dressing Stone, and in the machinery or apparatus employed therefor, of which the following is a specification:

This invention, which has for its object the effecting of economy in the cost of and time occupied in the dressing or finishing of the surfaces of blocks of stone used in buildings and other structures, consists of a special arrangement of machinery, wherein the stone to be dressed or finished is operated upon.

The machinery consists of a pair of horizontal or inclined tables or frames having adjustable vertical frames placed on them, and against which the stones to be dressed are held during the dressing operation. The tables and frames are connected at both ends to crank-shafts, which are rotated by an engine or other motive agent, the motion of the cranks producing a compound sliding motion of the tables, each table at any one instant of time being thus moved in a direction opposed to that of the other table.

When, then, the stones to be dressed are placed on the tables, one surface of the stone on one of the tables is brought into contact with a corresponding surface of the stone on the other table, so that, being adjusted by screws and pressed by springs against each other, as they move correspondingly with the tables they rub against each other; in this manner the disintegrating effect of the rubbing action being assisted by water and sand, the uneven surfaces are rubbed until the stones have true or level surfaces. For the purpose of feeding the sand gradually, and for stopping it being fed at the moment the machine is stopped, a feeder, consisting of a spiral tube is employed, this tube being revolved in a box of sand in such manner that the sand passes into it at one end and is discharged through the spiral at the opposite end, on the surface being dressed.

In Figure 1, Sheet 1, that side of it with A superposed, is a half-longitudinal elevation, and the other side, with B superposed, is a half-longitudinal section, showing certain parts in elevation of the improved machine for dressing the surfaces of stone hereinbefore referred to. Fig. 1, Sheet 2, is a plan of the same having the sand-box removed; while Figs. 2 and 3, Sheet 2, are enlarged horizontal sections, respectively, of the vertical frames upon the line *a a*, Fig. 1, Sheet 1, and line *b b*, Fig. 2, Sheet 1, here given in order to show the structure of these parts more distinctly than shown in the preceding figures.

The same letters of reference mark the same or corresponding parts upon the different figures and sheets in which they occur.

The arrangement of this improved apparatus, illustrated upon the appended sheets of drawings, consists of two horizontal tables, A A, constructed, by preference, of strong timber planking, in the manner shown, and carried by means of longitudinal bearers B B, which are also, by preference, made of timber, and sheathed or covered on the sides with iron plates *a a*, as more particularly shown at Fig. 2, Sheet 1. The said bearers B B are also made to serve the purpose of connecting-rods by having bearings C C attached to each end, and coupled to the cranks D D upon the shafts E and F, which shafts are carried by means of the pillow-blocks F′. Upon the horizontal tables A A vertical frames G G are placed, which are capable of being moved transversely to any required distance apart, according to the width or thickness of the stones to be or being dressed, by turning the screw-spindles *b b* through the intervention of the hand-wheels *c c*, which cause the frames H H upon the grooved frames I I to move transversely in a direction outward or inward, according as the hand-wheel *c c* and therewith the screw-spindles *b b* have been turned. The vertical frames G G are constructed, by preference, of timber, and have their upper edges and ends sheathed by plates of iron *d d* riveted or bolted thereon. They have also stringers J J, of iron, running longitudinally, between which the timber planking is secured; and passing transversely through the stringers J J, and at suitable distances apart, a series of screw-bosses, *e*, is situated, and into any of which the set-screws *f f* may be inserted for the purpose of adjusting the article to be dressed. Between the vertical frames G G and the brackets H H bow-strings K K may be fixed. These have the effect of pressing the frames G G inward—that is, toward the center of the machine—and consequently the surfaces of the articles to be dressed upon both of the tables are thus kept continually in rubbing or grinding contact. For the purpose of keeping

the stones, when on the tables A A, from being raised off or otherwise loosened from them by the action of the mechanism when in motion, the frames G G are provided with vertical grooved stringers L L, upon which the grinding-blocks or jaws M M are moved vertically and pressed firmly down upon the tops of the stones to be or being dressed, by means of turning the screw-spindles *g g* through the intervention of the hand-wheels *h h*.

The mechanism for feeding the sand consists of a spiral tube, R, fixed upon an axle, S, upon one end of which a crank, T, is secured, which is coupled at U to the connecting-rod V, the lower end of which is fastened to any convenient part of the vertical frames G, and thereby the spiral tube R is made to revolve by the action of the said frames G. One end of the spiral tube R is situated in the interior of a hopper, W, containing sand, a certain quantity of which enters the tube R, and by the spiral action is carried onward and discharged through the opposite end at X′, and distributed over the entire length of the inclined guide-board Y, from which it drops upon the surfaces being dressed.

The entire apparatus is actuated or put in motion by means of a spur-wheel, N, fixed upon one end of the crank-shaft E, and geared into another and corresponding spur-pinion, O, which is placed upon the driving-shaft actuated by the prime mover P, and provided with an ordinary clutch arrangement, as shown at X, Fig. 2, Sheet 1, and at Fig. 1, Sheet 2, so as to enable the dressing apparatus to be stopped without the necessity of stopping the engines or driving-power.

In order to secure as far as possible a uniform load upon the working parts, and consequently a regular motion, a balance-weight, Q, is fixed to the end of the crank-shaft F in a position so as to counterbalance the weight of the cranks D D and the tables A A with their respective loads.

Having now described the nature of my said invention, and the manner of carrying the same into practical effect, I would observe, in conclusion, that I am aware that machines have previously been constructed for dressing stone wherein the dressing has been effected by bringing the surfaces of the stone in contact, and by causing them to rub against each other while revolving on circular tables. The dressing of the stone, therefore, by the rubbing or grinding together of their surfaces, constitutes no part of my present invention; but

What I do consider as novel and original, and therefore claim as the invention secured to me by the hereinbefore-in-part-recited Letters Patent, is—

1. The combination, in stone-dressing machinery, of stone-holding tables and cranks for actuating the same, the two being connected, substantially as herein shown and described, so that the tables shall move with and follow the path of the cranks with which they are respectively connected, as set forth.

2. The combination, in stone-dressing machines with vertically-moving tables actuated by cranks, as described, of springs for pressing together the stones as they are being dressed, substantially as herein described.

3. The combination, with the stone-supporting tables, of the jaws or gripers, constructed substantially as herein shown and described, to hold the stones upon the tables.

4. In stone-dressing machines the combination, with vertically-moving tables which support the stones, of the spiral feeder, constructed substantially as herein described, and arranged to supply sand to the surfaces of the stones being dressed, as shown and set forth.

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

WILLIAM ADAMS. [L. S.]

Witnesses:

GEORGE SMITH,
Law Agent, Leith.

JOHN BURN DOIG,
Seafield House, Leith.