

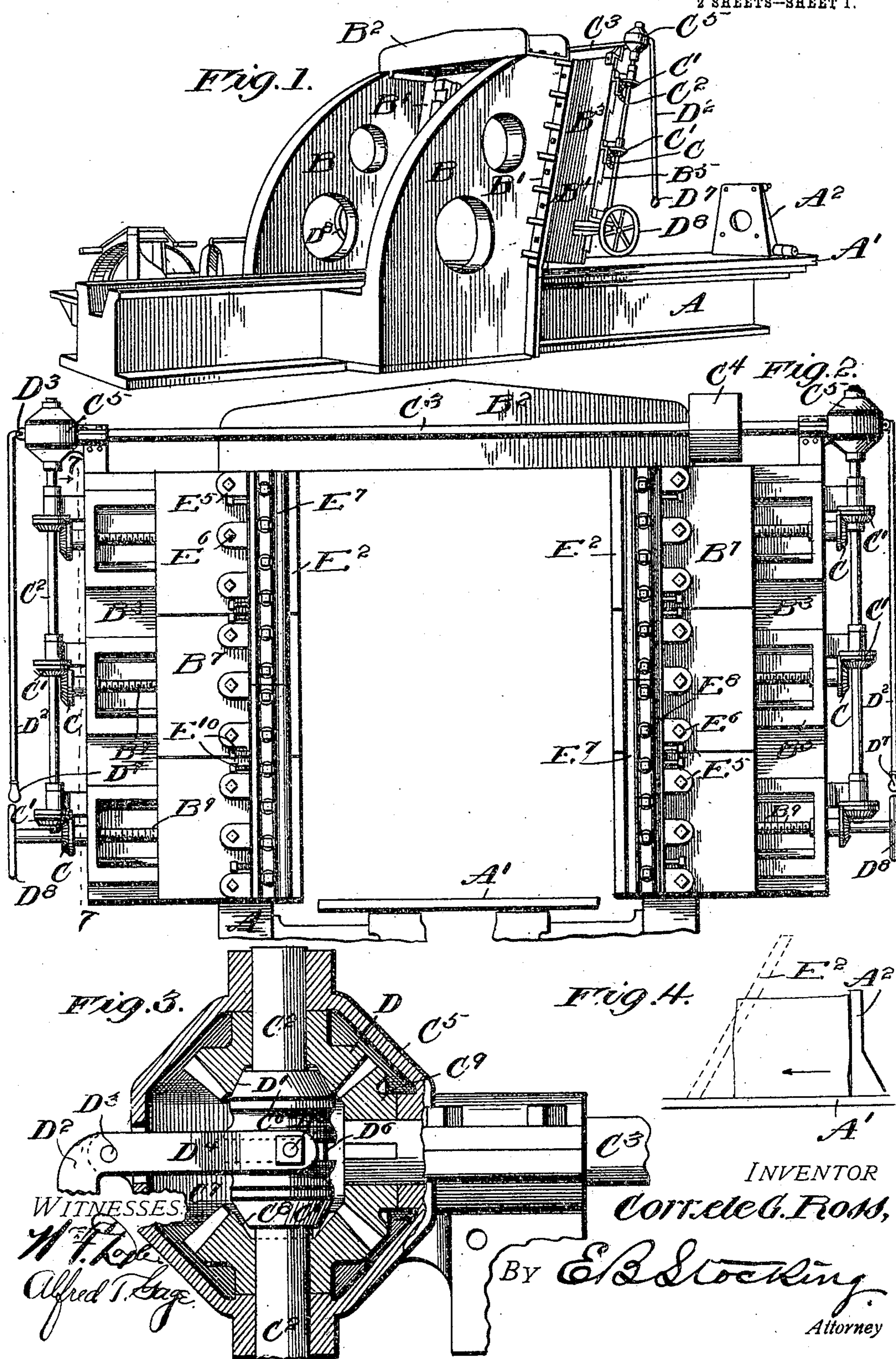
No. 807,780.

PATENTED DEC. 19, 1905.

C. G. ROSS.
STONE PLANER.

APPLICATION FILED AUG. 5, 1905.

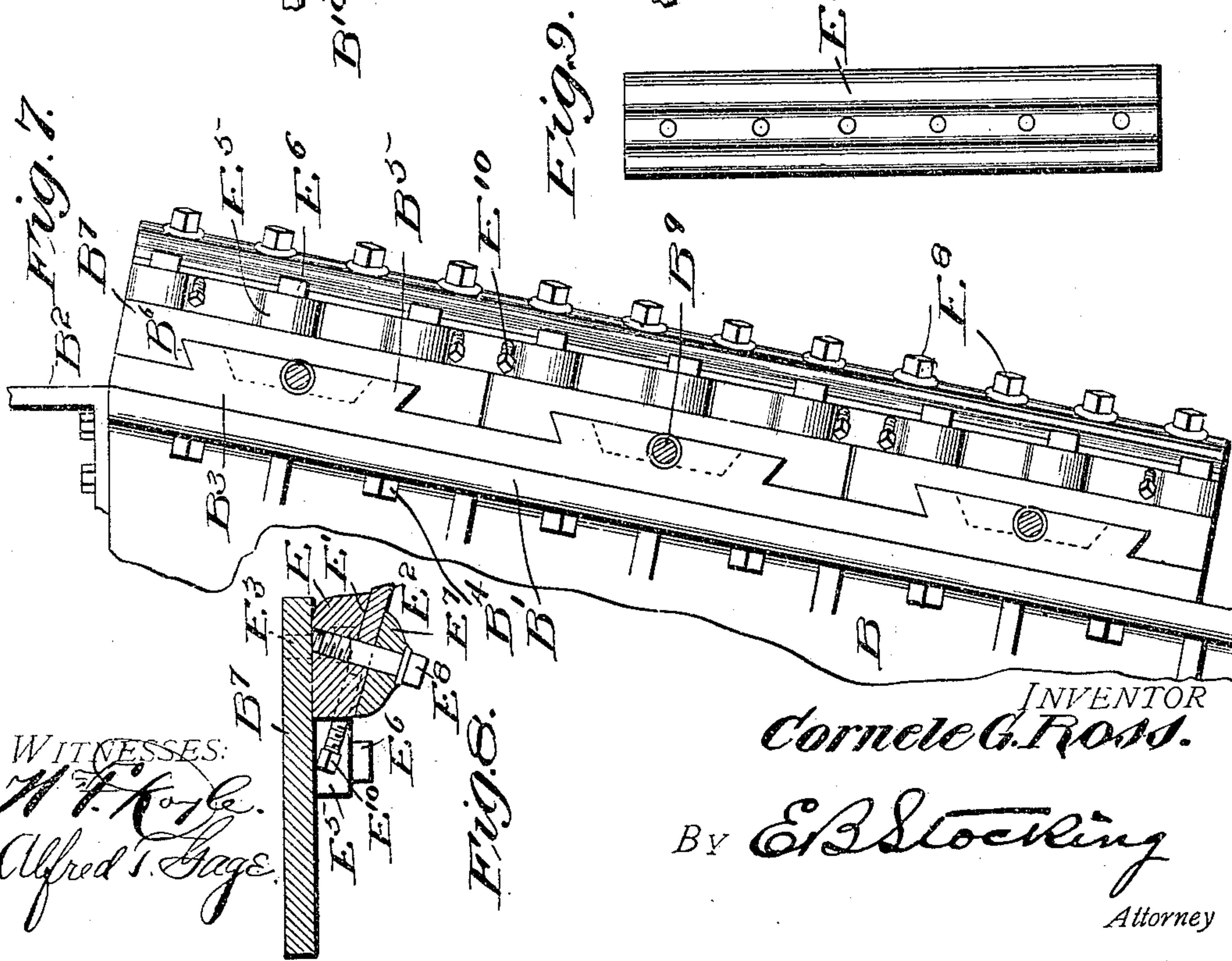
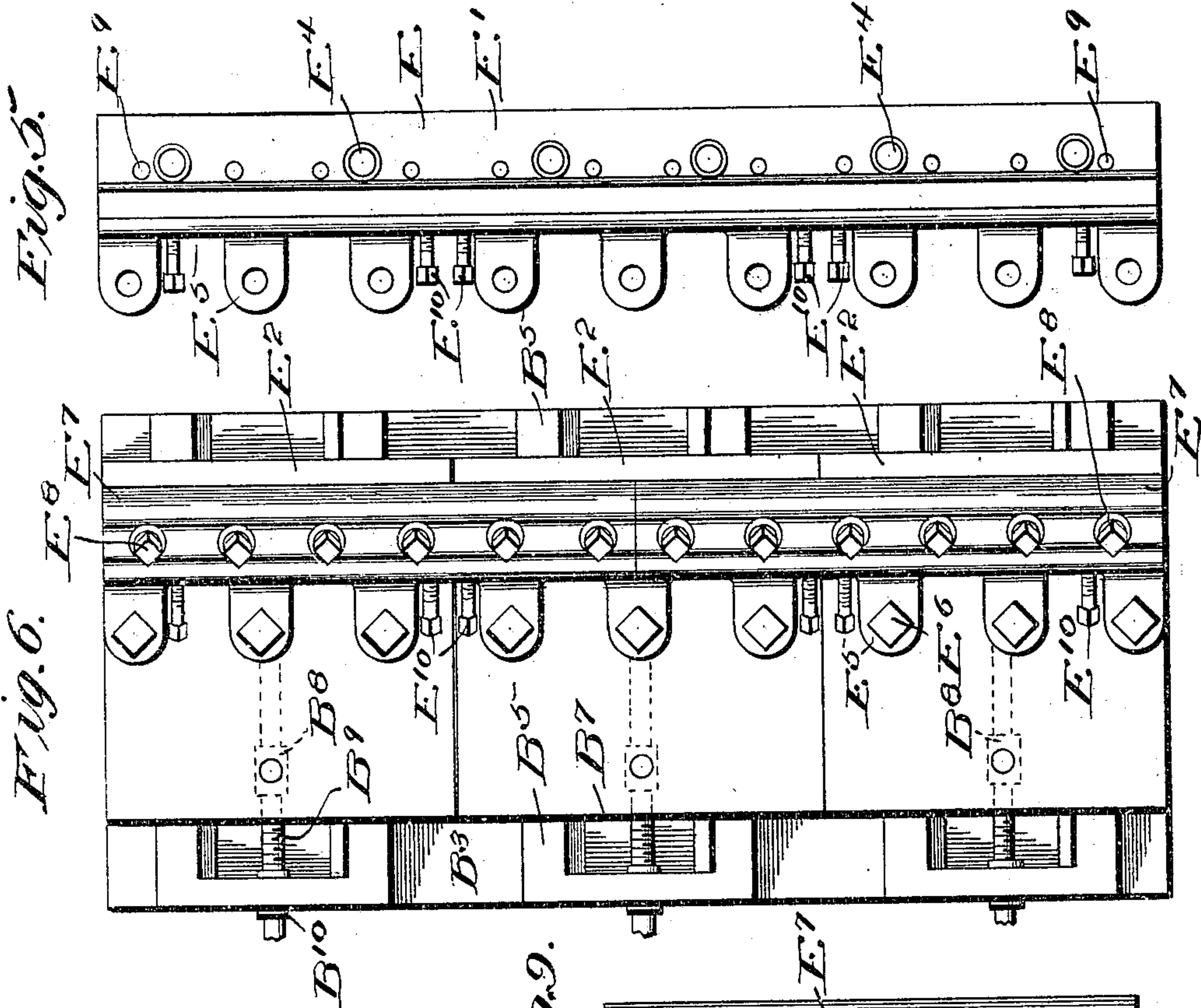
2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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STONE-PLANER.

No. 807,780.

Specification of Letters Patent.

Patented Dec. 19, 1905.

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To all whom it may concern:

Be it known that I, CORNELE G. ROSS, a citizen of the United States, residing at Rutland, in the county of Rutland, State of Vermont, have invented certain new and useful Improvements in Stone-Planers, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to stone-planers, and particularly to a machine adapted for scabbling or dressing blocks of stone as taken from the quarry.

15 An object of the invention is to provide an improved construction and arrangement of parts for supporting the cutting-tools in a plane extending diagonally to the path of travel of the platen of the machine, so as to secure a shearing cut across the block carried by the platen, thus tending to hold the same down and to prevent chipping or breaking away of the edges of the block as the cutters pass beyond the same.

25 A further object of the invention is to provide an improved construction and arrangement of the cutter-holders whereby they may be readily adjusted toward and from the work and the tools retained therein in the most desirable manner to permit the use of a series of cutting-knives of a higher grade of steel and lighter in weight than the usual forged tools.

35 Other objects and advantages of the invention will be hereinafter set forth and the novel features thereof defined in the appended claims.

40 In the drawings, Figure 1 is a perspective view of the machine. Fig. 2 is a front elevation of the tool-holders and adjusting means. Fig. 3 is an enlarged detail section of the reversing-feed for these holders. Fig. 4 is a diagram illustrating the cut upon the block. Fig. 5 is a plan of the base of the tool-holder. Fig. 6 is a similar view of the holder assembled upon the adjusting-plates. Fig. 7 is a section on line 7 7, Fig. 2, on an enlarged scale. Fig. 8 is a detail cross-section through the assembled tool-holder; and Fig. 9 is a plan of the clamping-plate of this holder.

50 Like letters of reference refer to like parts in the several figures of the drawings.

The letter A designates the base of the machine, which may be of any desired character, and provided with a platen or table A',

mounted to travel longitudinally thereon 55 and driven by any usual means suitable for the purpose. This platen is also provided with the ordinary work-holder A², which is adjusted into proper contact with the blocks to be planed or dressed by the machine. At 60 opposite sides of the machine posts or standards B are provided and formed of suitable configuration to support the cutting-tools and resist the strain exerted thereon. These posts are provided at the front faces with 65 the flange or plate B', disposed diagonally to a vertical line and also diagonally to the path of travel of the platen, so as to produce a shearing cut across the block of stone or other material thereon, as shown by the diagram in Fig. 4. These faces may be disposed 70 at any desired angle relative to the platen, preferably that herein shown, which in the resistance of the stone to the cutter produces a downward pressure, effectually 75 holding the stone in position on the platen and beginning the cut at one corner of the stone and gradually increasing the cutting area, so as not to break or split the corners of the stone as the cutter passes on or off the same. 80 These posts are preferably connected at the upper ends by the bridge bar or plate B², and upon the diagonally-disposed plates B' a bearing-plate B³ is mounted and secured in any desired manner—for instance, by bolts or 85 screws B⁴. This plate is provided upon its face with ribs or ways B⁵, preferably dovetailed, as shown in Fig. 7, and adapted to seat in similar grooves B⁶, formed in the adjustable plates B⁷. These adjustable plates 90 are provided upon their inner faces with the fixed nuts B⁸, adapted to receive the adjusting-screw B⁹, which is rotatably mounted at B¹⁰ in the plate B³ and preferably disposed intermediate of the ribs B⁵ thereon. These 95 adjustable plates, carrying the tool-holders, may be operated in any desired manner, but preferably by the means shown in Figs. 2 and 3, wherein the adjusting-screws B⁹ are each provided with a driving-gear C, adapted to 100 mesh with a corresponding gear C', carried upon the vertically-disposed driving-shaft C², the upper end of which is adapted to be driven by the power-shaft C³, carrying the pulley C⁴, by means of the clutch connection 105 shown in Fig. 3, which is preferably inclosed in the casing C⁵. This connection comprises an opposite cone member C⁶, slidingly se-

cured or splined upon the shaft C² and adapted to cooperate at its lower end with a bevel-pinion C⁷, having a friction-seat C⁸ in its upper face to engage the cone of the clutch and
 5 being normally in mesh with the bevel-pinion C⁹, carried by the power-shaft C³, which extends laterally of the machine above the cutters thereon. A reversing gear or pinion is loosely mounted upon the upper end of the
 10 shaft C³ and normally intermeshes with the gear C⁹. This reversing-gear is provided with a seat D' in its face, adapted to receive the other cone-face of the clutch member C⁶ when the same is shifted into contact there-
 15 with. This shifting is accomplished by means of an angle-lever D², pivotally mounted at D³ and having its arm D⁴ extending within the casing and provided with projections D⁵, entering the groove D⁶ of the clutch
 20 member C⁶. The lower end of this lever D² is provided with a handle D⁷, by which it may be operated. These handles are duplicated on opposite sides of the machine in order that each operator may control the cuts
 25 on his side of the machine, as, owing to the height of the stone upon the platen, the operator upon one side cannot ordinarily observe the holders or the cutters upon the opposite side of the stone. It will be seen that the
 30 shifting of the clutch in one position will move the cutters up to the stone, while an intermediate position thereof stops the adjustment of the cutters, and the opposite extreme of movement of the clutch quickly withdraws
 35 the cutters, which is necessary when a return movement of the machine is desired, as the tool-holder is rigidly mounted upon the posts. For the purpose of effecting minor adjustments the shaft of the lower adjusting-screw
 40 may be continued outward and provided with a hand-wheel D⁸, as shown in Figs. 1 and 2.

The improved form of tool-holder consists of a base-plate E, having an inclined upper
 45 surface E', as shown in Fig. 8, adapted to receive the cutter E². This base-plate is secured to the adjusting-plate B⁷ by means of the screws E³, (shown in dotted lines in Fig. 8,) extending through the countersunk aper-
 50 tures E⁴, and also by means of apertured lugs E⁵ at the rear of the base, adapted to receive securing-screws E⁶. For the purpose of securing additional bearing-surface and even adjustment the adjusting-plates are arranged in
 55 series—for instance, three, as herein shown—and the base of the tool-holder is a continuous piece extending over these series. The tools or cutters E² are preferably also formed in series, three being herein shown, and are
 60 secured in position by means of the clamping-plates E⁷, two being herein used in order to overlap the joints between the cutters E², and these plates E⁷ are held in position by means of the securing bolts or screws E⁸, ex-
 65 tending therefrom into the base, apertures E⁹

being provided therein for that purpose. For the purpose of adjusting the cutters E² into proper alinement with each other threaded apertures are provided in the rear base-plate E to receive adjusting-screws E¹⁰, which bear
 70 against the opposite ends of the cutters.

In the operation of this machine the block of stone to be scabbled or dressed is carried by the platen into contact with the cutters supported upon the diagonal faces of the
 75 posts and a shearing cut secured thereon, as shown by the diagram in Fig. 4. This form of cut offers the least resistance to the tool and prevents chipping or injury to the block, while the resultant cutting strain is partly
 80 taken up by the downward pressure of the block upon the platen. The dressing of blocks of limestone and similar material for shipment in this manner is very important, as it obviates the necessity of making the
 85 usual allowance in size for hand-scabbling, which materially increases the size of the block and effects both the space required for shipment and the cost thereof, as the scabbling performed by a machine of this charac-
 90 ter requires only the allowance of one-half an inch for each finished surface, and by a machine of the character described blocks of stone for bridge or foundation work can be
 95 simultaneously dressed upon two sides, thus effecting an economy in the time and cost of such dressing. The form of tool-holder shown permits the adjustment of the tools for the full height of the machine by power
 100 means and their immediate withdrawal in the reversal of the platen. The form of tool-holder also permits the use of separate cutting-knives, thus saving the forging of the tools, and permits the use of a higher grade of
 105 steel and lighter weight thereof, as the cutting-tool is clamped in position and adapted to be adjusted in its holder by the means hereinbefore described.

Having described my invention and set forth its merits, what I claim, and desire to
 110 cover by Letters Patent, is—

1. In a machine of the class described, a base, a platen traveling thereon, and a post inclined diagonally to the plane of said platen and adapted to support a tool at a similar in-
 115 clination to that of the post.

2. In a machine of the class described, a base, a platen traveling thereon, a vertically-disposed post inclined diagonally to the plane of said platen, a tool-holder upon said post,
 120 and means for adjusting said tool-holder laterally on said post.

3. In a machine of the class described, a base, a traveling platen mounted thereon a post provided with a ribbed support, a series
 125 of plates slidably mounted upon said ribs, a tool-holder carried by said series of plates, and adjusting-screws connected to simultaneously shift the plates of said series.

4. In a machine of the class described, a
 130

base, a traveling platen mounted thereon, posts provided at opposite sides thereof, a series of plates slidably mounted upon each of said posts, tool-holders carried by each of
 5 said plates, adjusting-screws connected to simultaneously shift the plates of each series, and means for simultaneously shifting both series of holders toward and from each other.

5. In a machine of the class described, a
 10 base, a traveling platen disposed thereon, a vertically-disposed post at one side of said platen and having a face inclined outwardly forward from the plane of the platen, and a tool-holder mounted upon said face.

15 6. In a machine of the class described, a base, a traveling platen mounted thereon, a post provided with a ribbed support, plates slidingly mounted upon said ribs, a tool-holder carried by said plates, adjusting-screws
 20 for said plates, a driving-shaft geared to each of said adjusting-screws, and a power-shaft geared to said driving-shaft.

7. In a machine of the class described, a
 25 base, a traveling platen mounted thereon, a post provided with a ribbed support, plates slidingly mounted upon said ribs, a tool-holder carried by said plates, adjusting-screws for said plates, a driving-shaft geared to
 30 each of said adjusting-screws, a power-shaft geared to said driving-shaft, and a reversing mechanism disposed between said power-shaft and driving-shaft.

8. In a machine of the class described, a
 35 base, a traveling platen mounted thereon, a post provided with a ribbed support, plates slidingly mounted upon said ribs, a tool-

holder carried by said plates, adjusting-screws for said plates, a driving-shaft geared to each of said adjusting-screws, a power-shaft geared to said driving-shaft, gears loosely
 40 mounted upon the upper end of the driving-shaft and meshing with a gear upon the power-shaft, and a reversing-clutch secured to said driving-shaft and adapted to engage either of said gears.

9. In a machine of the class described, a
 45 post, a tool-holder mounted thereon comprising a base-plate, a series of abutting cutter-blades resting upon an inclined face of said base-plate, a plurality of clamping-plates dis-
 50 posed upon said cutters with their meeting-joint intermediate of the ends of a blade, and securing-bolts extending through said clamping-plates and threaded into the base-plate at the rear of said blades.

10. In a machine of the class described, a
 base, a platen mounted to travel thereon, posts disposed at opposite sides of the base and provided with forwardly-inclined faces
 60 extending diagonally to the plane of the platen, adjustable plates mounted upon each of said posts to extend inwardly therefrom, means for independently operating said plates in either direction, and tool-holders
 65 carried by each of said plates.

In testimony whereof I affix my signature in presence of two witnesses.

CORNELE G. ROSS.

Witnesses:

A. C. MARSHALL,
 FAYETTE L. VAUGHAN.