

(No Model.)

2 Sheets—Sheet 1.

T. A. JACKSON.
STONE SAWING MACHINE.

No. 410,419.

Patented Sept. 3, 1889.

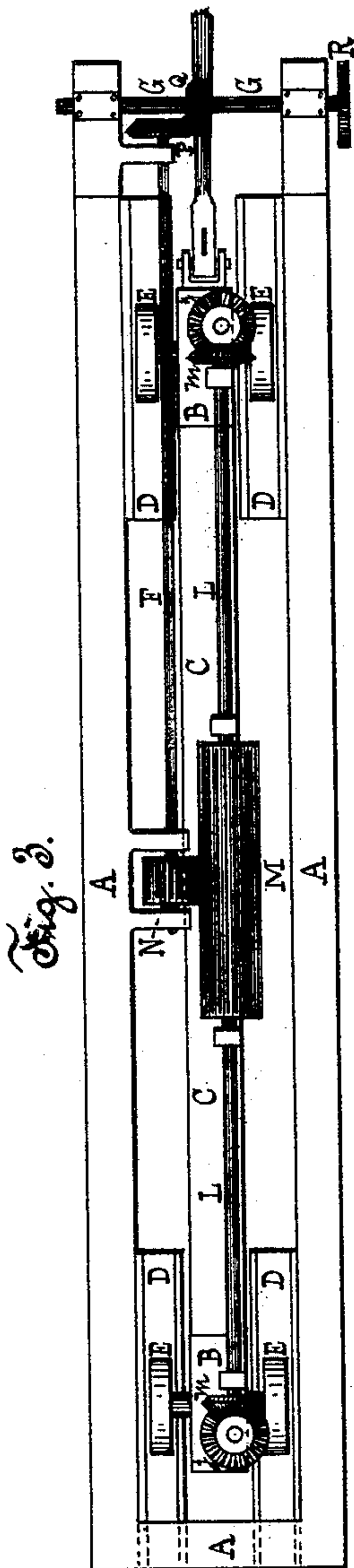


Fig. 3.

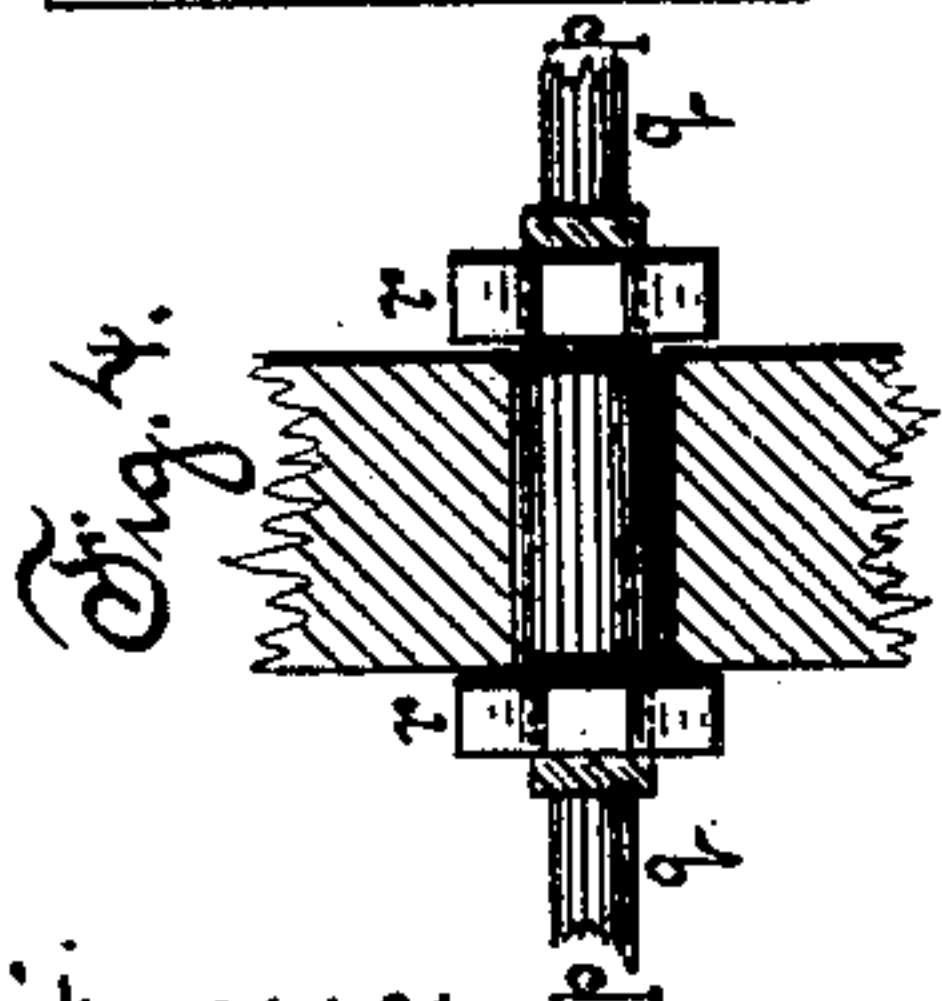


Fig. 4.

Witnesses:
Edward C. Stone.
J. B. Van Liew.

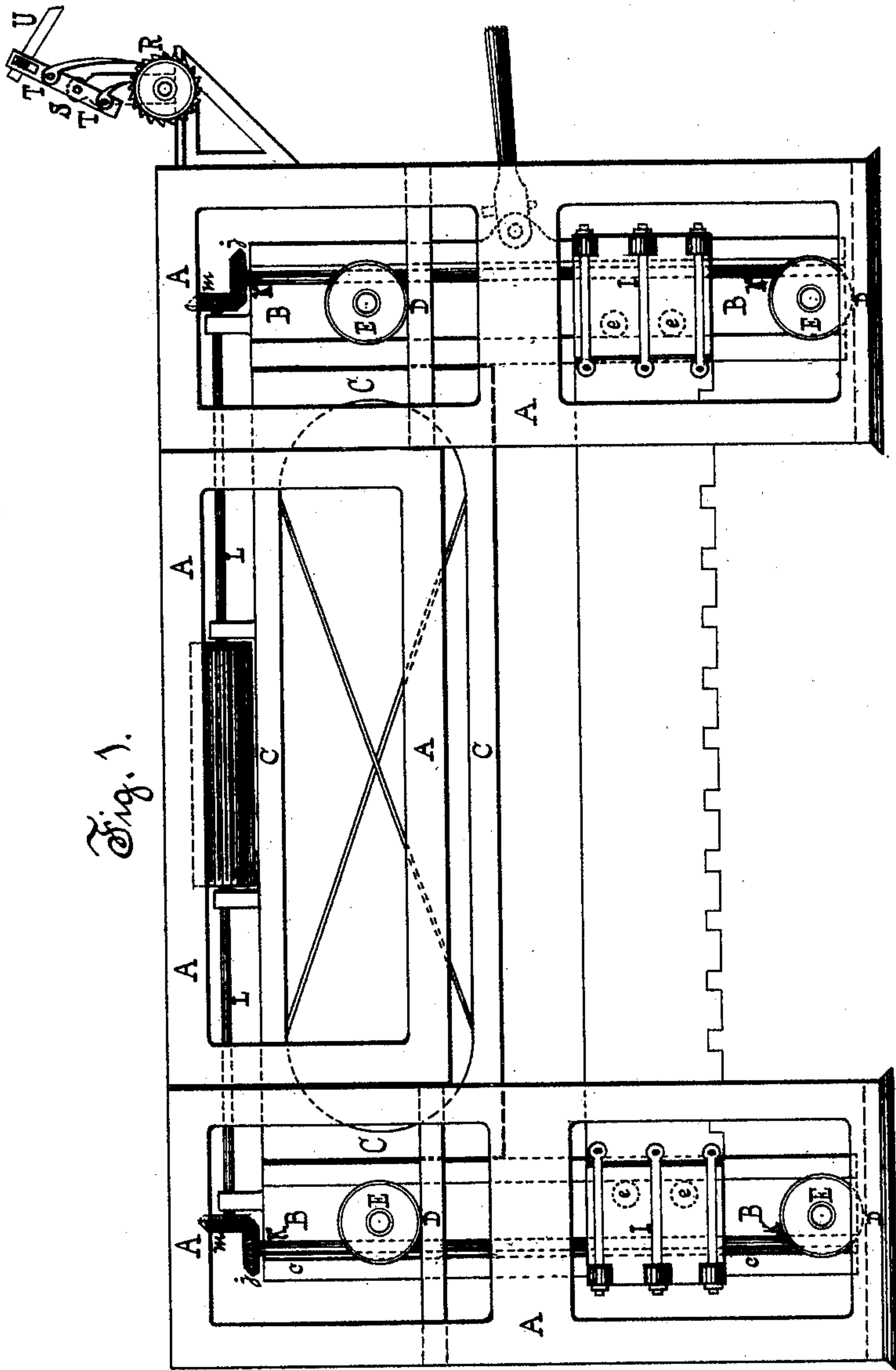
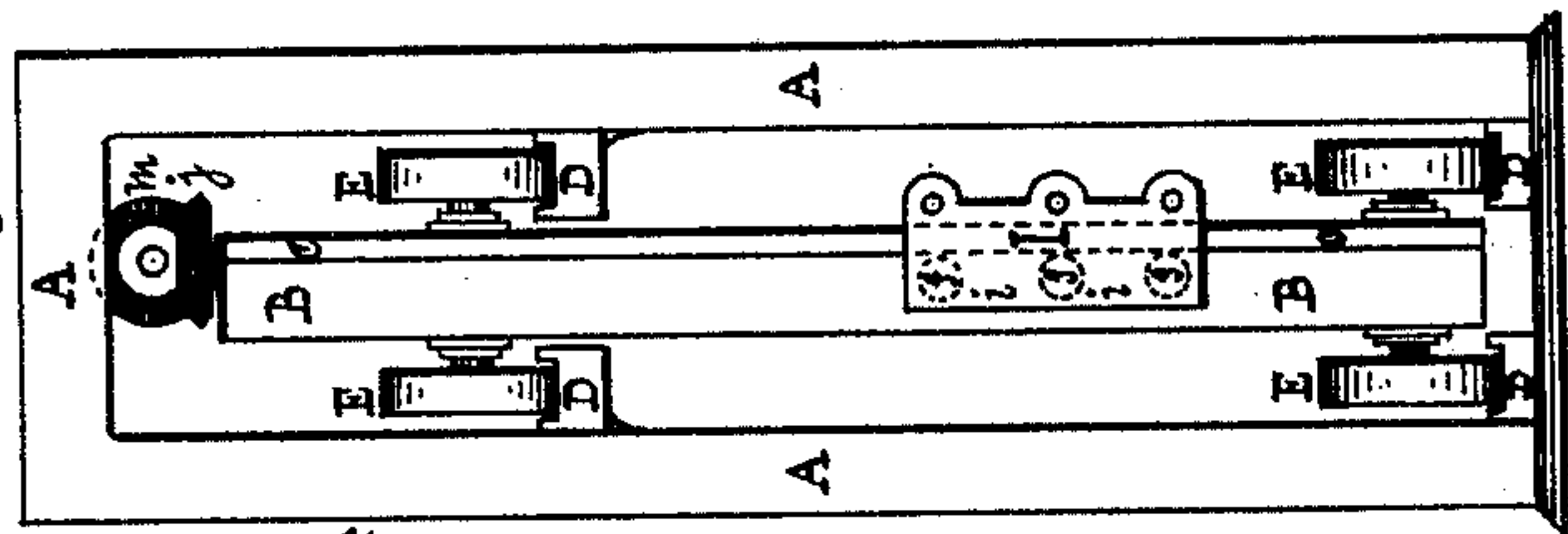


Fig. 1.

Fig. 2.



Inventor:
Thaddeus A. Jackson
by his Attorney,
Rollin M. Morgan

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Fig. 7.

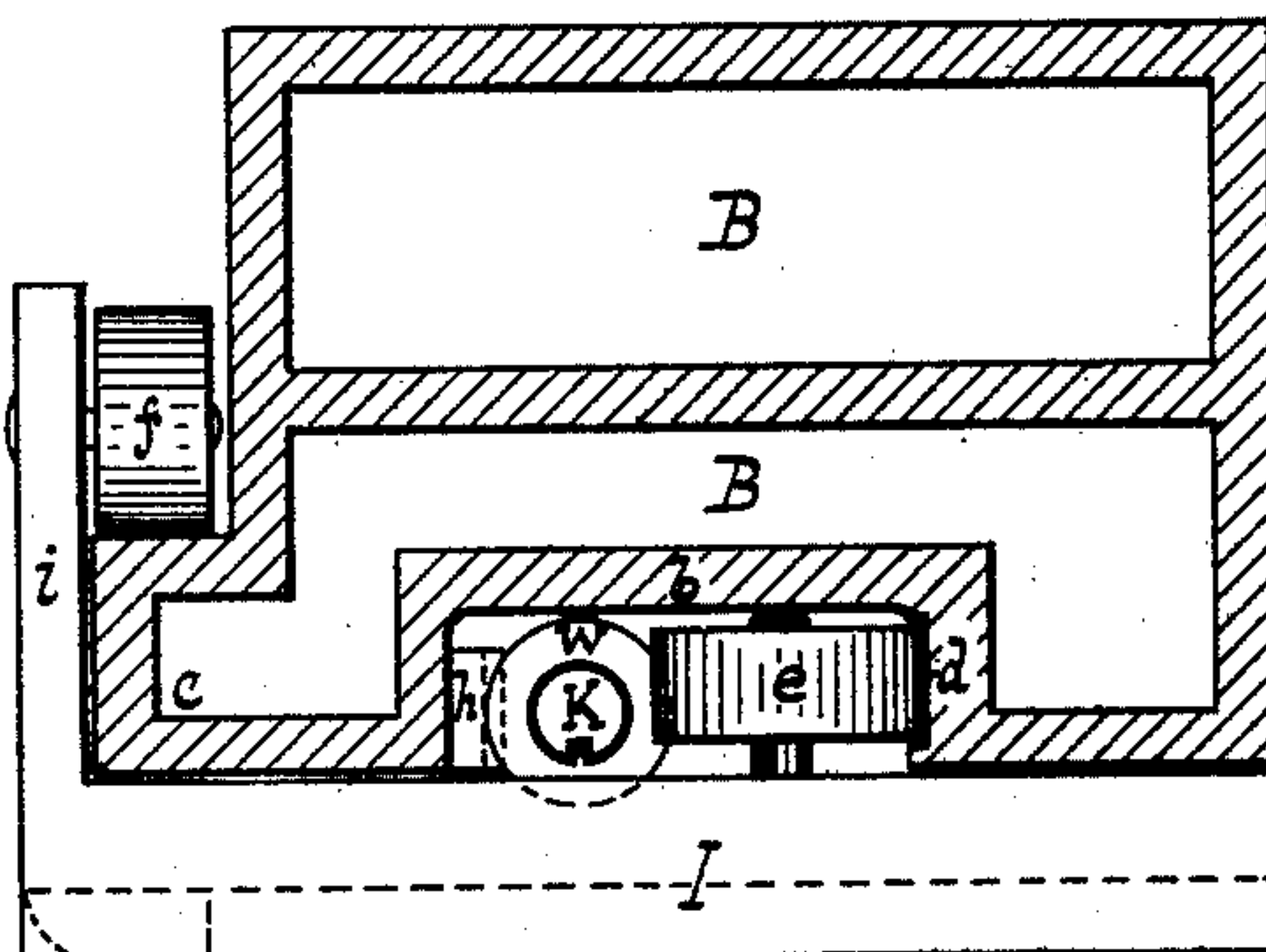


Fig. 8.

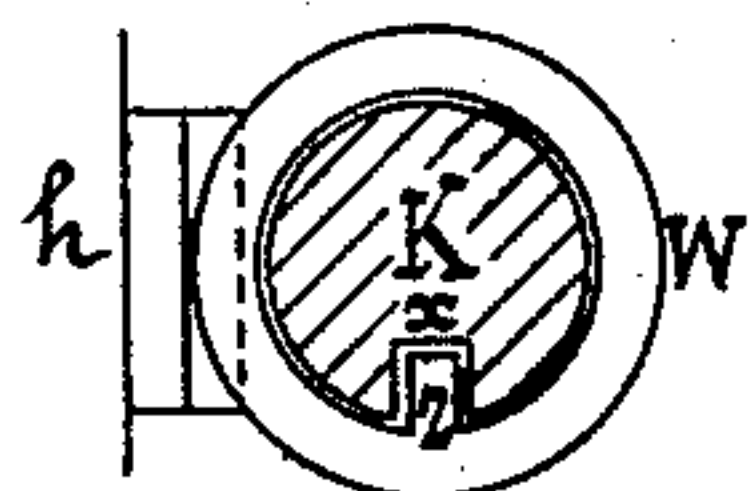


Fig. 6.

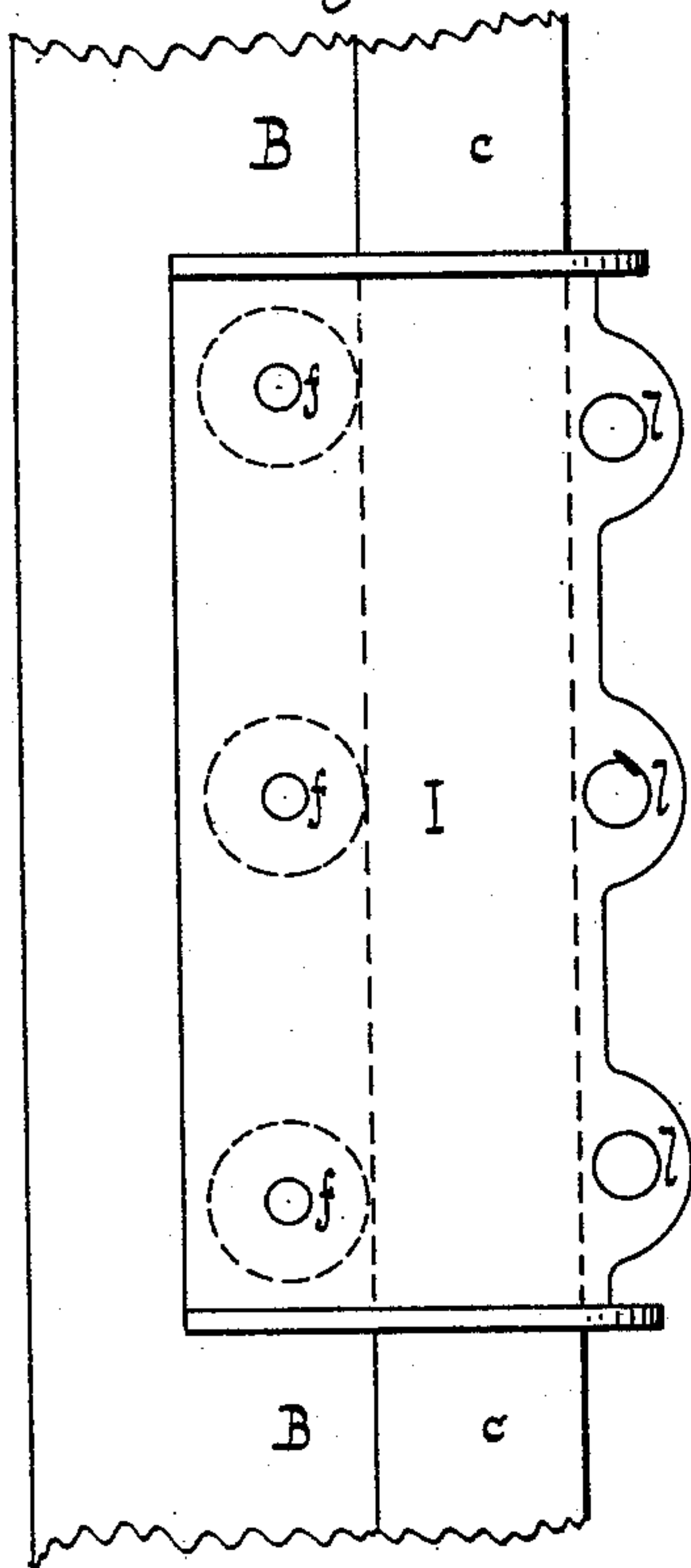
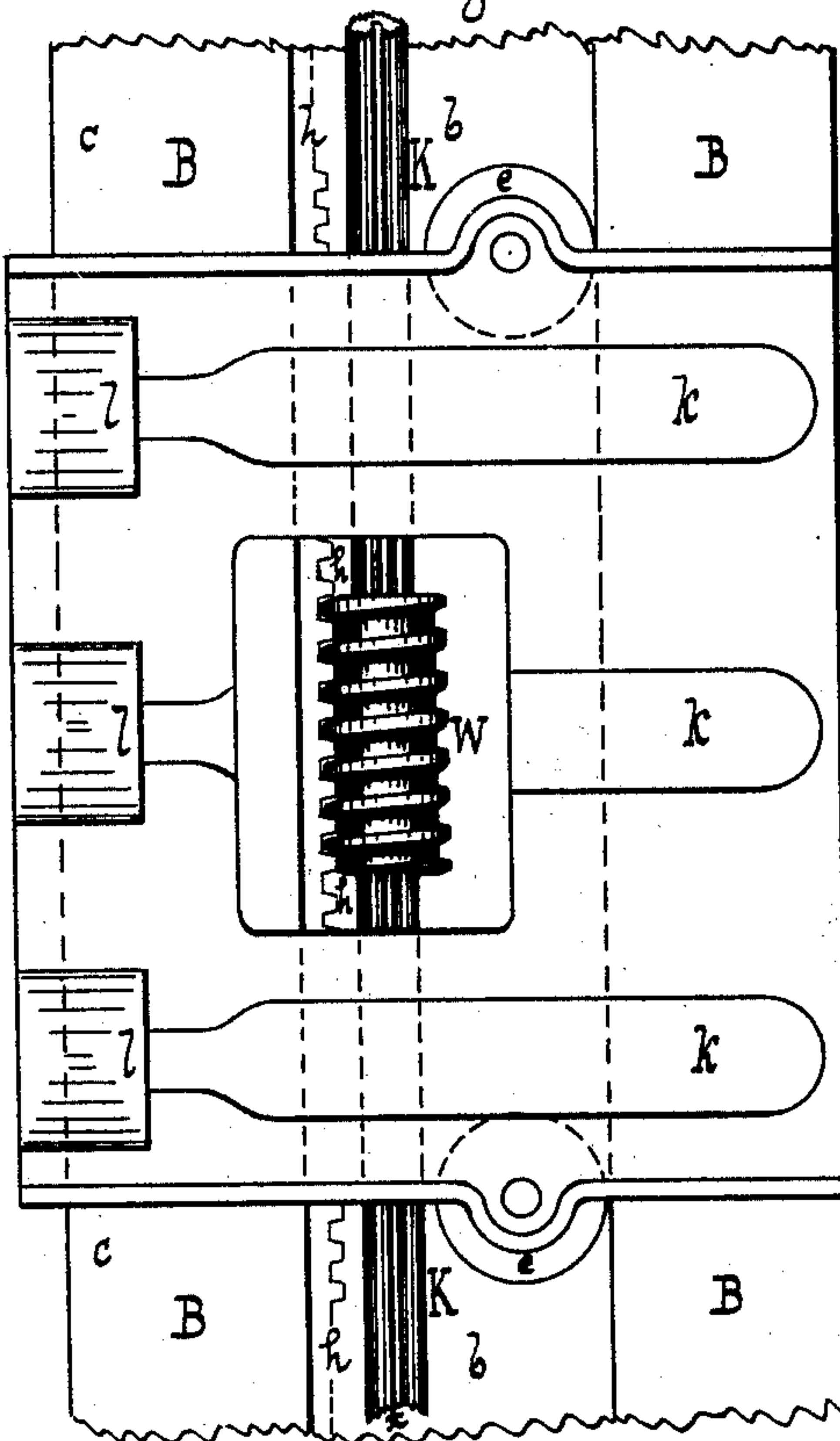


Fig. 5.



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UNITED STATES PATENT OFFICE.

THADDEUS A. JACKSON, OF NEW YORK, N. Y.

STONE-SAWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 410,419, dated September 3, 1889.

Application filed September 8, 1888. Serial No. 284,911. (No model.)

To all whom it may concern:

Be it known that I, THADDEUS A. JACKSON, a citizen of the United States, and a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Stone-Sawing Machines, of which the following is a full, exact, and sufficient specification to enable any one skilled in the art to understand, construct, and operate the same, reference being had to the accompanying drawings, wherein like letters of reference indicate corresponding parts in the several views.

My improvements relate to a machine for sawing stone in blocks carried by a truck in the usual way, by a reciprocating saw in a sash or carrier, such reciprocation being limited to horizontal lines and produced by ordinary appropriate mechanism connected with the driving-power; and the object of such improvements is to obtain a machine simple in construction, effective in operation, and easily adjustable, and to dispense with the usual lift and thrust movements and the mechanism necessary therefor.

Figure 1 shows a side elevation of a machine embodying my improvements. Fig. 2 shows an end elevation, and Fig. 3 a plan, of the top thereof. Fig. 4 shows an enlarged perpendicular section of the adjustable axle. Fig. 5 shows an enlarged side elevation of the saw-blade carrier, and Fig. 6 an end elevation thereof, and Fig. 7 is a horizontal section of the same. Fig. 8 is an enlarged view of a portion thereof.

The sawing machinery is sustained by and contained in an outside stationary frame of any preferred size and style, according to circumstance of location and the judgment of the mechanic. Such frame-work is indicated by the letter A, and in general will consist, substantially, of two pair of uprights connected at the top by cross and longitudinal braces and beams. The motive machinery is such as is commonly used to communicate a reciprocating motion and is connected to the sash in any ordinary way by ordinary means. The sash consists of two corresponding single uprights B B, connected at the top by the broad longitudinal brace-beam C, made in a single casting, and ribbed and perforated for strength and lightness combined

according to good judgment. The uprights themselves are preferably hollow and cast in the shape most clearly shown in horizontal section in Fig. 7, and in plan is essentially rectangular in form, with a recess or channel *b* running from top to bottom on the face or front side and with a projecting shoulder or corner *c* on the back side. The recess or channel *b* has a track *d*, cut, as shown, in the side toward the front and running also from top to bottom. The sash itself is sustained and reciprocates upon suitable tracks D D in the usual way by rollers or wheels E E. The axle of these wheels is of novel construction and adjustability, most clearly shown in Fig. 4, and consists simply of a short shaft *p*, with reduced axles *q q* for the wheels at each end, passing through a suitable hole in the sash and fastened therein on each side thereof by a nut *r* screwing up against the side. These threaded parts of the adjustable axle are of less diameter than the shaft itself and greater than that of the axles, as illustrated. It is obvious that by relaxing the nut on one side and screwing up the other on the opposite side the sash may be moved correspondingly and desirable adjustments secured simply and easily.

The blade-carrier is of simple and novel construction, and consists in horizontal section (shown in Fig. 7) of a right-angled plate I, embracing the corner made by the front and back side of the sash-uprights. It has a central opening in the face in elevation (shown in Fig. 5) to admit the traveling worm and its guide-boxes, hereinafter described. It has anti-friction rollers throughout its contact with the sash-uprights. In Fig. 7 two such rollers are shown, one *e* running in its track *d* in the perpendicular recess *b* and resisting the necessary tension of the saw-blade, and another *f* running against the projecting shoulder or corner *c* and resisting any departure from the uprights. In certain situations and circumstances an additional roller similar in construction and situation might be advantageously applied against the back side of the corner *c* and assist the action of the roller *e*. The face of the blade-carrier is provided with suitable recesses *k* and projecting lugs *l* to receive and retain the saw-buckles and resist tension.

Fastened to the back of the recess or channel *b* is a rack *h*, and carried in suitable boxes at the top and bottom of this perpendicular recess is the shaft *K*, provided with a slot or keyway *x* throughout its length, and around it travels the loose worm *W*, with a projecting key or feather *Z*, working in the keyway. This construction is shown clearly in the enlarged horizontal section of Fig. 8. The shafts *K K* have bevel-gears *j j* at the upper ends meshing at right angles with the bevel-gears *m m* on the opposite ends of the horizontal shaft *L*. On the middle of this shaft is a long gear *M* equal in length to the stroke of the machine and reciprocating with the sash. With this long gear *M* the pinion *N* meshes in sliding contact and is fixed at one end of the shaft *F*. At the opposite end of this shaft is fastened the bevel-gear *P*, meshing with the bevel-gear *Q* on the short shaft *G*. On one side of this short shaft and outside the frame is affixed the ratchet-wheel *R*, supported in a suitable box on a bracket. The rock-arm *S*, pivoted midway between the two pawls *T T*, is adjustably connected by a connecting-rod *U* with a short crank-arm on the main shaft. Its purpose and operation are obvious.

What I claim as novel, useful, and of my invention, is—

1. In a stone-sawing machine, a saw-sash constructed of three parts—namely, two rectangular hollow uprights or heads connected at the top by a single deep brace, and combined with a saw-blade carried on one side of the sash and movable thereupon, in the manner and for the purpose substantially as specified.

2. In a stone-sawing machine, a saw-sash, together with a saw-blade carrier consisting of a single right-angled plate embracing the back outer corner of the sash-upright, having suitable recesses and lugs for saw-buckles, and provided with anti-friction rollers or equivalent means to prevent friction in movement up and down against the uprights, in combination with a stone-saw, all constructed and operated substantially as specified.

3. A stone-sawing machine consisting of a saw-sash composed of two single rectangular uprights or heads opposite each other and connected between their tops by a single deep brace, in combination with a stone-saw

buckled in saw-blade carriers each consisting of a single right-angled plate embracing the back outer corner of the sash upright or head, and having anti-friction rollers between such contact, together with means for raising and lowering such blade-carriers and saw-blade, all supported in suitable outside frame-work and constructed and operated substantially as specified.

4. In a stone-sawing machine, a saw-sash constructed with hollow uprights or heads, each provided with projecting shoulder or corner and abutting recess, in combination with a saw-blade on one side of said sash, substantially as specified.

5. In a stone-sawing machine, a saw-sash adjustable horizontally and transversely to its length by means of shouldered axles supporting the sash, and provided with reciprocally-adjustable nuts on each side of such sash, as and for the purpose substantially as specified.

6. In a stone-sawing machine, for raising and lowering the blade on the sash, and in combination with each upright or head of such sash, a perpendicular revolving feed-shaft provided with suitable keyway and loose worm, with a key or feather working in such keyway, such worm meshing with a perpendicular rack on the sash-upright, as and for the purpose substantially as specified.

7. In a stone-sawing machine, in combination with and for operating the upright feed-shafts by bevel-gears, a horizontal shaft provided with a gear as broad as the length of the stroke of the saw, in sliding contact and meshing with a pinion on another horizontal shaft parallel with the first and operated through bevel-gears and a ratchet-wheel by a rock-arm and two pawls connected to the crank-shaft, all combined and co-operating in the manner and for the purpose substantially as specified.

8. In a stone-sawing machine, an upright saw-sash, combined with the saw-blade carried on one side thereof and movable perpendicularly thereupon, substantially as specified.

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Witnesses:

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