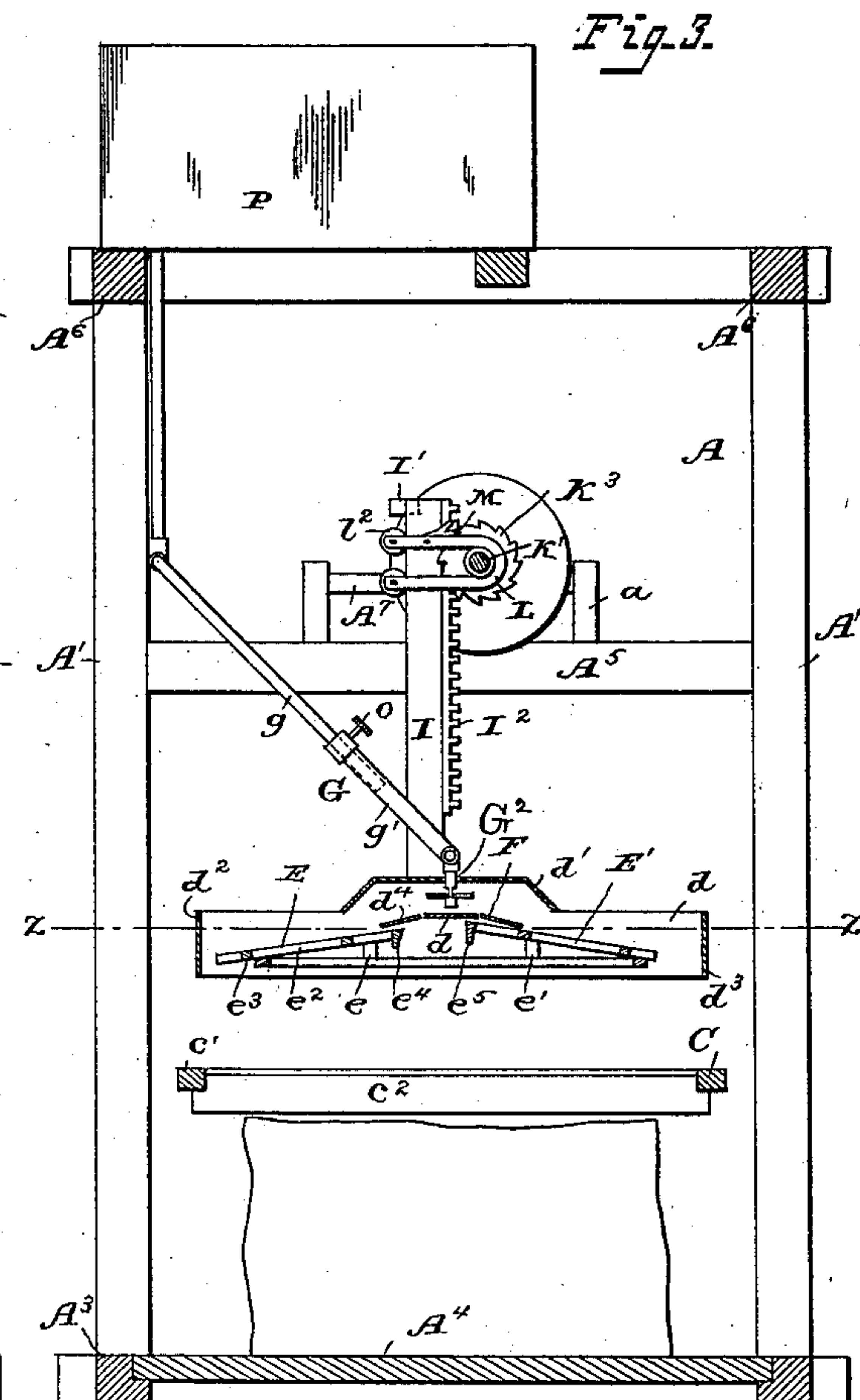
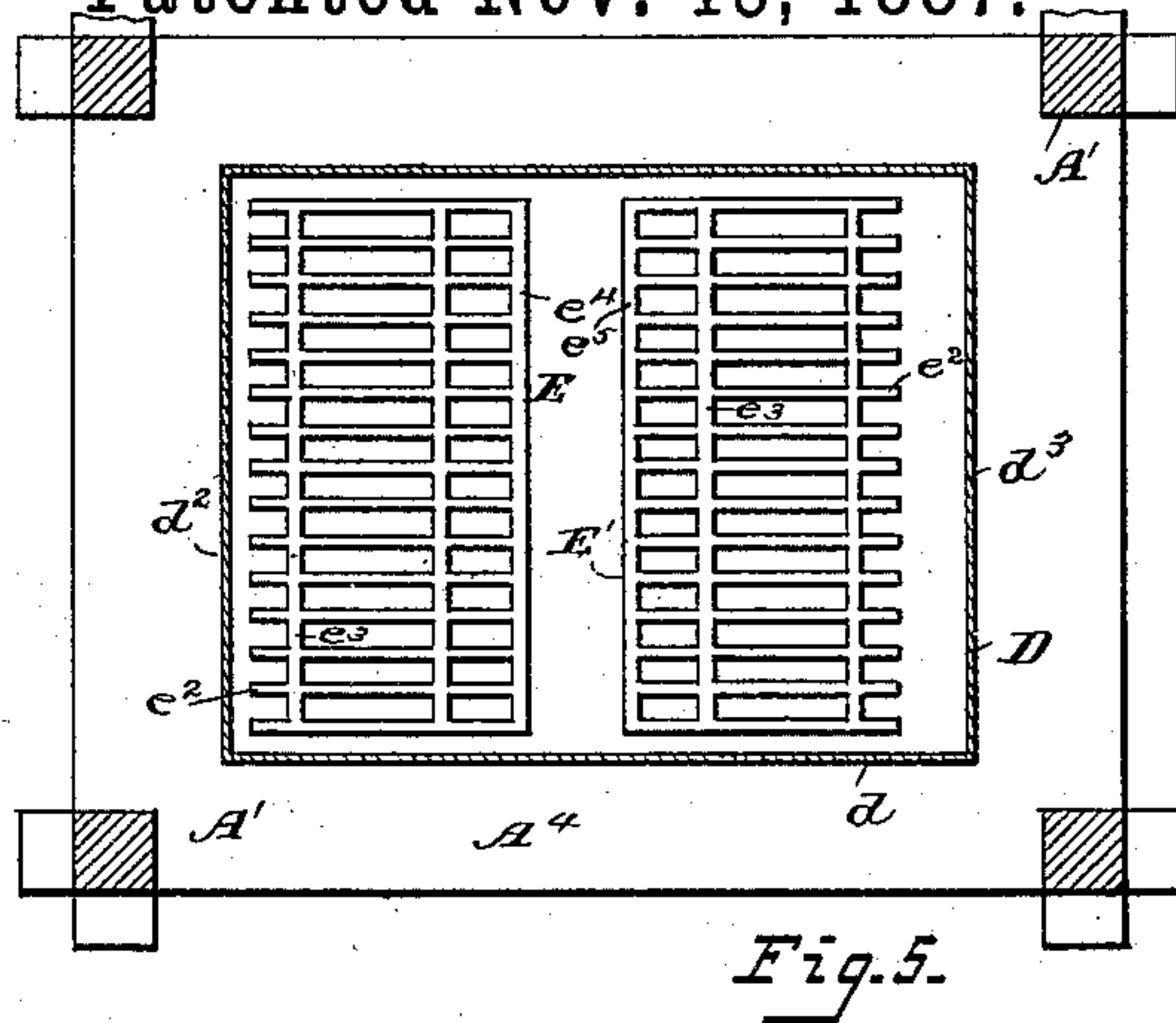


2 Sheets—Sheet 1.

No. 373,300.

Patented Nov. 15, 1887.



Inventor:-
A. E. North, and
W. K. Sheldon,
by Foster & Freeman
attys.

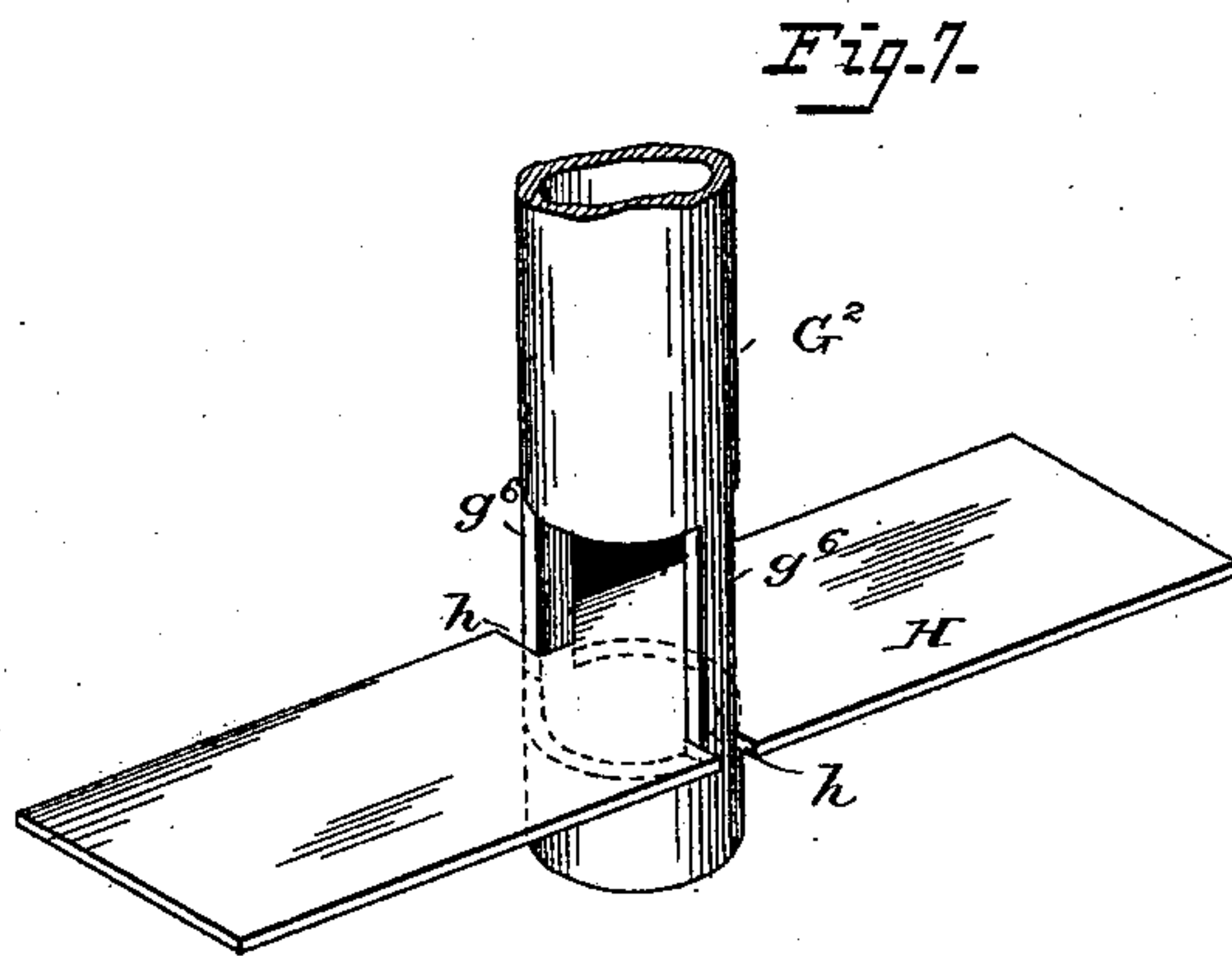
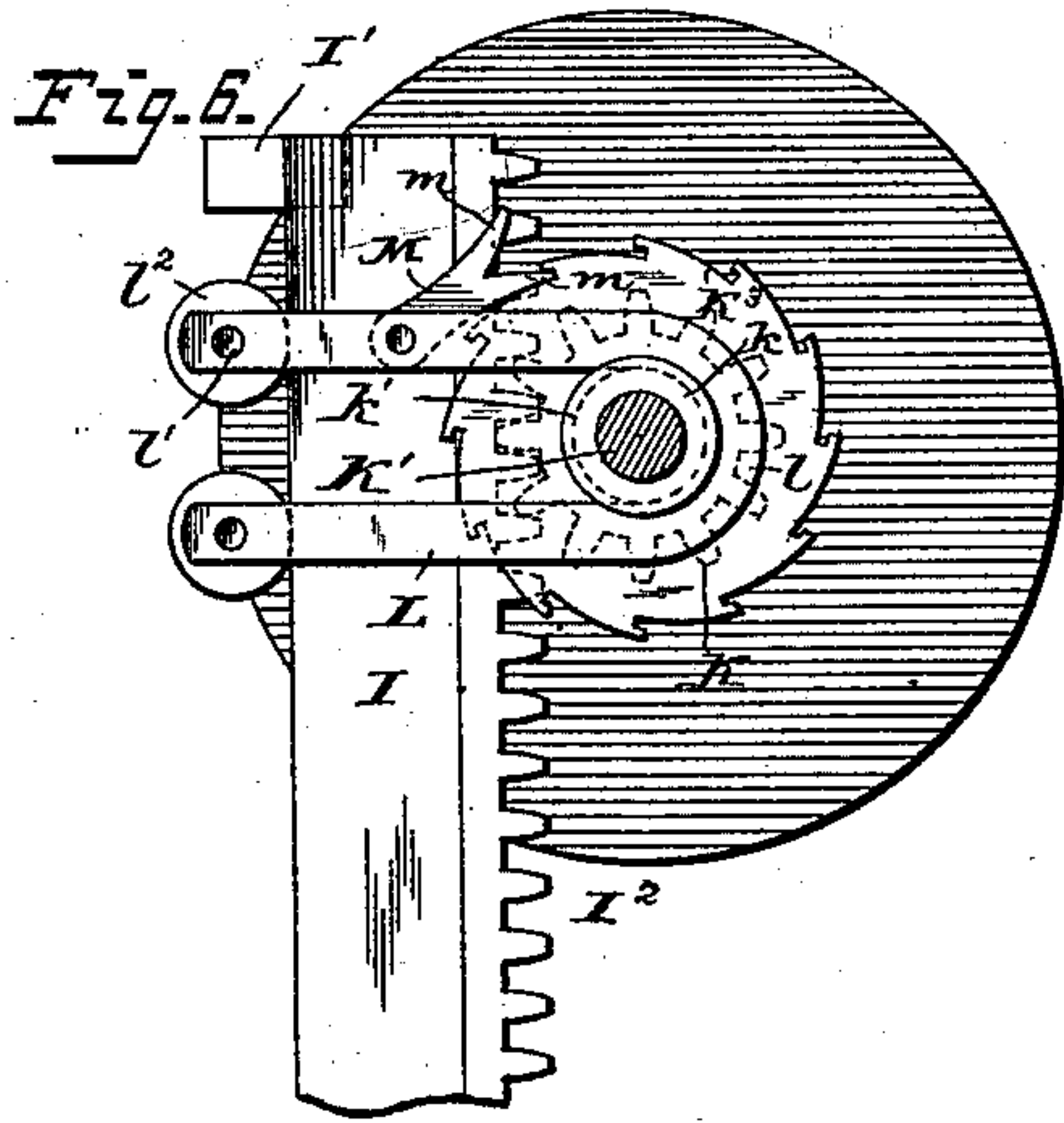
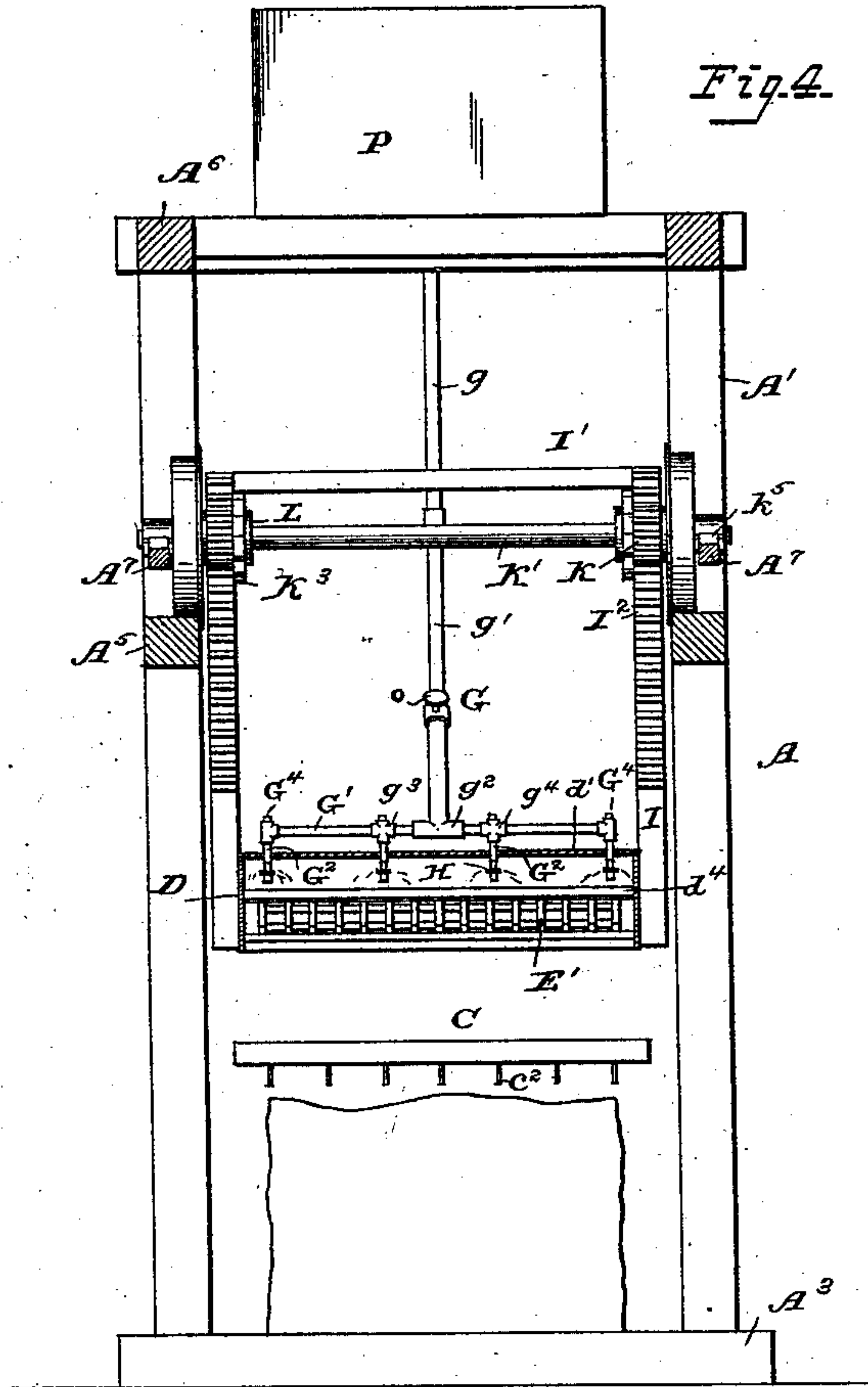
(No Model.)

2 Sheets—Sheet 2.

A. E. NORTH & W. K. SHELDON.
STONE SAWING MACHINE.

No. 373,300.

Patented Nov. 15, 1887.



Attest:
Court, Cooper,
A. C. Farnham.

Inventor:
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UNITED STATES PATENT OFFICE.

AARON E. NORTH AND WILLIAM K. SHELDON, OF WEST RUTLAND, VERMONT.

STONE-SAWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 373,300, dated November 15, 1887.

Application filed April 14, 1886. Renewed October 7, 1887. Serial No. 251,770. (No model.)

To all whom it may concern:

Be it known that we, AARON E. NORTH and WILLIAM K. SHELDON, citizens of the United States, and residents of West Rutland, in the county of Rutland and State of Vermont, have invented certain new and useful Improvements in Stone-Sawing Machines, of which the following is a specification.

Our invention relates to improvements in stone-sawing machines, and has for its object the provision in a machine of the class named of means for insuring an even distribution of the feed-water and sand over a large surface, for delivering the said feed-water and sand to any desired point of said surface, and for adjusting the feed mechanism in different desired directions.

To the accomplishment of the above ends the invention consists in the construction, arrangement, and combination of the several parts for service, substantially as hereinafter described, and specifically pointed out in the claims.

In the drawings, Figure 1 represents a plan view of a stone-sawing machine embodying our improvements. Fig. 2 is a side elevation thereof. Fig. 3 is a longitudinal sectional view taken on the line xx of Fig. 1. Fig. 4 is a transverse sectional view taken on the line yy of Fig. 1. Fig. 5 is a horizontal sectional view taken on the line zz of Fig. 2. Fig. 6 is a detail view of the distributing-box-raising mechanism detached from the machine. Fig. 7 represents a detached detail view of one of the water and sand distributing nozzles.

Referring to the drawings, in which similar letters of reference denote similar parts, A designates a stone-sawing machine having corner-posts A' , connected at their bottoms by longitudinal and transverse timbers $A^2 A^3$, provided with a platform, A^4 , to receive the stone to be operated upon, and at their tops by similar longitudinal and transverse timbers, $A^5 A^6$, the former, A^5 , of which is provided with short upwardly-projecting studs a , that form supports for rails A^7 , the purpose of which will be hereinafter explained.

C designates the saw-holding frame, having side rails, c , end rails, c' , and adjustable saws c^2 , operated in the usual manner.

D designates the distributing-box, consisting inside d , having upwardly-projecting por-

tions d' and ends $d^2 d^3$, the latter of which connect the inclined ends of the projections d' .

E E' designate water-cards, placed within and supported in an inclined position upon blocks $e e'$, secured to the sides of the box D. These cards E E' consist of longitudinal side rails e^2 , connected together by transverse rails e^3 , that support a series of thin laths. $e^4 e^5$ designate studs that project downwardly from the inner ends of the side rails e^2 of the water-cards and operate, in connection with the blocks e' , to limit the outward movement of said cards.

F designates a water-table, that is secured to and extends from side to side of the box D, within and near the top thereof. (See Fig. 3.) This table consists of a central horizontal portion, d , and downwardly-inclined side portions, d' , placed a short distance therefrom.

G designates the feed-pipe, that extends from a suitable reservoir, P, above the machine to a point above and intermediate of the ends of the table F, to conduct water and sand from said reservoir to the stone under treatment.

We preferably make the pipe G in two sections, gg' , one of which, the upper, g , is smaller in diameter than the other, g' , and is placed and moves within the upper end thereof, whereby said pipe may be adjusted in length and held at any desired point by an adjusting-screw, o . The lower end of the pipe G is connected by a T-coupling, g^2 , with laterally-projecting pipes G' , provided at predetermined spaced distances with similar T-couplings, $g^3 g^4$, and downwardly-projecting feed-nozzles G^2 , that consist in short sections of pipe provided near their lower ends and upon their opposite sides with cut-away portions g^5 , to receive spreaders H, formed of short flat sections of metal plate, having notches h formed in their side edges at points intermediate of their ends to engage the bars g^6 , formed by the uncut portions of the pipes, for the purpose of holding the spreaders in position, and at right angles to the longitudinal axis of the pipes or nozzles G^2 , for the purpose of spreading the feed-water and sand over a large surface and in different desired directions, for which latter purpose the nozzles G^2 may be wholly or partially rotated.

G^4 designates plugs that close openings

formed in the T-couplings $g^3 g^4$, opposite the nozzles G^2 , for the purpose of removing obstructions from said nozzles.

To accommodate stone of different thicknesses, we provide that the distributing-box D be adjustable in vertical and longitudinal directions, which results we accomplish by and in the following-described means and manner, viz:

10 I designate timbers, that are secured at their lower ends to the opposite sides of the box D, and project thence upwardly, and are connected together at their tops above the machine by a rail, I'.

15 I² designates rack-bars secured to the forward surfaces of the timbers I, the teeth of which engage the teeth of pinions K, that are mounted upon a shaft, K', near the ends thereof, journaled in movable boxes K², placed outside
20 of said pinions and supported in manner hereinafter described. The pinions K are each provided upon one side with ratchet-wheels K³, preferably of greater diameter than said pinions and rigidly secured thereto, and upon
25 their opposite sides with bosses k , having circumferential grooves k' , to receive the curved ends of U-shaped straps L, that extend at each side of each of the rack-timbers I, and are connected together upon the back of said
30 timbers by bolts l' , provided with friction-rollers l , as shown.

M designates pawls pivoted upon one side, preferably the outer, of each of the timbers I, to the straps L, and provided with oppositely-
35 curved free ends m , that engage the ratchet-wheels K³, and, as before stated, hold the bars or timbers I and box D at different desired elevations.

The journal-boxes K² are each provided with
40 downwardly-projecting side flanges, k^4 , that extend at each side of the rails A', hereinbefore described, and said boxes may or may not be provided at each end with rollers k^5 , that move upon the upper surfaces of the rails A'. The
45 boxes may be operated back and forth upon said rails in any desired manner.

The operation of our invention will be understood without further description, it being understood that the distributing-box D may
50 be raised or lowered or moved back and forth to accommodate different-sized blocks of stone, and that the pipe G will, by reason of its adjustable features, accommodate itself to such movements of the box; also, that the nozzles
55 G^2 may be turned in their couplings.

If desired, a circular spreader may be used in lieu of the flat spreaders shown at H, or such spreader may have other desired configuration of outline.

60 If desired, the water-cards E E' and table F may be adjustable up and down in the box D.

Without limiting ourselves to the exact construction of parts shown herein, we claim—

65 1. In a stone-sawing machine, a feed-reservoir, a feed-distributing box, a feed-distributing pipe connecting said reservoir and box, and tubular feed-nozzles having cut-away sides,

and spreaders arranged therein, substantially as described.

2. The combination of a feed-reservoir, a
70 feed-distributing pipe connected thereto and provided with a tubular nozzle having cut-away sides to receive a spreader with an adjustable feed-distributing box, and mechanism, substantially as described, to adjust said box,
75 as and for the purpose set forth.

3. The combination of a feed-reservoir, an adjustable feed-distributing pipe connected thereto, one or more tubular nozzles connected to said pipe and provided with cut-away sides,
80 and spreading-blades extending through said nozzles, with an adjustable feed-distributing box, and mechanism, substantially as described, to adjust said box, as and for the purpose set forth.
85

4. A feed-nozzle consisting of a tube having cut-away portions in its opposite sides, and a spreading-blade extending through said cut-away portions at angles to said tube, substantially as described.
90

5. A feed-spreader consisting of a flat blade, in combination with a feed-nozzle having cut-away portions in its opposite side to receive said spreader, and the feed-delivery pipe, substantially as described.
95

6. In combination, a feed-delivering pipe, a nozzle therefor having cut-away portions in its opposite sides, and a removable spreading-blade adapted to be placed in the cut-away
100 portions of the nozzle at angles to the longitudinal axis of said nozzle, substantially as described.

7. In a stone-sawing machine, a horizontally-extending pipe, a series of nozzles connected thereto and provided with cut-away
105 sides, and spreading-blades arranged in said cut-away sides transversely to the bores of said nozzles, in combination with an adjustable feed-delivery pipe, a feed-reservoir, an adjustable feed-distributing box, and mechanism, substantially as described, to adjust said
110 box, as and for the purpose set forth.

8. In a stone-sawing machine, a feed-delivery pipe, in combination with laterally-projecting pipes provided with nozzles having
115 cut-away portions and feed-spreaders, substantially as described.

9. In a stone-sawing machine, an adjustable distributing-box, in combination with a feed-delivery pipe having laterally-projecting pipe-
120 sections provided with nozzles having cut-away portions, as g^5 , and feed-spreaders, as H, arranged at an angle to said nozzle, substantially as described.

10. An adjustable distributing-box provided with upwardly-projecting timbers, and means, substantially as described, to raise and lower said box, in combination with a feed-delivery-pipe provided with nozzles having
125 feed-spreaders arranged at an angle to said nozzles, as and for the purpose specified.
130

11. An adjustable distributing-box having upwardly-projecting rack-bars or timbers, and means, substantially as described, to raise

or lower said box, in combination with an adjustable feed-delivery pipe having laterally-projecting pipe-sections, and nozzles provided with cut-away portions to accommodate feed-spreaders, as and for the purpose set forth.

12. In a stone-sawing machine, and in combination with an upwardly-projecting rack-bar or timber secured to the distributing-box, a combined pinion and ratchet-wheel having projecting grooved bosses, and means, substantially as described, for holding said pinion in connection with the rack-bars, to raise or lower the distributing-box and hold it at different elevations, as and for the purpose set forth.

13. In a stone-sawing machine, a frame, adjustable journal-boxes mounted thereon, a rotatable shaft journaled in said boxes and provided with combined gear-pinions and ratchet-wheels, in combination with rack-bars secured to the feed-distributing box, and means, substantially as described, for holding said pinion in engagement with said rack-bars to raise and lower said bars and their attached distributing-box, as and for the purpose set forth.

14. In a stone-sawing machine, U-shaped straps, as L, having friction-rollers, as l, and pawls, as M, in combination with the distributing-box-raising rack-bars I, pinions K,

having ratchet-wheels K³, and means, substantially as described, for rotating said pinions and ratchet-wheels, and for moving their supporting-boxes in forward and backward directions, as and for the purpose specified.

15. In a stone-sawing machine, a frame provided with a stone-receiving platform, a feed-distributing box provided with water-cards and table, and means, substantially as described, for moving said box in vertical and longitudinal directions, in combination with an adjustable feed-pipe having nozzles provided with cut-away portions and spreaders, as and for the purpose specified.

In testimony whereof we, AARON E. NORTH and WILLIAM K. SHELDON, the foregoing applicants, have signed our names to this specification in the presence of subscribing witnesses.

AARON E. NORTH.

WILLIAM K. SHELDON.

Witnesses to the signature of Aaron E. North:

JOSEPH H. EAYRS,

FRANK M. HEWETT.

Witnesses to the signature of William K. Sheldon:

WM. H. H. KNIGHT,

A. E. T. HANSMANN.