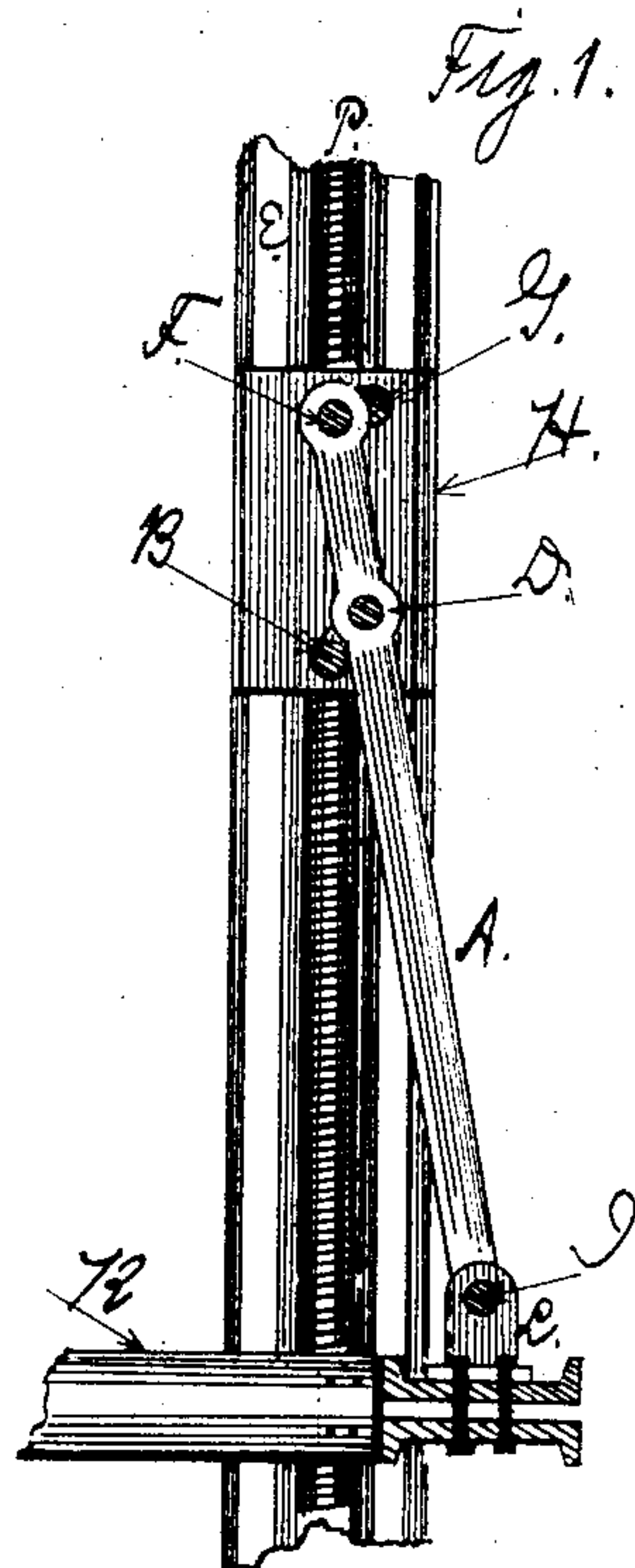
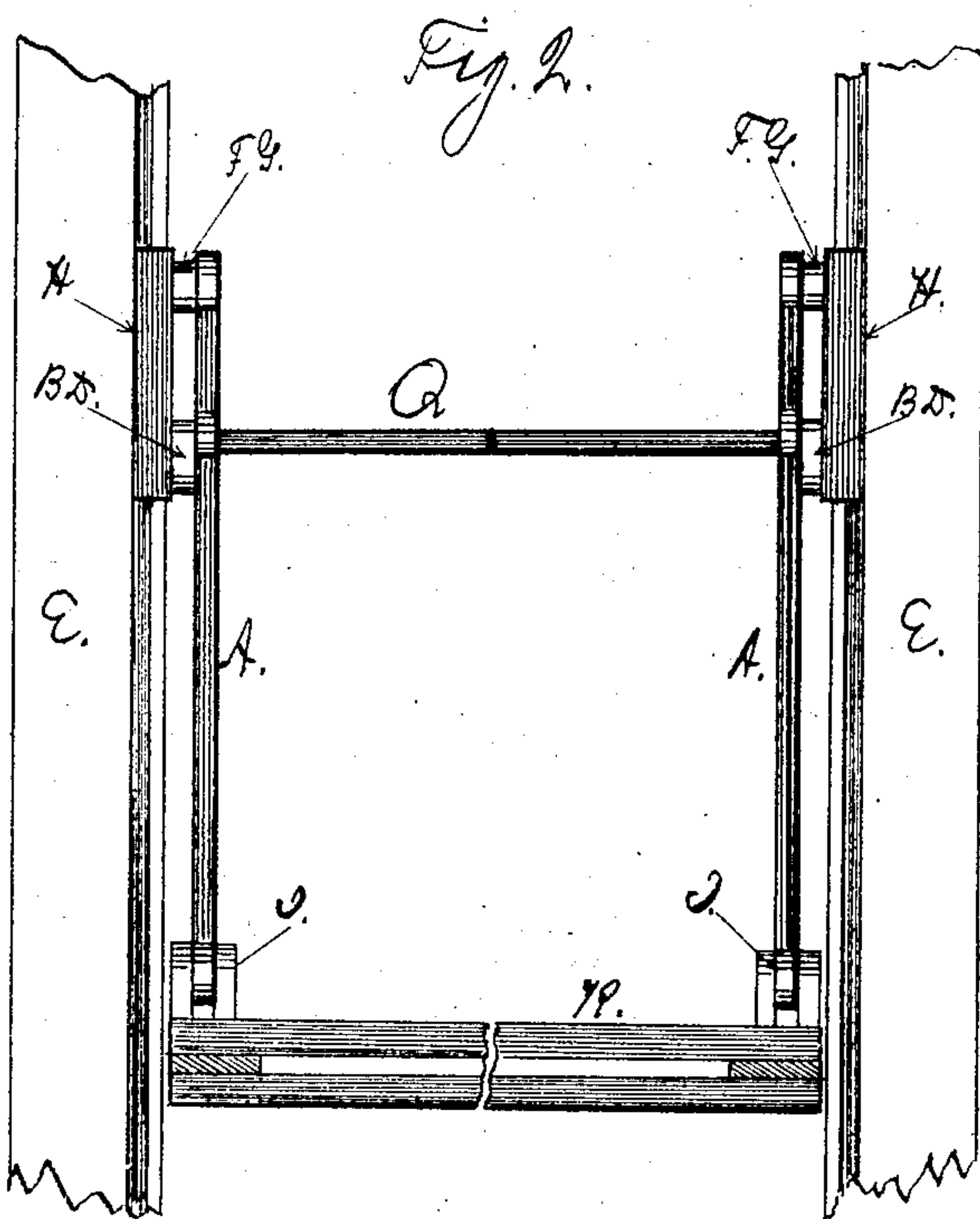
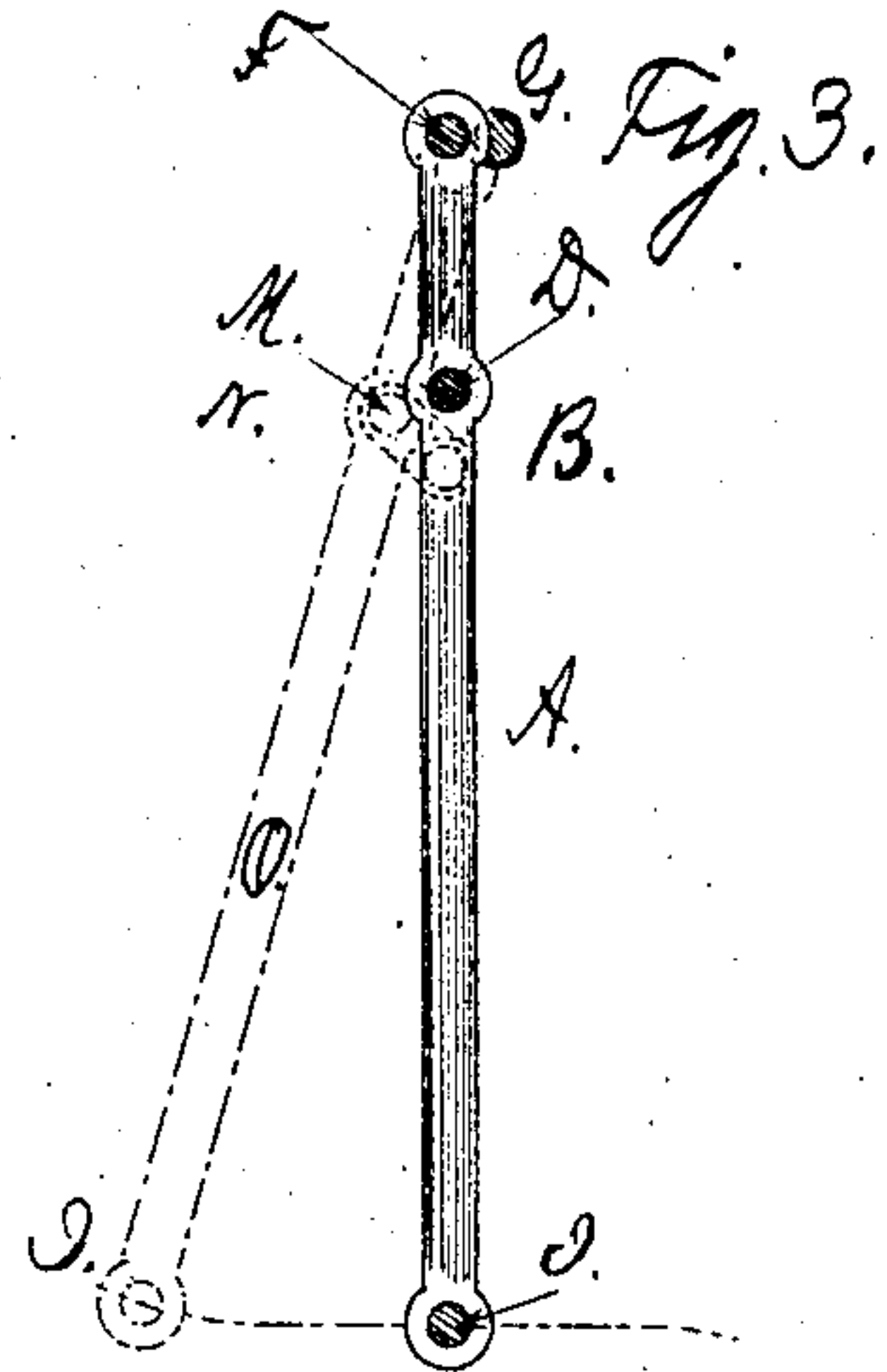


No. 786,339.

PATENTED APR. 4, 1905.

O. W. ALSTON.  
STONE SAWING MACHINE.  
APPLICATION FILED MAR. 11, 1902.



WITNESSES:  
H. C. Kitchen  
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# UNITED STATES PATENT OFFICE.

OSCAR W. ALSTON, OF LANESBORO, PENNSYLVANIA.

## STONE-SAWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 786,339, dated April 4, 1905.

Application filed March 11, 1902. Serial No. 97,760.

*To all whom it may concern:*

Be it known that I, OSCAR W. ALSTON, a citizen of the United States, residing at Lanesboro, Susquehanna county, State of Pennsylvania, have invented a new and useful Improvement in Stone-Sawing Machines, of which the following is a specification.

My invention relates to improvements in stone-sawing machines.

It has, primarily, for its object to impart to the saw-carrying means or contrivance practically a right-lined or rectilinear movement, the desirability of which is obvious, and to effect or secure that end in a simple and effective way.

Said invention consists of certain structural features substantially as hereinafter more fully disclosed, and specifically pointed out by the claims.

In the accompanying drawings, illustrating the preferred embodiment of my invention, Figure 1 is a broken sectional elevation of the latter, with the saw-carrier and its suspending means in the position they assume at the limit of their movement in one direction. Fig. 2 is a broken front view of the same. Fig. 3 is a detailed sectional elevation showing in full lines the medial position of the saw-carrier-suspending means and in dotted lines the limit of the movement or position of the same when moved in the opposite direction to that disclosed by Fig. 1.

In the carrying out of my invention I provide a suitable upright frame E, upon opposite suitably-provided surfaces of whose standards are guided or arranged slides or blocks H, vertically adjustable and carried by vertical screws P, adapted to be suitably held and actuated in said standards, as well understood by those familiar with this art, but which screws and their actuating means need not be further elaborated herein, as the same constitute no part of my invention.

The saw carrier or frame R, having suitably secured thereto and at the required points thereon upstanding ears or lugs C, is supported in position and suspended from the slides or blocks H by means of hangers A, suitably pivoted, as at I, at their lower ends

to said ears or lugs and having connection at their extreme upper ends to two cranked links F G and at a short distance downward therefrom to two other like cranked links B D, said cranked links bearing in said blocks or slides. One pair of said cranked links has its arms arranged to stand normally in a plane or position at right angles to the plane or position of the arms of the other pair of said cranked links, whereby it will be noted that the action or effect of which upon said hangers and their adjunctive parts will be such as to cause the same, as indicated in Fig. 3, to describe or move at their lower ends practically in right lines, consequently imparting a corresponding movement to the saw carrier or frame, the desirability and purpose of which are obvious. It is obvious that as the lower ends of the hangers arrive at the end of their stroke in one direction (see Fig. 1) the cranks F G, forced sidewise or laterally, gradually lower, so that the point I has traveled in a right line to the end of the stroke, which, however, being limited at this juncture by the restraining action of the cranks, rises until the center of motion has again been reached, when after passing the same said point commences to lower, so as to retain the saw-carrier in a right line until it reaches a point where the restraining action of said cranks causes a rise or lift, as disclosed by the dotted lines of Fig. 3, which completes the stroke. Reciprocation now being initiated causes the saw-carrier to retrace its former line of travel. By means of this arrangement of parts it will be observed that a short or slight lift of the saw carrier or frame is permitted at one or more points during the oscillation or swinging movement of the hangers to allow cutting material to get under the saw-blades and to do this without the use of horizontal slides in order to avoid all possible friction.

Said invention may be readily applied to any ordinary sawing-machine and combines the merits of the straight-cut and the anti-friction qualities of that class of machines employing the swinging or pendulum-like actuated hangers now in use.

Latitude is allowed as to details herein, as



they may be changed as circumstances suggest without departing from the spirit of my invention and the latter still be protected.

I claim—

- 5 1. The combination, with standards, of slides adjustable thereon; arms pivoted to the slides; hangers articulated to the arms; links pivoted to the hangers and also to the slides; and a saw-frame pivoted to said hangers.
- 10 2. The combination, with standards, of slides adjustable thereon and having sides facing each other; arms pivoted to the upper portions of said slides; hangers articulated to the arms; links pivoted to the hangers and to the lower  
15 parts of the slides; and a saw-frame carried by the levers.
3. The combination, with framework having uprights, of a saw-frame mounted for swinging movement between said uprights; slides  
20 fitted for adjustment upon guideways of the uprights; hangers articulated to the saw-frame; links pivoted to the slides, and also pivoted to the hangers intermediate their lengths; and of such proportions that they will cause  
25 the saw-frame to be lifted on each stroke; and arms pivoted to the slides above the links and articulated to the ends of the hangers.
4. In a machine of the class described, the  
30 combination, with a machine-frame having vertical uprights, of slides fitted upon guideways of said uprights; means for adjusting said slides; hangers articulated to the saw-

frame; links pivoted to the lower portions of the slides on their inner sides and also pivoted to the hangers intermediate the lengths of  
35 said hangers; arms pivoted to the inner portions of the slides and also articulated to the upper ends of the hangers; and means for reciprocating said saw-frame.

5. In a machine of the class specified, the  
40 combination, with a saw-frame, of hangers pivoted to said frame; upwardly-inclined links of a length to cause the saw-frame to be lifted on each stroke, connected to the hangers at points intermediate their lengths; slides to the  
45 lower ends of which said links are pivoted; and downwardly-inclined arms pivoted to the upper ends of said slides and also to the upper ends of said hangers.

6. The combination of the standards, verti-  
50 cally-adjustable slides arranged upon said standards, a saw-carrying frame, pairs of links bearing in said slides and arranged to stand normally, one pair at right angles to the other and having pivotal connection with said hang-  
55 ers at, and near, their upper ends, said hangers having like connection at their lower ends with said saw-carrying frame.

Signed by me this 4th day of March, 1902.

OSCAR W. ALSTON.

Witnesses:

C. J. JOHNSON,

HENRY A. BENNETT.