

(No Model.)

2 Sheets—Sheet 1.

H. F. MORGAN.  
SLATE DRESSING AND SIZING MACHINE.

No. 540,998.

Patented June 11, 1895.

Fig. 1

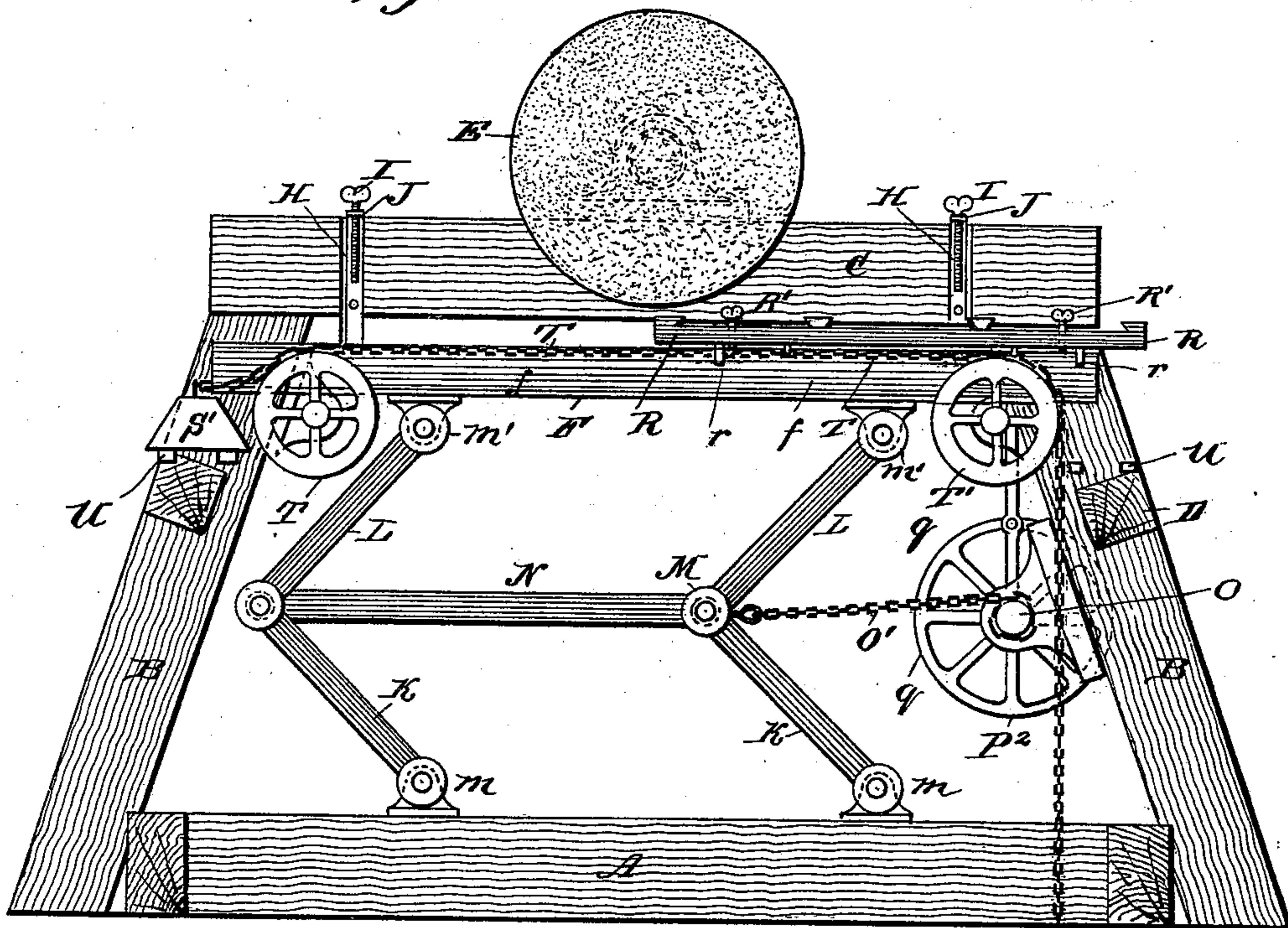
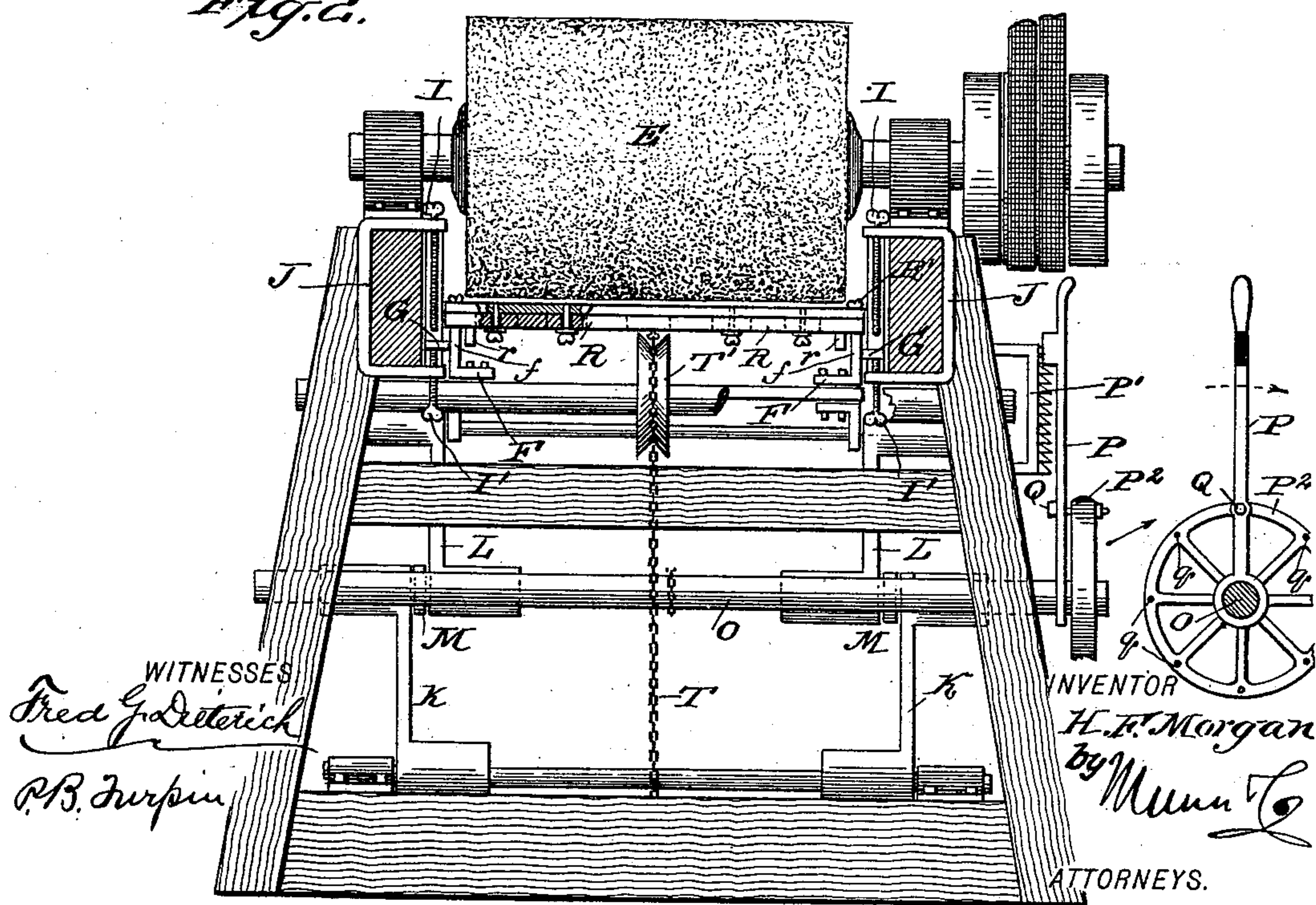


Fig. 2.



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Fred G. Deterick  
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H. F. Morgan  
by Munn & Co.  
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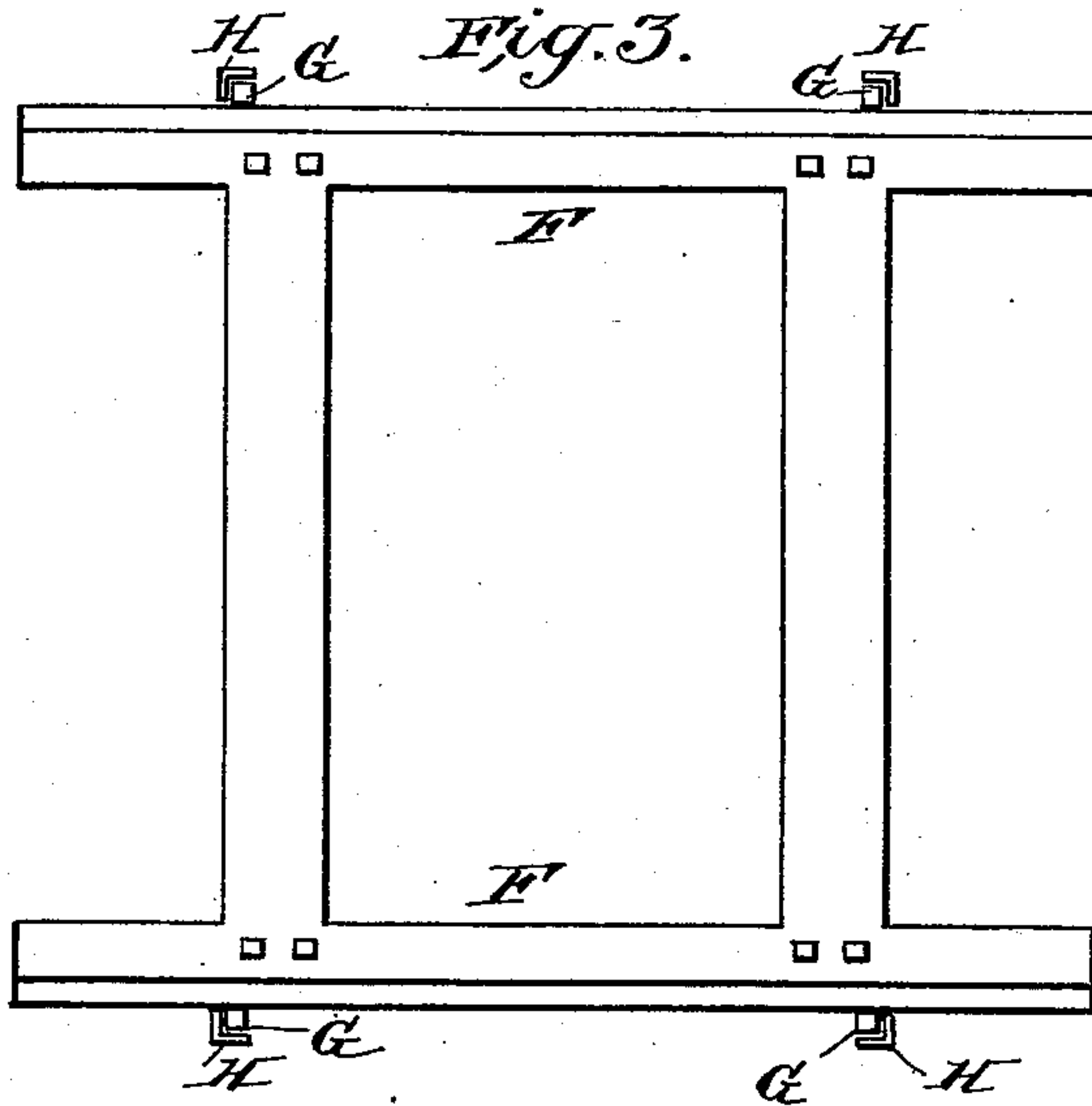
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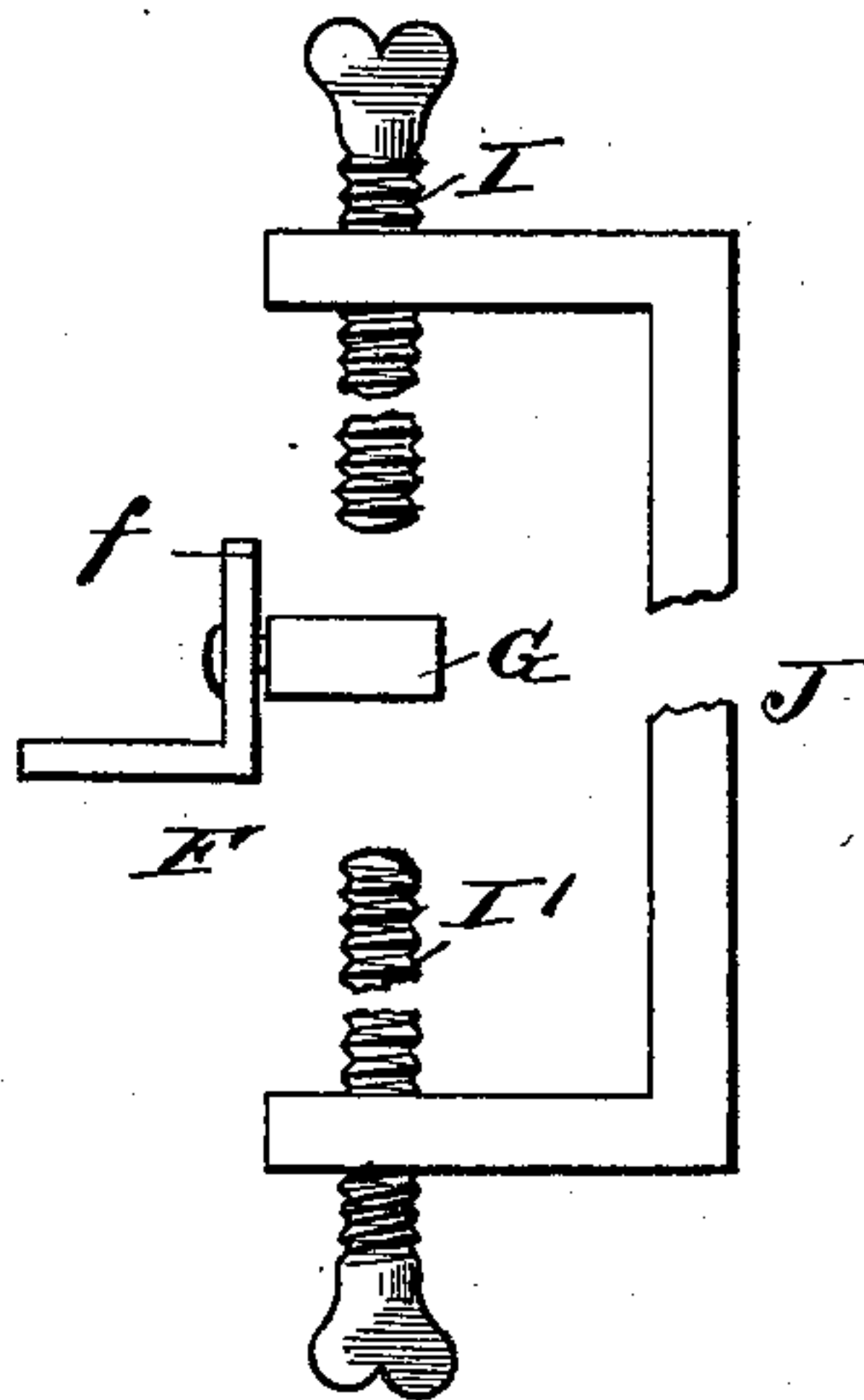
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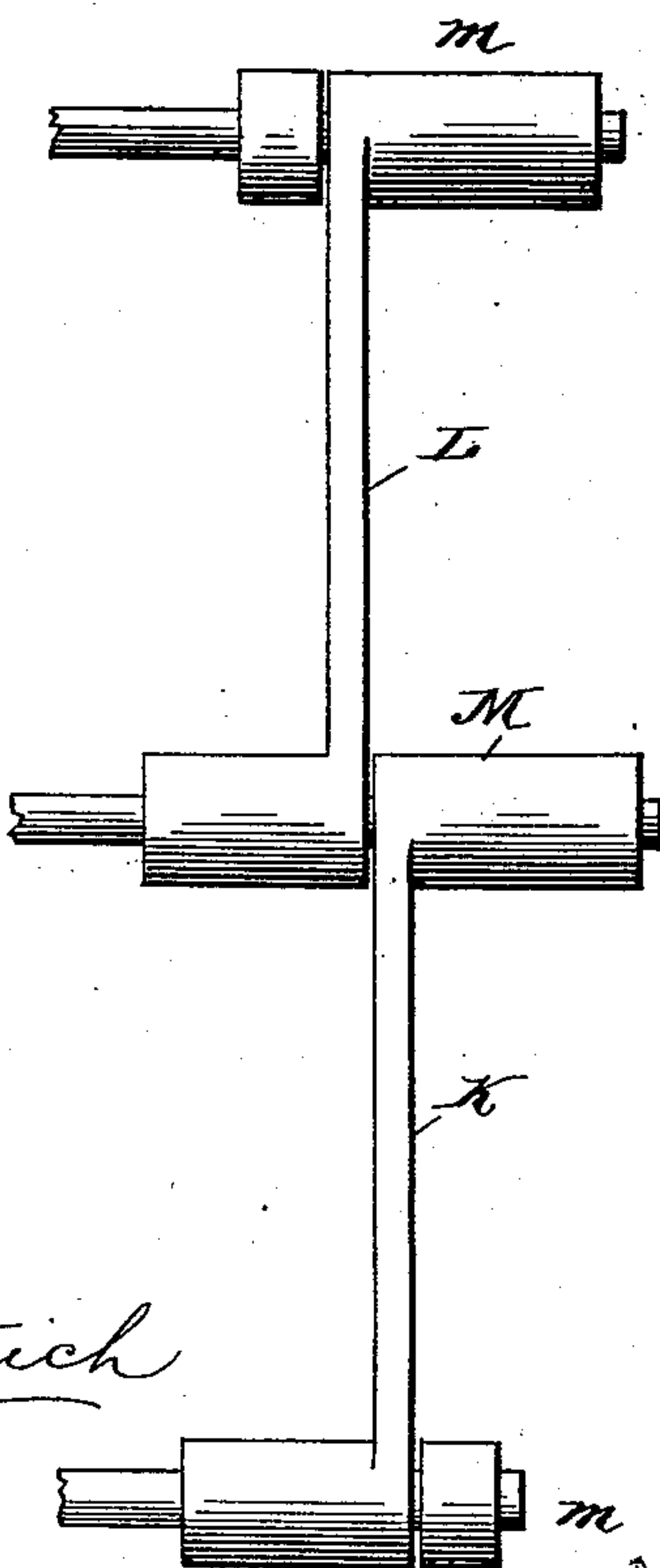
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*Fig. 4.*



*Fig. 5.*



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# UNITED STATES PATENT OFFICE.

HUMPHREY F. MORGAN, OF DELTA, PENNSYLVANIA.

## SLATE DRESSING AND SIZING MACHINE.

SPECIFICATION forming part of Letters Patent No. 540,998, dated June 11, 1895.

Application filed May 16, 1894. Serial No. 511,463. (No model.)

*To all whom it may concern:*

Be it known that I, HUMPHREY F. MORGAN, of Delta, in the county of York and State of Pennsylvania, have invented a new and useful Improvement in Slate Dressing and Sizing Machines, of which the following is a specification.

My invention is an improved machine intended especially for dressing and sizing slate for roofs and the like and seeks to provide a simple easily operated machine by which the slates may be ground and polished to the desired thickness more rapidly and economically than by hand and the invention consists in the novel constructions, combinations and arrangements of parts as will be hereinafter described and pointed out in the claims.

In the drawings, Figure 1 is a side view, and Fig. 2 an end view, of my machine. Fig. 3 is a detail view of the adjustable bed-frame. Fig. 4 is a detail view illustrating the stop devices for regulating the movement of said frame; and Fig. 5, a detail view, in part, of the toggle-arms and cross-shaft.

The main frame has sills A, end uprights B, top beams C and cross beams D suitably framed together. To this frame usually to the top beam as shown is journaled the wheel E which may be a grinding or a polishing wheel and may be of any material and construction to efficiently serve its purpose.

The bed frame F is arranged below the wheel E and movable vertically toward and from the same being guided by means of lateral lugs G fixed to it and operating in suitable guideways H fixed to the main frame and preferably to the top beams C and formed in the nature of angle plates secured to the inner sides of said beams as shown. These lugs are also arranged to engage the gage screws I I' by which the rise and fall of the bed frame is regulated and which screws are preferably journaled in the arms of a clamp frame J looped over the top beams with the screws arranged in alignment with the guideways H as shown. These gage screws may be set and will limit the movement of the bed frame and the holder movable thereon and so regulate the thickness of the ground and polished or finished slate.

Suitable means are provided by which to op-

erate the bed frame up and down and is preferably a toggle frame as shown comprising arms K and L arranged in sets or pairs near the ends of the frame, such arms K and L being jointed together at their adjacent ends M and jointed at their other ends at *m* respectively to the main frame at the bottom thereof and to the bed frame at *m'* and the opposite sets of toggles are connected by a rod or pitman N so that they will move uniformly and suitable devices are provided for operating such toggles to raise the bed frame and to permit it to fall. This is preferably a windlass shaft O connected by a chain O' with the toggle frame and adapted for operation to adjust such toggles to lift the bed frame.

A hand lever P is connected with the windlass shaft and engages a rack P' by which it may be locked in place to retain the toggle frame in position to hold the bed frame at its highest point of movement.

In connecting the lever P with the shaft O I prefer to pivot or journal it thereon and connect it adjustably with a pulley P<sup>2</sup> fixed to said shaft. The connection of the lever with the pulley is effected by means of a bolt or pin Q passing through said lever and into one of a series of openings or sockets *q* in the wheel. This permits the relation of the lever to the shaft O to be changed from time to time to secure a proper setting of the bed frame and is particularly useful in securing a proper adjustment of the parts as the wheel E becomes greatly reduced from wear.

The carriage R is supported and slides longitudinally on the bed frame F and below the wheel E and is provided on its under side with cleats *r* fitting between the side rails *f* of the bed frame and guiding the movements of the carriage back and forth thereon.

The carriage is provided near its ends with set screws R' arranged to be turned down to bear upon the bed frame and be set to tilt the carriage when it is desired to grind a slate thinner toward one end or tapering in which case the slates pass under the grinder lengthwise as will be readily understood. To operate this carriage I provide two weights S S' having chains T T' carried over pulleys T' and connected with the carriage such chains and weights being so disposed that one weight will



draw the carriage in one direction and the other weight will propel it in the opposite direction, shelves or supports U being provided for supporting one of said weights while the other is working.

On the carriage near its opposite ends I provide undercut back rests against which the edge of the slate is rested as it is passed through the machine. The carriage is wide enough to permit several plates to be rested side by side thereon. Several rests are to be placed on the carriage and are to be adjustable according to the width of slate which slate passes under the grinder sidewise.

The shaft of wheel E is suitably belted so it can be turned in one or the other direction.

In practice if the parts be in the position shown in Fig. 1 the slates may be applied to the carriage, the hand lever turned to set the bed frame up against the upper gage screws, the weight S at the right be placed on its shelf or support U and the weight S' lifted off and permitted to operate it will draw the carriage through under the wheel E as fast as said wheel cuts its way. Then the ground slates may be removed, and the operation repeated the newly applied slates being drawn back under the wheel, slates being ground or

polished at each movement of the carriage back and forth.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a machine substantially as described, the combination of the main frame, the bed frame movable vertically therein and having lateral lugs, guideways on the main frame in which said lugs operate gages extending into said guideways in position for engagement by said lugs, means by which to adjust the bed frame vertically and the carriage substantially as set forth.

2. The combination of the main frame, the bed frame, guideways in which said frame is movable, a toggle frame supporting said bed frame, a windlass shaft and lever connected with said toggle frame, the carriage movable on said bed frame, and the independent weights connected with and arranged to operate said carriage in reverse directions substantially as and for the purposes set forth.

HUMPHREY F. MORGAN.

Witnesses:

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