

(No Model.)

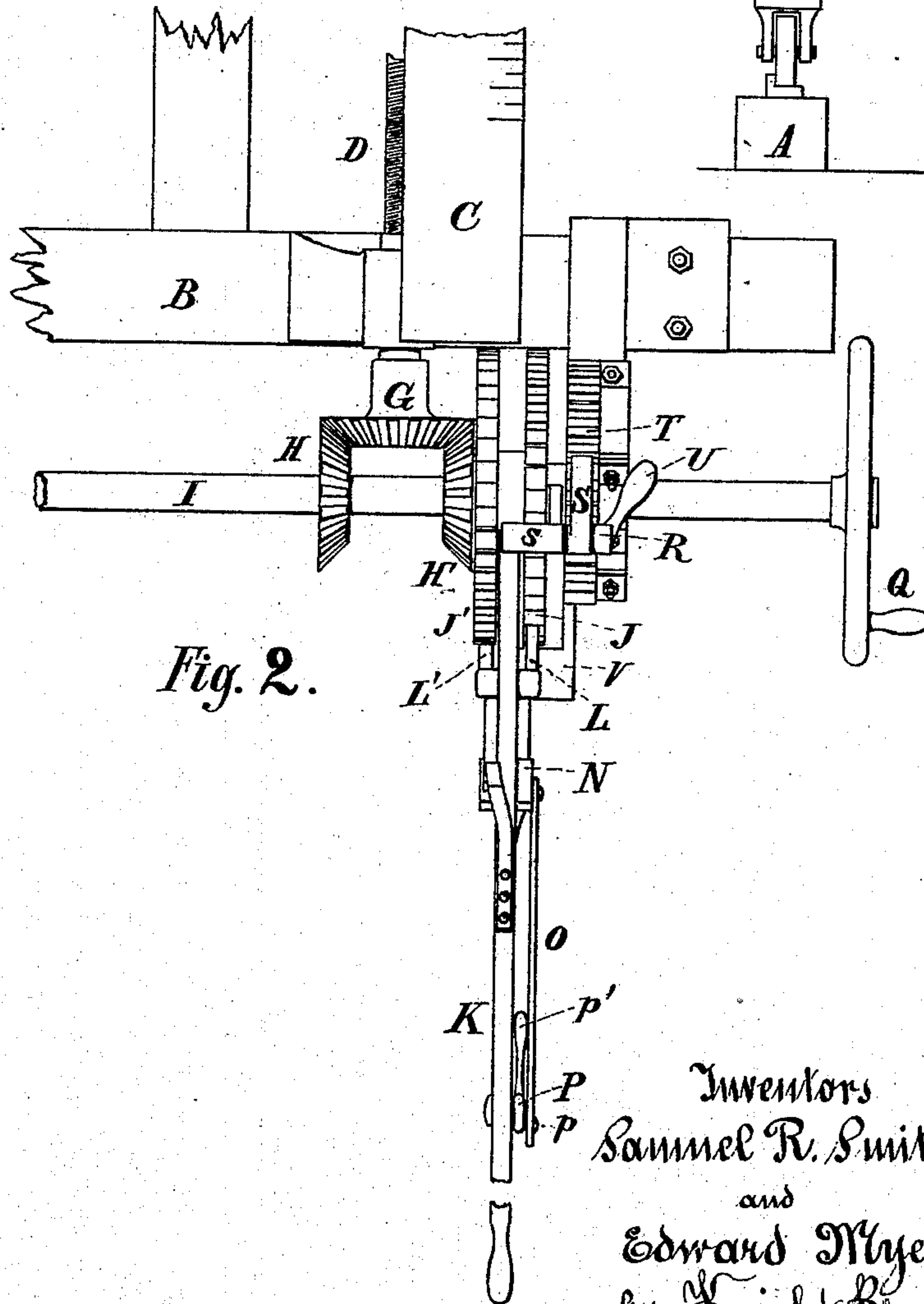
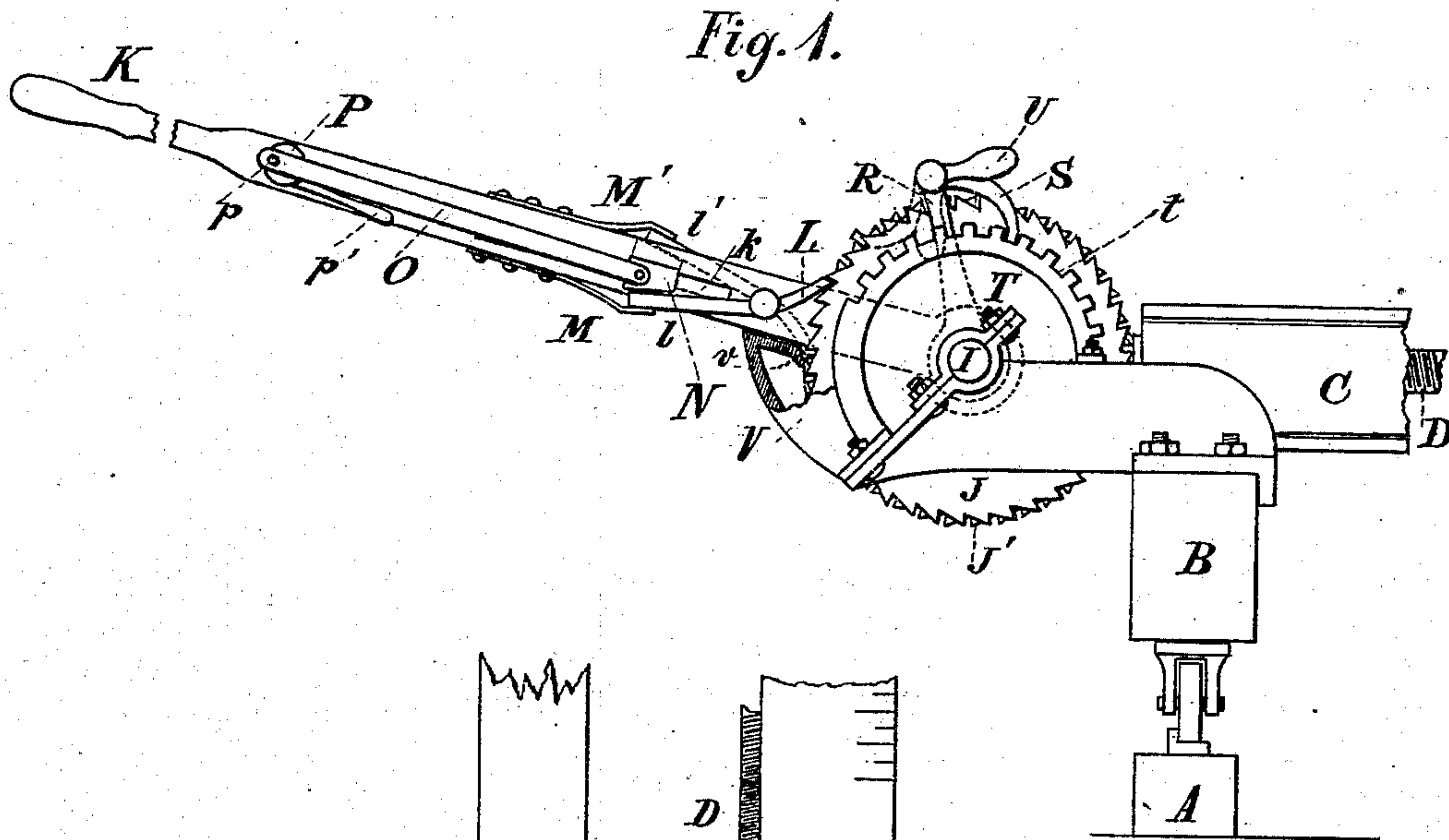
S. R. SMITH & E. MYERS.

3 Sheets—Sheet 1.

HEAD BLOCK.

No. 271,747.

Patented Feb. 6, 1883.



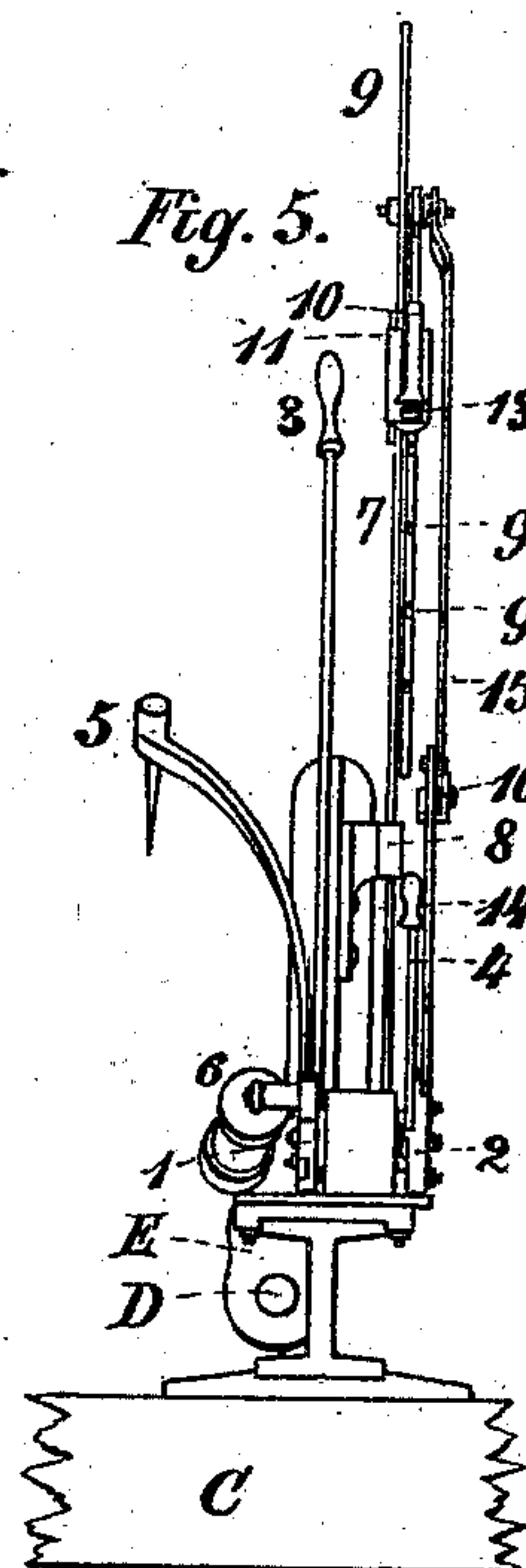
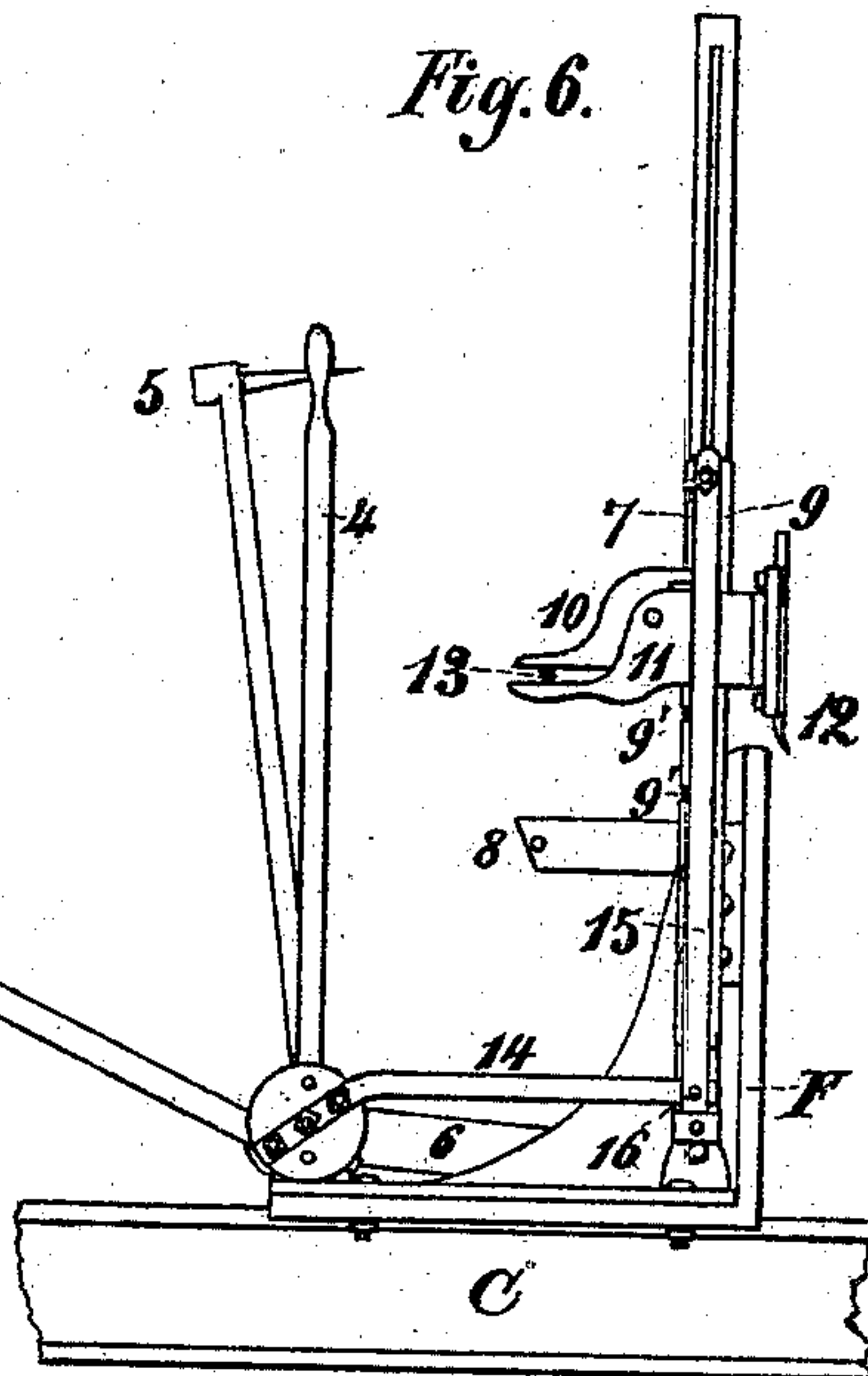
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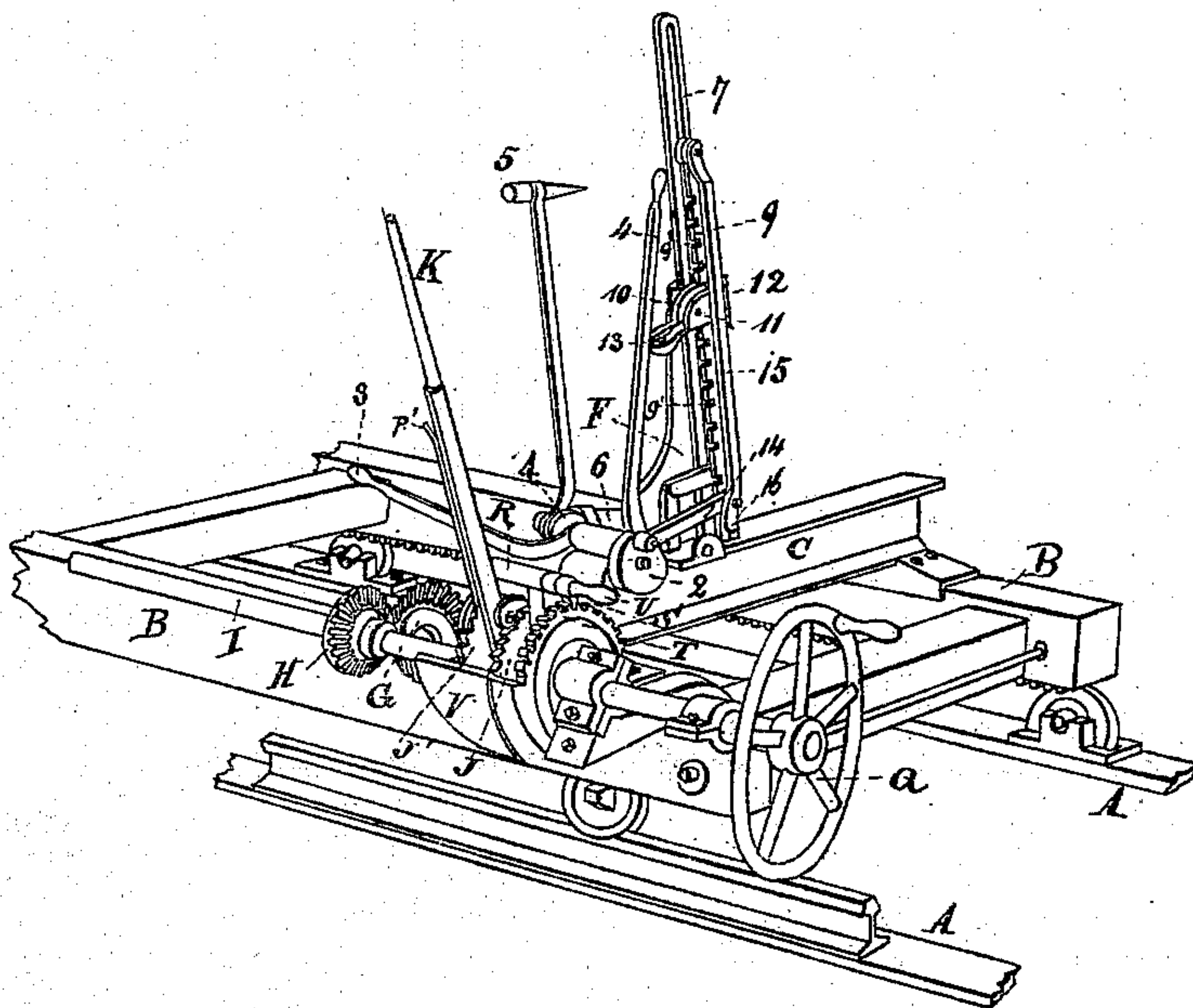
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Fig. 7.



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# UNITED STATES PATENT OFFICE.

SAMUEL R. SMITH AND EDWARD MYERS, OF CINCINNATI, OHIO, ASSIGNORS  
TO SMITH, MYERS & SCHNIER, OF SAME PLACE.

## HEAD-BLOCK.

SPECIFICATION forming part of Letters Patent No. 271,747, dated February 6, 1883.

Application filed July 3, 1882. (No model.)

*To all whom it may concern:*

Be it known that we, SAMUEL R. SMITH and EDWARD MYERS, both of Cincinnati, Hamilton county, Ohio, have invented new and useful  
5 Improvements in Saw-Mill Dogging Mechanism, of which the following is a specification.

Our invention relates to improved dogging mechanism that enables the secure retention of a squared log or a plank in place upon the head-  
10 block until and during the very last cut, or the secure retention of a board or plank for ripping.

In the accompanying drawings, Figure 1 is a side elevation, (omitting the hand-wheel,) and  
15 Fig. 2 is a top view, of our knee-setting mechanism. Fig. 3 is a side elevation of our dogging mechanism, with the board-dog in its retracted position. Fig. 4 is a side and Fig. 5  
20 an edge view, showing the board-dog advanced to the vertical position. Fig. 6 shows the log-dog retracted and the board-dog dropped to its effective position. Fig. 7 represents our attachment in position.

A, B, and C may represent respectively portions of the track, the carriage, and the head-  
25 block sills of a saw-mill.

D may represent the customary setting-screw, occupying nut projection E from knee F. The screw D carries the accustomed mit-  
30 ter-wheel, G, which gears with two other miters, H and H', of which wheel H is fast upon shaft I, and wheel H' revolves loosely thereon and is attached to a ratchet-wheel, J', which consequently, in like manner, revolves loosely on  
35 said shaft. Firmly keyed to said shaft I is a ratchet-wheel, J, similar to wheel J', but with its teeth pointed in the reverse direction.

K is a lever centered on shaft I between the ratchet-wheels, and having pivoted to its op-  
40 posite sides two similar but reversely-directed pawls, L L', whose pressure upon their respective ratchet-wheels is maintained by springs M M', which bear against the heels l l' of said pawls. These pawls are capable of being re-  
45 leased from their ratchets by a wedge, N, which occupies a guide-slot, k, in lever K, and which is connected by bar O with wrist p on cam P, having handle p'. Partial rotation of said cam operates to force the wedge downward  
50 and, by pressing against the pawl-heels, to lift

the pawls clear of the ratchets. Such release of the pawls permits the sawyer to quickly re-tract the knees by a brisk retrograde rotation of hand-wheel Q.

So attached as to vibrate concentrically with  
55 shaft I is an arm, R, in whose outer extremity is a pivoted pawl, S, which can be made to occupy any one of a series of notches, t, in a fixed segment-rack, T. A weighted handle, U, be-  
60 ing moved to the right or to the left, operates to hold the pawl securely in the rack-notch, as shown by strong lines in Figs. 1 and 2, or out  
of the same, as shown by dotted lines, Fig. 1. A lateral projection, s, from the pawl S serves  
65 as a stop to limit the forward stroke of the lever, and also to prevent the accidental raising of pawl L. The retrograde stroke of the lever K is limited by stop V, in which a cavity or  
70 pocket, v, receives the pawl L' and prevents its accidental disengagement from the ratchet. Both pawls being thus guarded against disen-  
gagement, false and irregular setting of the  
75 knees is made impossible. The distance apart of the consecutive notches t is such as to correspond with a shift of the knees through  
the smallest fraction of an inch—say one thir-  
80 ty-second—by which different thicknesses of mill-lumber are distinguished. It is appar-ent that after the pawl S has been dropped into the selected notch each forward stroke of  
85 the lever K necessarily shifts the knees a given distance, and thus uniform thickness of cut is obtained. The shaft I is, as usual in saw-mills, of sufficient length to communicate with  
a precisely identical head-block mechanism at  
90 the other extremity of the carriage.

Our log and board dogging mechanism is of the following construction: Pivoted to the rear portion of any suitable knee, F, are two  
95 hubs, 1 2, from which project handles or levers 3 4. From hub 1 rigidly projects a hooked bar or rod, 5, which constitutes the log-dog. A helical spring, 6, serves to retain the log-dog either to its active condition, as in Figs.  
3, 4, and 5, or to its inactive or retracted con-  
100 dition, as in Fig. 6. The attachment of the spring 6 at one end to the knee and at the other end to the lever 3 is such that any move-ment of the lever either from its extreme for-ward or from its extreme rearward position



operates to lengthen the spring, and is consequently opposed by it until the lever has been moved past the middle position of its stroke, where the spring then acts to complete the stroke and to bring and securely retain the lever to either its dogging or inactive condition, as the case may be. Pivoted to the knee near its front is a vibrating stanchion, 7, whose backward play is limited by yoke 8. Fitted to and sliding upon stanchion 7 is a sheath, 9, which has a series of notches, 9', for optional reception of the pawl 10, pivoted to holder 11 of the spike 12, which constitutes our board-dog proper. The pawl 10 is held securely to any notch in which it may be placed, for the time being, by spring 13. Hub 2 is connected with sheath 9 by toggle 14 15, of which the member 14 is bolted fast to and projects rigidly from the hub, while member 15 is at one extremity united by joint 16 to the extremity of member 14 and at its other extremity is pivoted to the sheath 9, near the upper end of the latter.

In the condition of toggle shown in Figs. 3, 4, and 5, the board-dog proper or spike, 12, is held to the elevated position indicated in those figures. A slight elevation of lever 4 flexes the joint 16 and permits the sheath, with its dog, to drop to the position shown in Fig. 6, so as to engage with the top of the log near the squared side of the same or with the upper edge of a plank or board, as the case may be. The joint 16 is so formed as to be capable of flexure only in the direction of the standard, as shown, and to be stiff in the reverse direction, similar to the toggle-joints of buggy-hoods. Thus both dogs are securely held either in or out of action.

In operating our compound dogging mechanism the log-dog is first brought into service to hold the round log, which having been squared on two adjacent sides in the usual way and placed with its squared sides respectively against the head-block sill and the knee-wall, the board-dog is then engaged in such notch 9' of sheath 9 as that when it is

permitted to descend, as in Fig. 6, it will engage with the log. When the log has been so far reduced as to bring the log-dog in the way of the saw, said dog may be shifted to a part of the log more distant from the saw-path or withdrawn altogether, and in either case the log will be firmly and immovably held by the board-dog until completion of the very last cut.

We are aware that a saw-mill dog has been caused to engage in the log by the action of a spring, and that the bit or dog proper has been capable of both vertical and horizontal adjustment on bars both rigid and pivoted, and that log and board dogs have been associated in the same mill. We therefore disclaim novelty in such devices, broadly considered.

We reserve the right to embody the subject-matter of the knee-setting mechanism in a separate application for Letters Patent.

We claim as new and of our invention—

1. In a saw-mill dogging mechanism, the combination of knee F, hub 1, lever 3, hooked bar or rod 5, and the spring 6, whose attachment to the lever 3 is such as to hold it either to the retracted or protracted position when left at liberty, substantially as set forth.

2. The combination, with the board-dog 12 upon the vibrating stanchion 7, of the toggle 14 15 16, for holding said dog securely either to the retracted or protracted position, substantially as set forth.

3. In a board-dogging mechanism, the combination of hub 2, with its attached lever 4, the vibrating stanchion 7, pivoted to the knee, the stop 8, the sliding sheath 9 9', the adjustable holder 10 11 13, the dog 12, and the toggle 14 15 16, substantially as set forth.

In testimony of which invention we hereunto set our hands.

SAML. R. SMITH.  
EDWARD MYERS.

Attest:

GEO. H. KNIGHT,  
SAML. S. CARPENTER.