

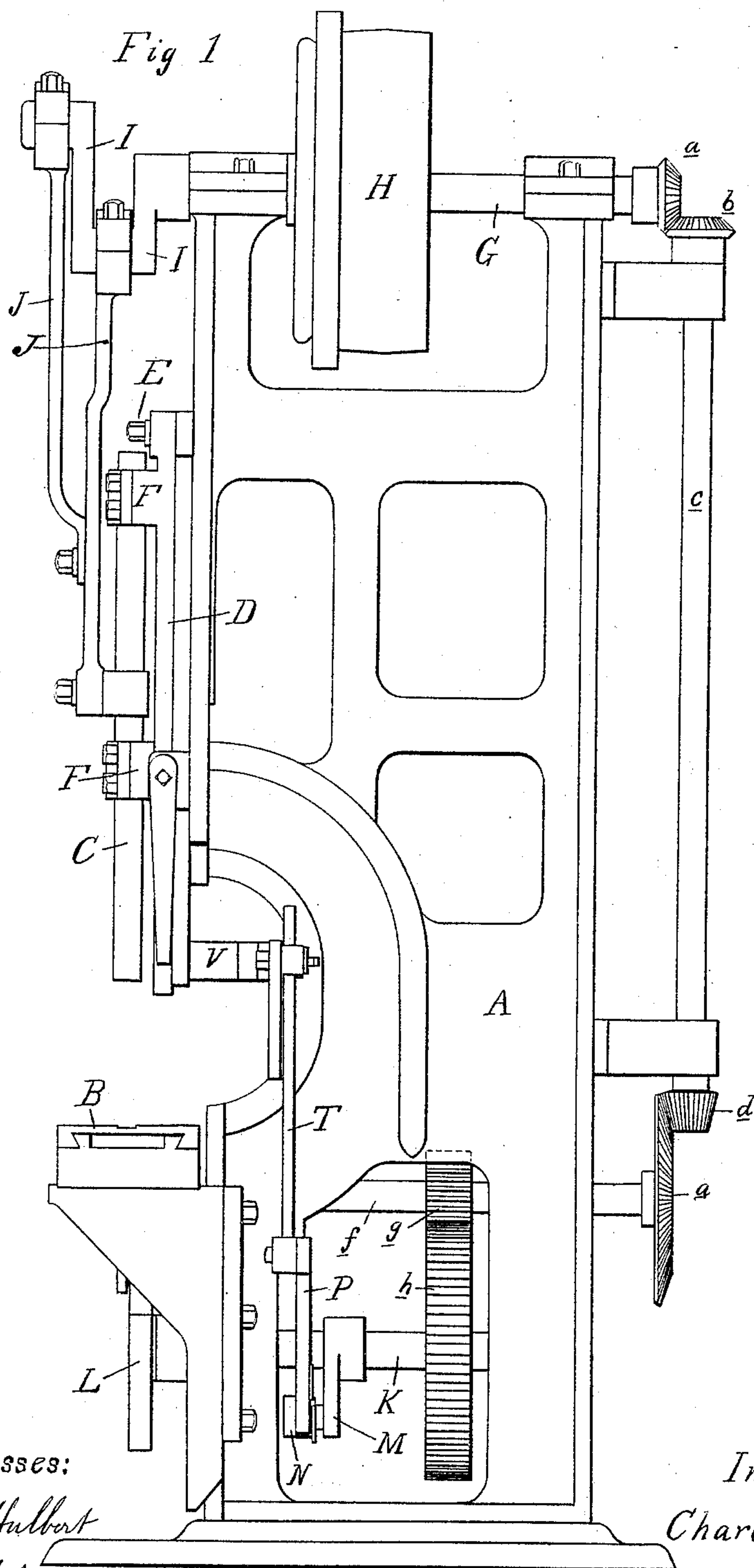
(No Model.)

3 Sheets—Sheet 1.

C. SEYMOUR.  
MORTISING MACHINE.

No. 417,098.

Patented Dec. 10, 1889.



Witnesses:

*R. M. Hulbert*

*John Schuman*

Inventor:

*Charles Seymour*

*By Thos. S. Sprague & Son*  
*Att'y.*

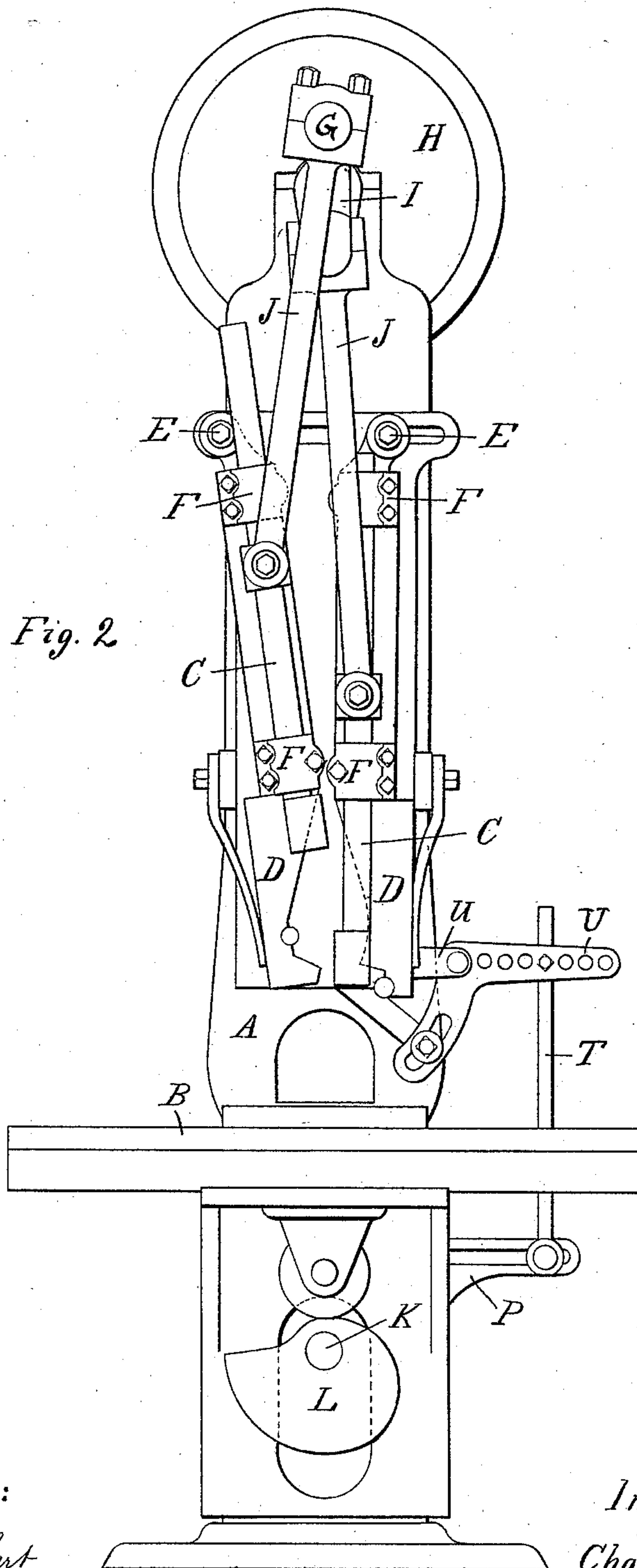
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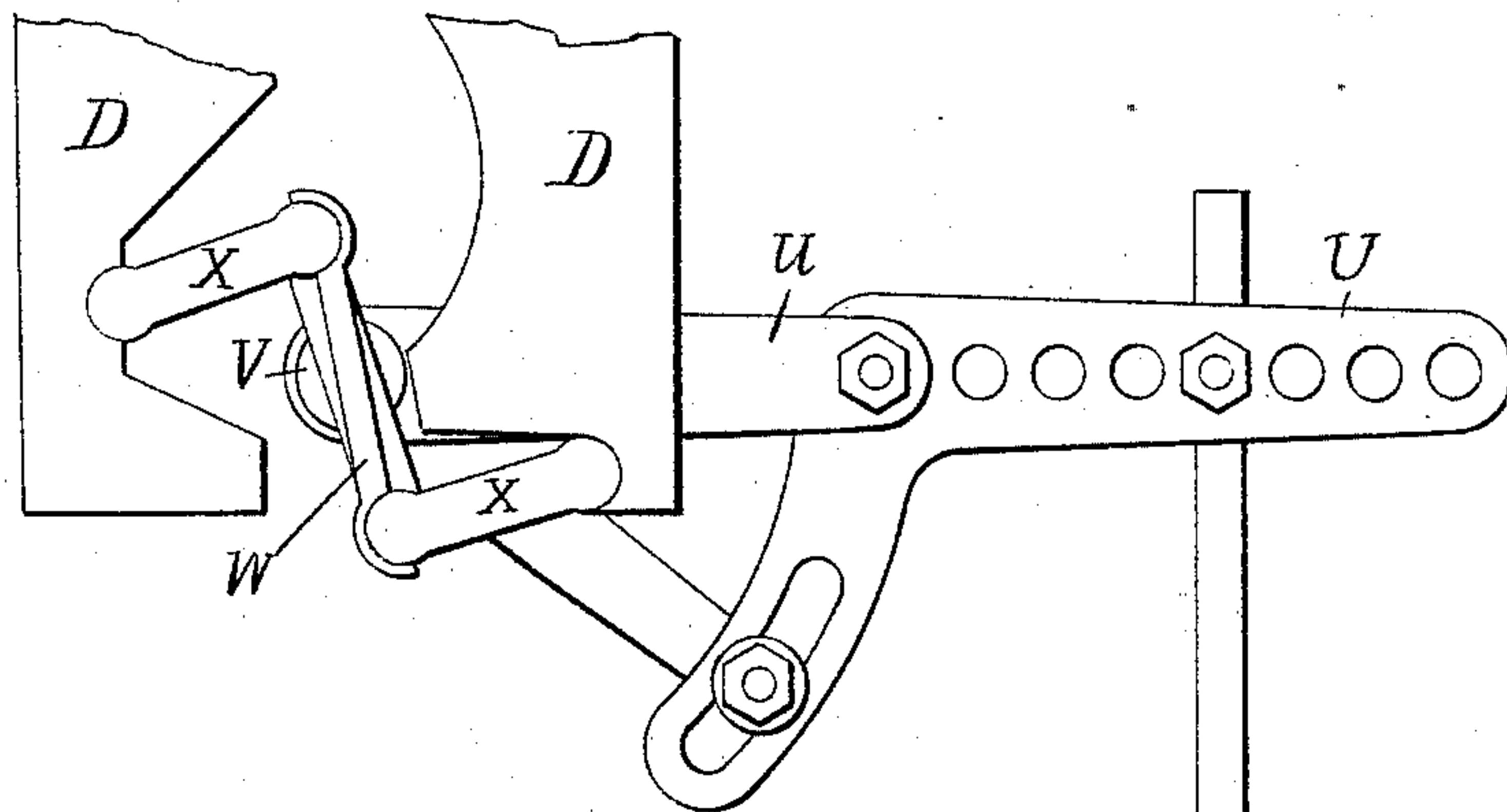
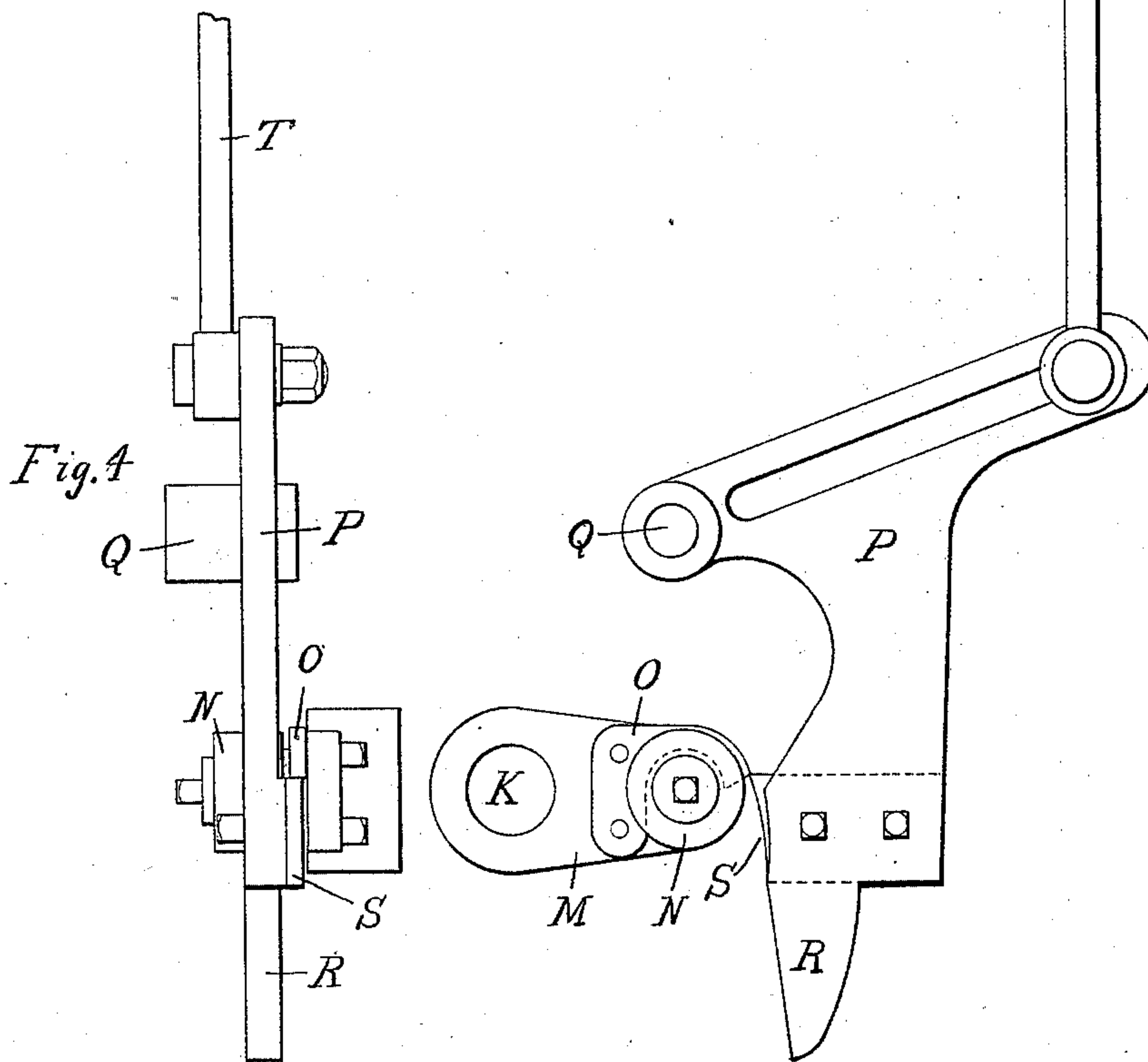


Fig. 3



Witnesses:

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John Schuman

Inventor:

Charles Seymour

By Mos. L. Sprague & Son  
Att'y.



# UNITED STATES PATENT OFFICE.

CHARLES SEYMOUR, OF DEFIANCE, OHIO, ASSIGNOR TO THE DEFIANCE  
MACHINE WORKS, OF SAME PLACE.

## MORTISING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 417,098, dated December 10, 1889.

Application filed February 27, 1888. Serial No. 265,358. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES SEYMOUR, a citizen of the United States, residing at Defiance, in the county of Defiance and State of Ohio, have invented certain new and useful Improvements in Mortising-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to new and useful improvements in mortising-machines for mortising wagon or carriage hubs or other mortising in wood; and the invention is especially designed to form an improvement upon a similar machine described in the patent to Charles C. Strong, Charles Seymour, and David B. Turnbull, dated April 5, 1881, No. 239,881.

20 The invention consists, mainly, in the improved means for spreading the chisels apart to produce the desired width of mortise and for effecting a quick release of said chisels, all as more fully hereinafter described, and shown in the accompanying drawings, in which—

25 Figure 1 represents a side elevation of a double-chisel mortising-machine. Fig. 2 is a front elevation thereof. Fig. 3 is a detached detail elevation showing the construction of the device for spreading the chisels and for effecting the quick release. Fig. 4 is an edge view of the lower portion of Fig. 3.

A is the frame supporting the operating parts of the machine.

35 B is the table or bed upon which the work is secured to be operated upon, the usual head and tail stocks (not shown) being provided to hold the wagon-hubs.

40 C C are the chisel-bars, in the lower ends of which the chisels (not shown) are inserted.

DD are the chisel-bar bed-plates, pivotally hung on pivots E on the front side of the machine and provided with suitable bearings F, on which the chisel-bars reciprocate.

45 G is the drive-shaft, journaled on top of the frame and provided with a suitable drive-pulley H.

50 I-I is a double crank on said drive-shaft, to which the chisel-bars are secured by means of the connecting-rods J J.

K is the cam-shaft, journaled in the lower part of the frame and provided with the cam L for raising and lowering the table, which slides in suitable vertical guides.

M is a crank secured upon the shaft K and 55 provided at its free end with a cam or cam-roller N.

O is another cam, secured to the free end of the crank M, and P is a bell-crank lever fulcrumed at Q to any convenient part of the 60 frame, and with its lower arm R in operative relation to the cam-roller N.

S is a cam secured to the arm R of the bell-crank lever in operative relation to the cam O on the crank. 65

T is a connecting-rod adjustably secured at one end to the bell-crank lever P and at the other end to the lever U, which is fulcrumed upon the shaft or pivot-pin V.

W is a cross-bar secured to the pivot-pin V, 70 and X are elbow-levers pivotally secured to the ends of the cross-bar W and engaging with the lower ends of the chisel-bar bed-plates, respectively, thereby controlling the spreading of said plates. 75

Motion is conveyed from the drive-shaft G to the shaft K by means of a pivotal drive-connection, preferably as shown, and consisting of the bevel-gears *a b*, shaft *c*, bevel-gears *d e*, shaft *f*, and gear-wheels *g h*. 80

In practice, if motion is conveyed to the drive-shaft G, the chisel-bars will be reciprocatingly actuated, while at the same time motion is communicated to the shaft K, which carries the cam on the crank M into operative 85 contact with the arm R of the bell-crank P, whereby, through the connections shown and described in Fig. 3, the chisel-bar bed-plates are urged apart to cause the spreading of the chisel-bars. 90

It will be observed that the cam-roller N, acting against the arm R of the bell-crank, effects the initial part of the spreading, which is then finally accomplished by the action of the cam O, acting against the cam S on the 95 bell-crank lever. Both of these cams terminate abruptly for the purpose of effecting an instantaneous release of the spreading of the chisel-bars, and as the drive-connection from the shaft G to the shaft K is positive it will 100

be understood that the critical point of release can now be adjusted to a nicety to take place just at the very moment at which both chisels are withdrawn from the mortise. To  
5 this end the cams are abruptly cut away to form sharp corners. In previous constructions this could not be accomplished, and, referring specifically to the above-cited patent, the motion is conveyed from the drive-shaft  
10 to the lower shaft by means of the pulleys and belt, and, the number of strokes of the chisels not being an exact multiple of the number of revolutions of the cam-shaft, a chisel was liable to be part way down in its  
15 cut when the release took place, and, the chisel being free to retract from its cut, would form an objectionable offset in the mortise. The cams O and S are preferably made of hardened steel, and, if desired, may be ad-  
20 justably secured in place. The object of using the roller-cam during the earlier stage

of spreading is to relieve the friction as much as possible by confining the action of the cams O S to accomplish the work at and near the critical point of the quick release. 25

What I claim as my invention is—

In a mortising-machine, the combination, with the drive-shaft operating the chisel-bars, the cam-shaft having a positive drive-con-  
30 nection with said shaft, and the crank on said cam-shaft for operating the spreader device, substantially as described, of the cam-roller N, the bell-crank P, and the interrupted cams O and S, substantially as described.

In testimony whereof I affix my signature, in  
35 presence of two witnesses, this 18th day of February, 1888.

CHARLES SEYMOUR.

Witnesses:

EDWIN PHELPS,  
P. KETLEMING.