

J. L. Cheney.
Shuttle Motion.

N^o 16,824.

Patented Mar. 17, 1857.

Fig. 1

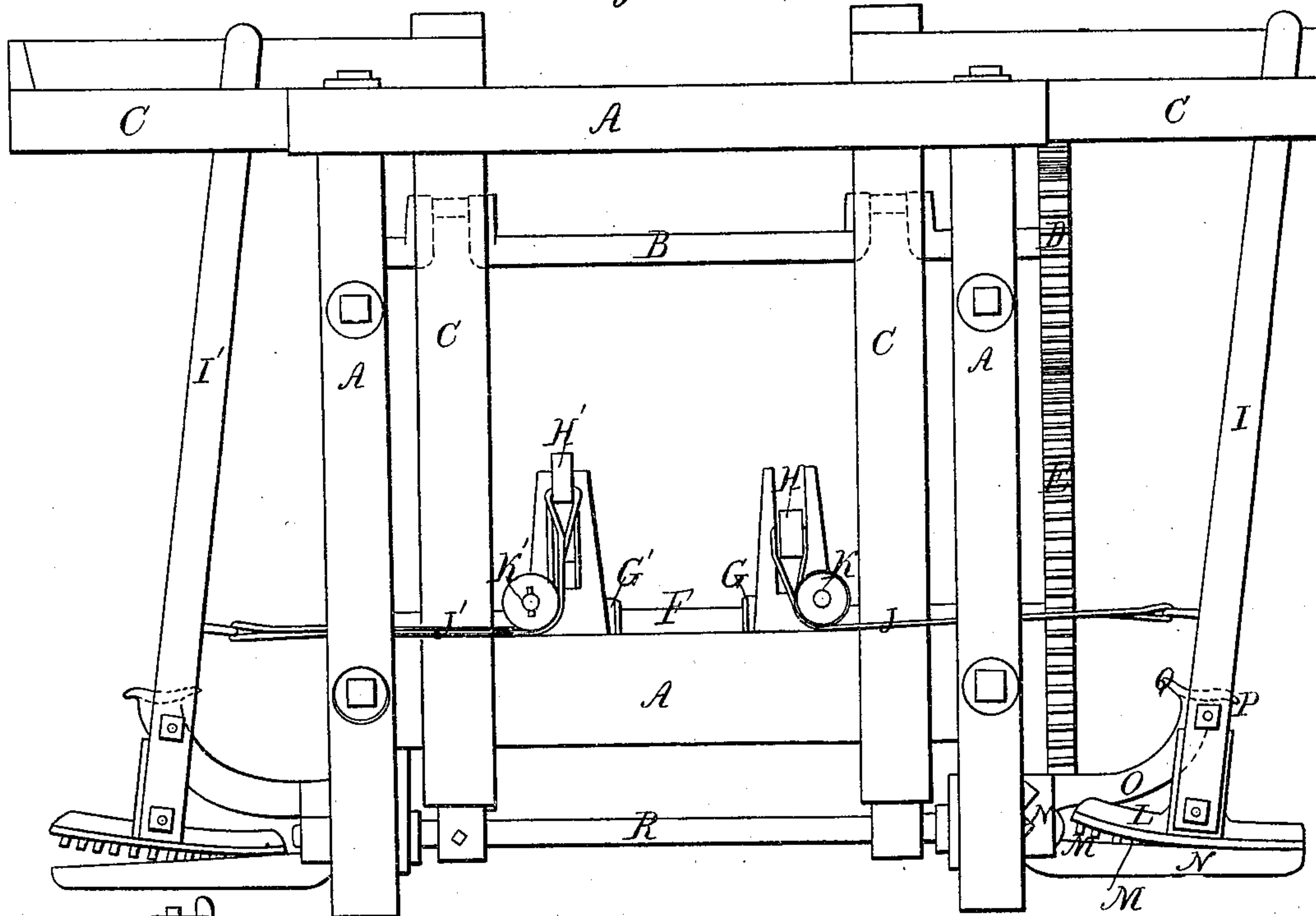


Fig. 2

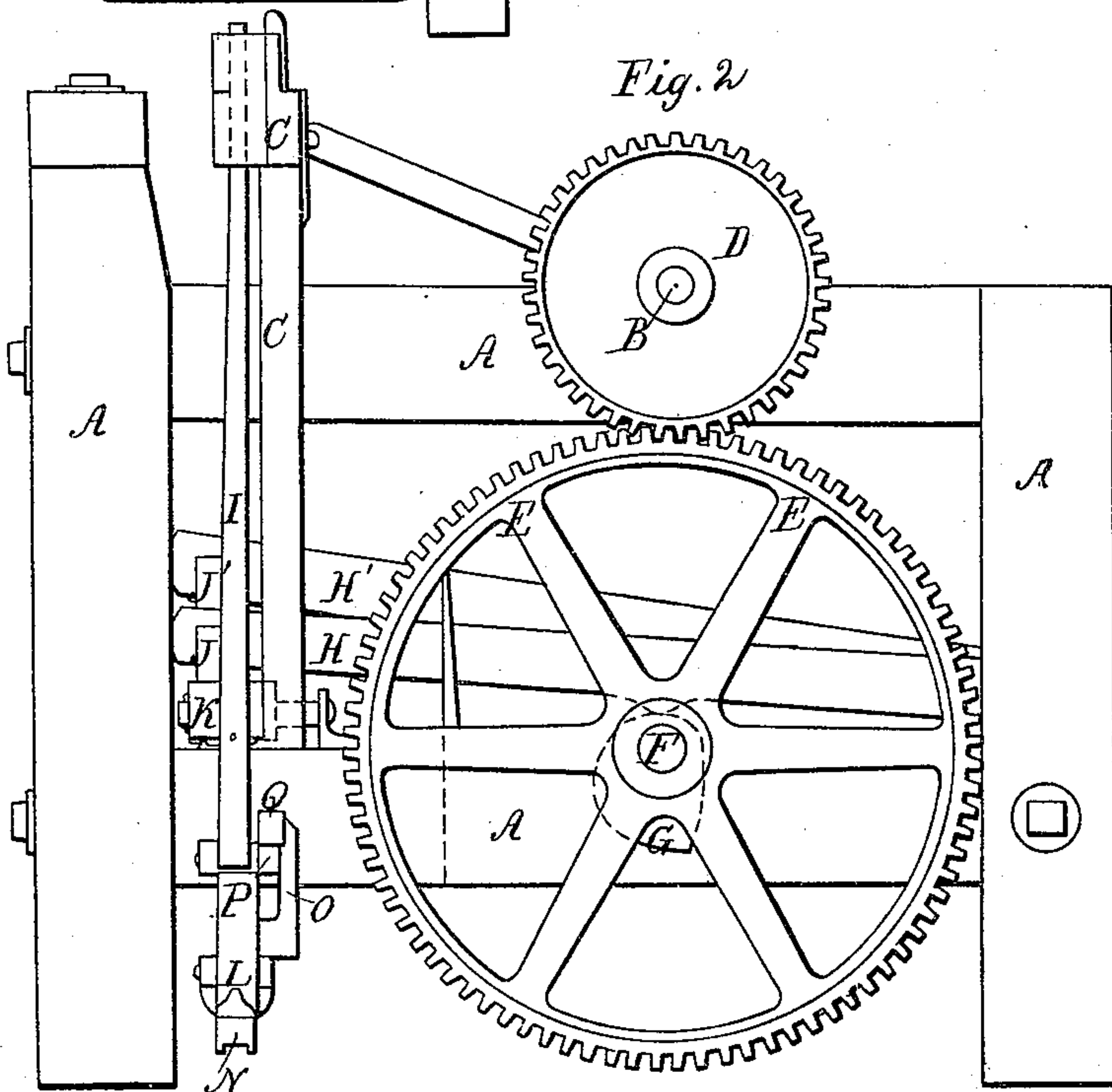
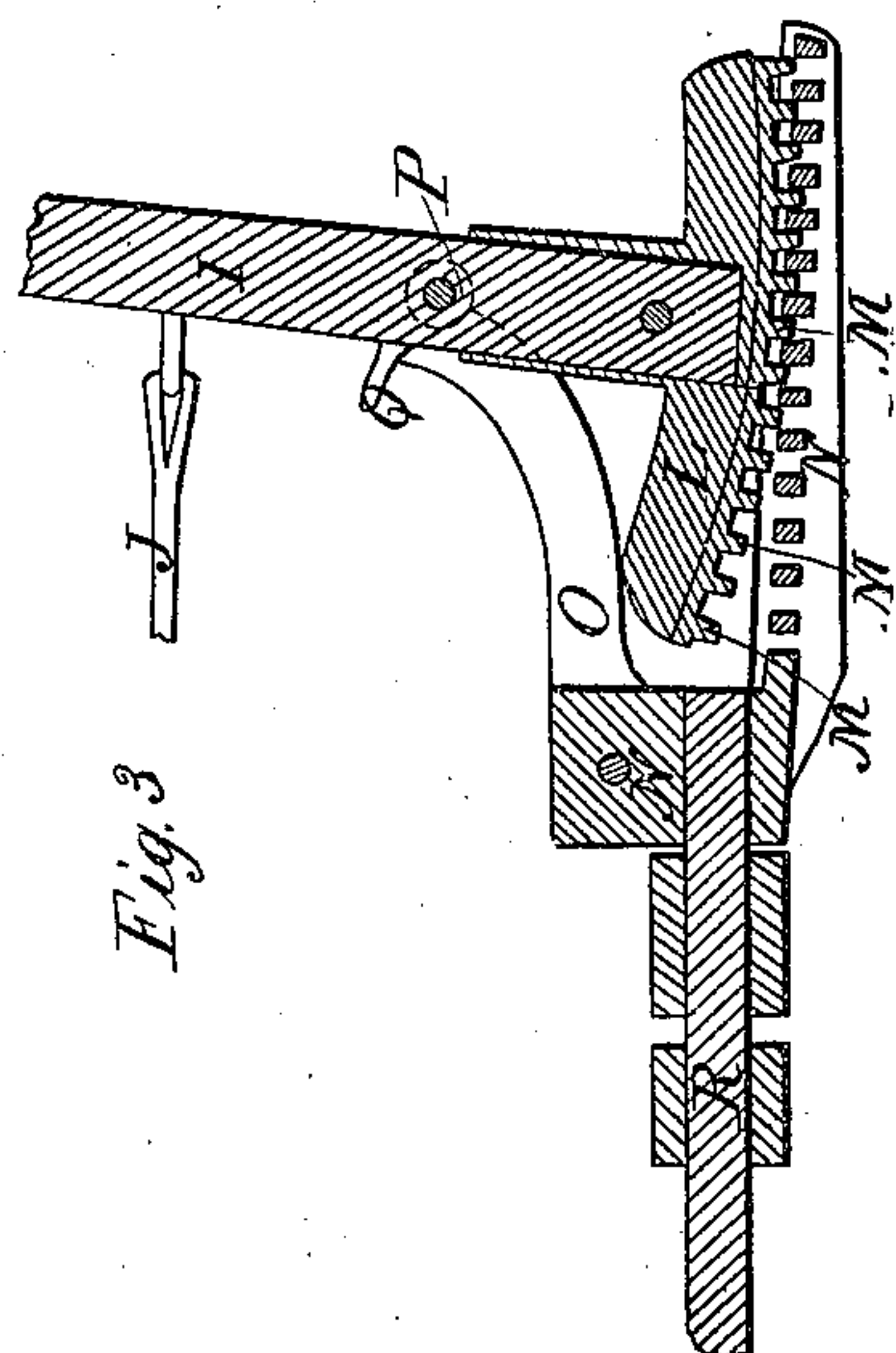


Fig. 3



UNITED STATES PATENT OFFICE.

JOHN L. CHENEY, OF LOWELL, MASSACHUSETTS.

POWER-LOOM.

Specification of Letters Patent No. 16,824, dated March 17, 1857.

To all whom it may concern:

Be it known that I, JOHN L. CHENEY, of Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Power-Looms; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, of which—

Figure 1, denotes a front elevation of a loom with my improvements attached. Fig. 2, is an end elevation of the same. Fig. 3, is a sectional view of the parts which constitute my improvements, and other parts adjacent.

Similar letters of reference in each of the figures indicate like parts.

A, represents the frame of a loom.

B, is the driving or crank shaft, which at each revolution operates the lathe, C, forth and back, the lathe swinging on the rocker shaft, R, and in all respects made like many in common use. The gear, D, at the end of shaft B, drives the gear, E, which is fastened to the end of the cam shaft, F, as the gear, D, is only one half as large as, E, it must revolve twice to give one revolution of gear E.

G, G', are two cams placed on the shaft, F, for the purpose of giving motion to the levers, H, H'. The levers H, H', are connected with the picker staves I, I', by means of the straps J, J', passing under the rollers K, K'.

The foregoing parts are common to every loom and do not form the subject of my improvements, but are introduced to show clearly the connection and relation of my improvements to the rest of the loom. As there are two picker staves to every loom, and both, exactly alike, I will for simplicity, confine the description of my improvements to one of them, that one which is connected with the picker staff I.

L, is a toothed segment or rocker, provided with a suitable place to receive the lower end of the picker staff, I, and into which the staff is firmly secured. The teeth M, M', are not so wide as the face of the rocker but a plane surface is left each side of them—which is intended to rest upon the raised edges of the stand N—which supports the rocker. Holes are cut in the stand N, to receive the teeth of the rocker, which may be more distinctly seen in the section in Fig. 3. The raised edges on the upper

surface of the stand N, upon which the lower end of the picker staff rocks, are perfectly straight, but not horizontal; they are made to incline from the loom downward, just sufficient so as to cause the rocker L, and picker staff, I, after they have been jerked forward by the action of the cam G, lever H, strap, J, for the purpose of throwing the shuttle, to fall back to the lower end of the stand and thus cause the upper end of the picker staff to move to the rear end of the shuttle box, to be in readiness to throw the shuttle forward again. This simple and effectual arrangement, I have made to take the place of a spring or other force, which is used for the same purpose in other looms. The stand, N, which supports the picker staff is fastened to the end of the rocker shaft R, and of course, both stand and staff have a motion in unison with the lathe. Connected and moving with the stand N, is another O, which is provided on its upper end with a guide Q, of the peculiar shape as shown in the drawings.

P, is a small stud or roll on a stud which is fastened into the picker staff, and is intended to play against the guide, Q, which is on the top of it, and the surface of which is made to conform to the waved line which the roll describes in the forward and back movement of the picker, staff, I. The guide, Q, acting upon roll, P, is intended to hold the picker staff I, down upon the stand N, but at the same time leave it free and unrestrained in its forward and back movement.

From the description of the various parts and movements above given, it will be seen that the picker staff, I, in its forward and back movement, does not swing on any one center or point, but by means of the rocker, L, rolling on the inclined stand, N, is continually changing the center upon which it swings, and consequent upon this, and upon the right curve given to the rocker, L, the proper inclination of the stand, N, and the proper adjustment of the staff, I, upon the rocker, depends the line described by the point in the picker staff, which strike the shuttle. The parts may be arranged so as to make this line perfectly horizontal, and thus produce what is called a "parallel motion," but as I prefer it and show it in my drawings, the line described should be, such as would have the effect to slightly raise that end of the shuttle, against which the picker staff strikes, and continue a regular and very

gentle rise of it until the shuttle leaves the shuttle box. In this way, the head of the shuttle is pointed downward, and is consequently less liable to shoot out through the warp and produce injury.

I would remark, that I only employ the guide Q, and roller P, or its equivalent with reference to a rocker L, geared to its stand N, the object of such guide and roller being to prevent the two from becoming ungeared during the throw of the pick staff and particularly at the termination of such, when the momentum is so great as to cause the staff to rise upward. No spring applied to the rocker to keep it on its stand, will effect the purpose as practice has fully demonstrated. I am aware that such has been attempted in the manner shown in Rensselaer Reynolds' application for a patent. But in this case, the spring does not operate with a guard stand and therefore is no equivalent to the guide, Q, and roller P. When a spring is used, its elasticity, which must necessarily be confined to such a limit as will not prevent the throw of the picker staff, will not prevent the ungearing of the rocker, or an injurious, upward lift of the picker. Nothing but an unyielding guide such as the guide Q, will be sufficient. Such will operate and require little or no oil to lubricate it.

I do not claim supporting the picker staff by a rocker and horizontal rail or stand; nor do I claim applying to the picker staff

and its supporting bracket, a curved, slotted guide and a roller as the same is shown in Albert C. Williams' application for a patent; nor do I claim applying to the picker staff, a spring for the purpose of retracting such staff; nor do I claim applying to the rocker and its stand, a spring, to bring the rocker back to its place after having picked and also to secure it to the rail while in the act of picking; nor do I claim making the striking point of the picker staff to travel in a straight horizontal line.

What I do claim is—

1. My improved picker motion or mechanism as made with a guard stand and rocker, a stationary guide, Q, and a stud or roller, P, and with reference to the picker staff, I, substantially as described.

2. I also claim so arranging the top bearing surface of the stand of the rocker, that it may incline downward as specified and so as to obtain all the advantages of a spring without the actual application or use of the same, meaning to claim such an arrangement of the top surface with respect to the rocker and staff as an improved equivalent to the spring.

In testimony whereof I have hereunto set my signature.

JOHN L. CHENEY.

Witnesses:

BENJAMIN PATCH,
CHARLES A. WELCH.