(No Model.) 2 Sheets—Sheet 1.

J. L. McKEE.

Pulleys and Mechanism for Counter Shafting.

No. 229,004. Patented June 22, 1880.

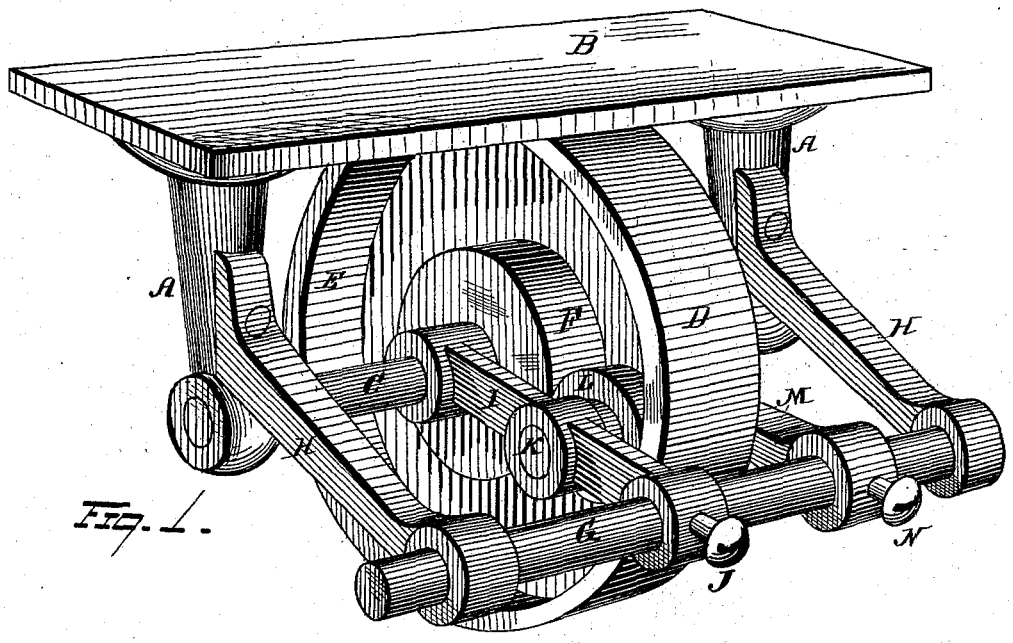

Fig. 1.

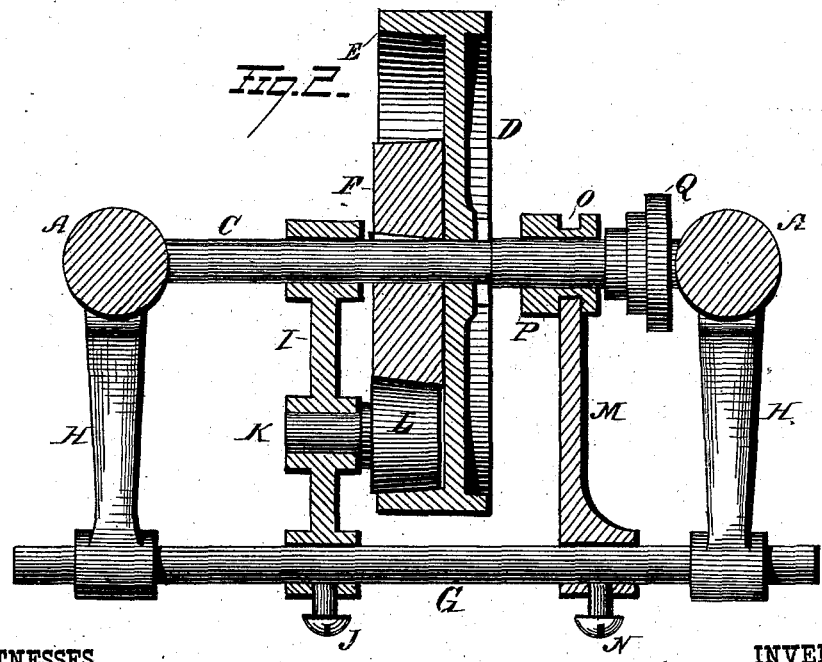

Fig. 2.

WITNESSES

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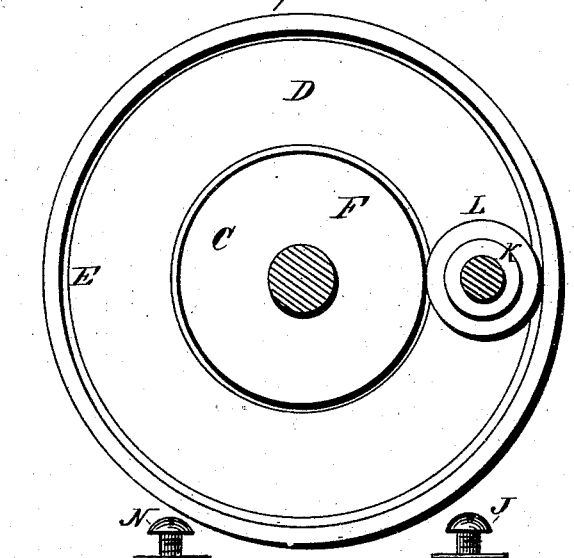
Fig. 3.



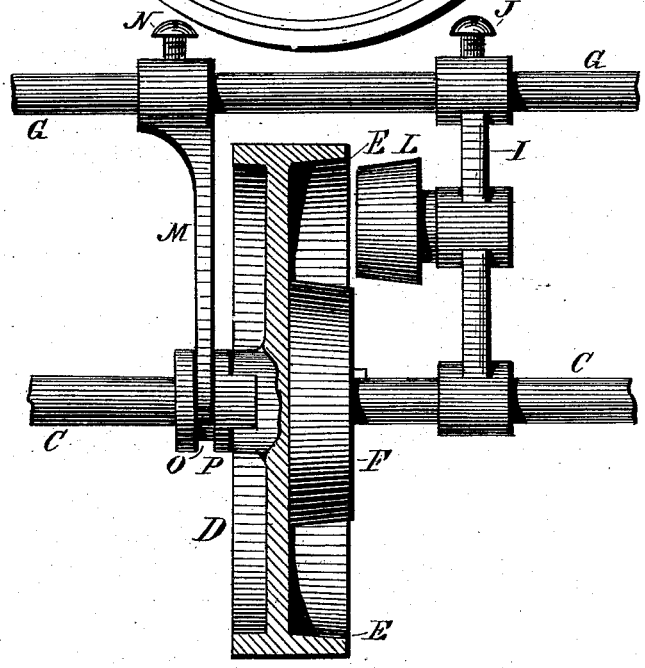


Fig. 4.

WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN L. McKEE, OF CORTLAND VILLAGE, NEW YORK.

PULLEY AND MECHANISM FOR COUNTER-SHAFTING.

SPECIFICATION forming part of Letters Patent No. 229,004, dated June 22, 1880.

Application filed April 27, 1880. (No model.)

To all whom it may concern:

Be it known that I, JOHN L. McKEE, of Cortland Village, in the county of Cortland and State of New York, have invented certain new and useful Improvements in Pulleys and Mechanism for Counter-Shafting; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

In said drawings, Figure 1 is a perspective view of my pulleys and mechanism in connection with a counter-shaft. Fig. 2 is a section taken on a horizontal plane through the counter-shaft. Fig. 3 is a side elevation of the pulleys as arranged when operating. Fig. 4 is a plan with a section of the pulley showing the clutch engaged.

Like letters on the several figures indicate the same parts.

The object and purpose of my invention is to obtain all the benefits of the ordinary pulleys, clutches, and cross-belts on counter-shafting as required for screw-cutting lathes and other machinery.

My invention consists in the combination and arrangement of the pulleys and accompanying mechanism, herein described and shown, whereby I accomplish the foregoing.

In the drawings, A A represent ordinary hangers fastened to B, or otherwise suitably fastened. C represents an ordinary counter-shaft with journals in A A. D represents a pulley running loose on C when not otherwise engaged, as hereinafter shown, and it receives the power from the main shaft. This pulley D has a projecting rim, made accurately and tapering, as represented by E.

F represents a fast pulley on shaft C. G represents a sliding or shifting bar, being operated by a suitable lever or shipper. (Not shown.) H H are projecting arms for supporting the said bar G and other mechanism.

I represents an arm fastened to G by a screw or other suitable device and sliding on C. The letter L represents a pulley turning on the arbor K, journaled in the arm I.

M represents an arm fastened by the screw N to the bar G. This arm M works the clutch P by operating in groove O.

Q represents an ordinary cone-pulley, which transmits the power to the work.

The pulley L is made conical, and a corresponding taper is given to the pulley F and the projecting rim E on its inner surface.

I construct the various parts out of metal or other suitable material, and of such dimensions as may be required for different purposes. The relative diameters of the pulleys D, F, and L should be so proportioned with reference to each other as to give the required speed.

The operation of my device is as follows: By moving the shifting-bar G so as to bring the clutch P into operation, the belt on D turns the shaft C and cone-pulley Q. By moving the bar G slightly, so as to just disengage the parts of the clutch P, the pulley D becomes idle and C stops, and consequently the machine or mechanism previously in operation also stops. By moving G a little farther the pulley L is brought in contact with E and F, and F being fast an opposite or reverse motion is given to C, the pulleys L and F being thus put in motion by the friction produced.

It will be readily seen that for a return or reverse motion on a screw-cutting lathe my device dispenses with cross-belts and additional pulleys or clutches as ordinarily used with counter-shafting.

The form of the pulleys F and L and the rim E can and should be so made with reference to friction and contact as will give the best results.

It is evident that my device is not only applicable to lathes, but may be applied for all purposes in machinery where the motions above described are required.

I do not confine myself to any particular form of clutch or to the form represented in the drawings.

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

1. The herein-described pulleys D, F, and L, arranged, combined, and used substantially as and for the purposes hereinbefore set forth and shown.

2. The combination of the arms I and M, bar G, and shaft C, substantially as and for the purpose herein described and shown.

3. The combination of the pulley L and arm I, substantially as and for the purposes herein described and shown.

4. The combination of the shaft C and pulley F, substantially as and for the purposes herein described and shown.

5. The combination of the shaft C, pulley D, pulley F, pulley L, and arm G, substantially as and for the purposes herein described and shown.

6. The combination of the shaft C, bar G, arms I and M, and clutch P, substantially as and for the purposes herein described and shown.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JOHN L. McKEE.

Witnesses:
W. H. SHANKLAND, Jr.,
M. S. BIERCE.