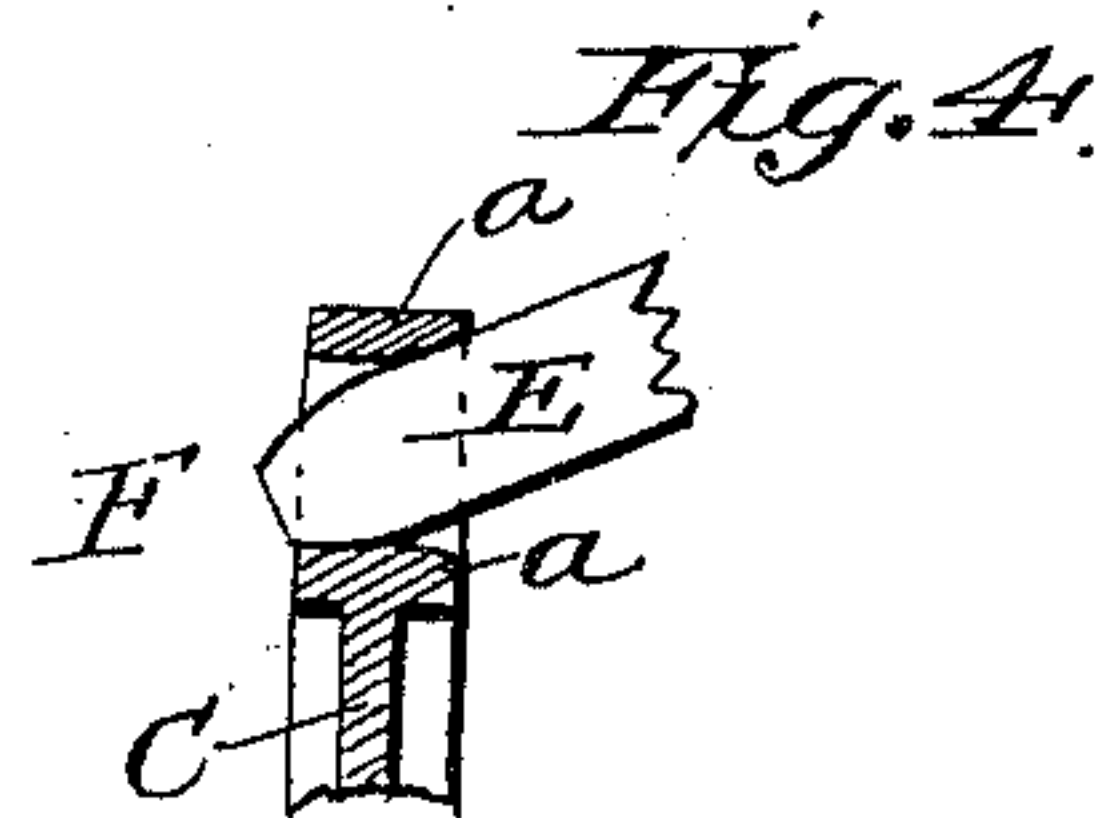
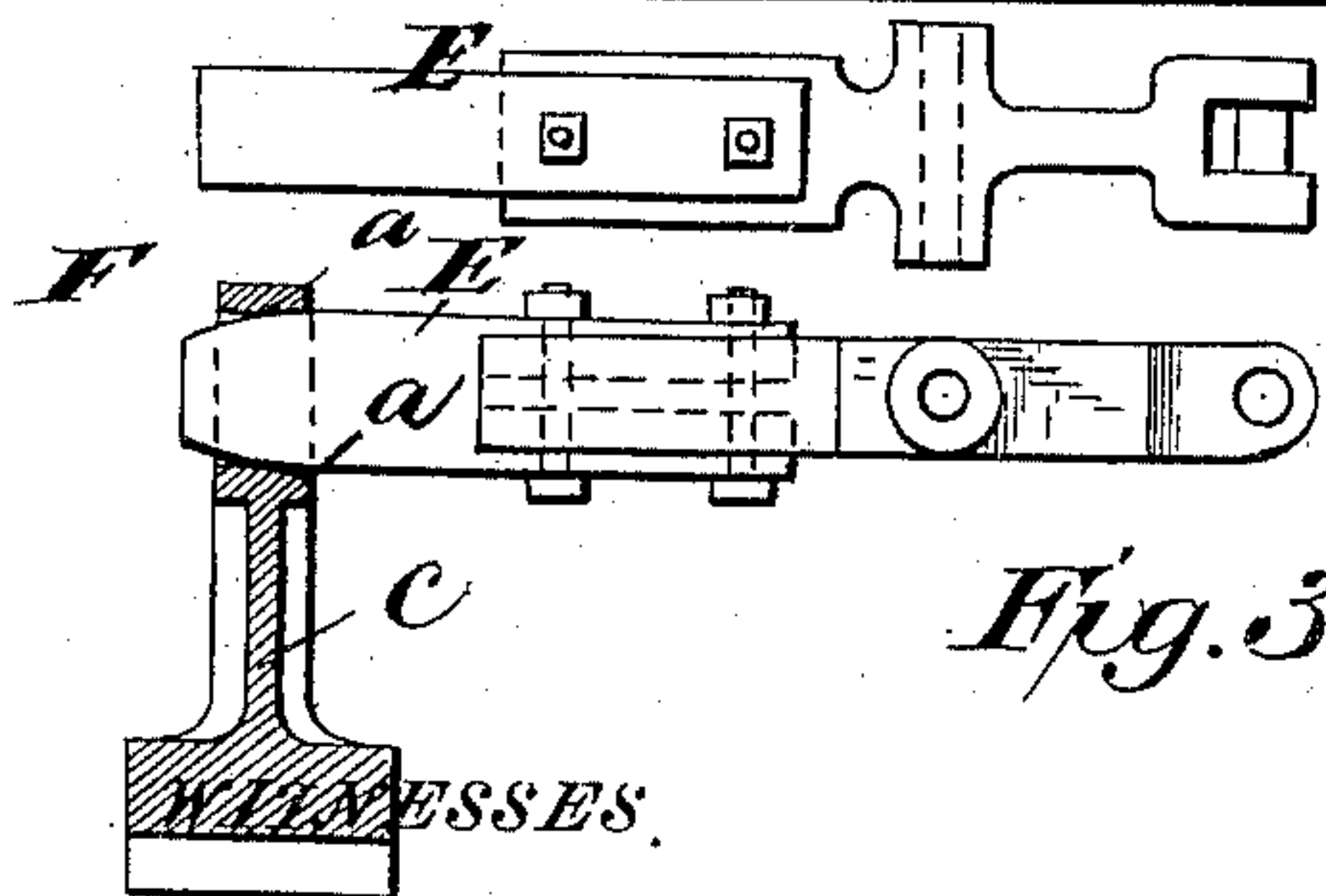
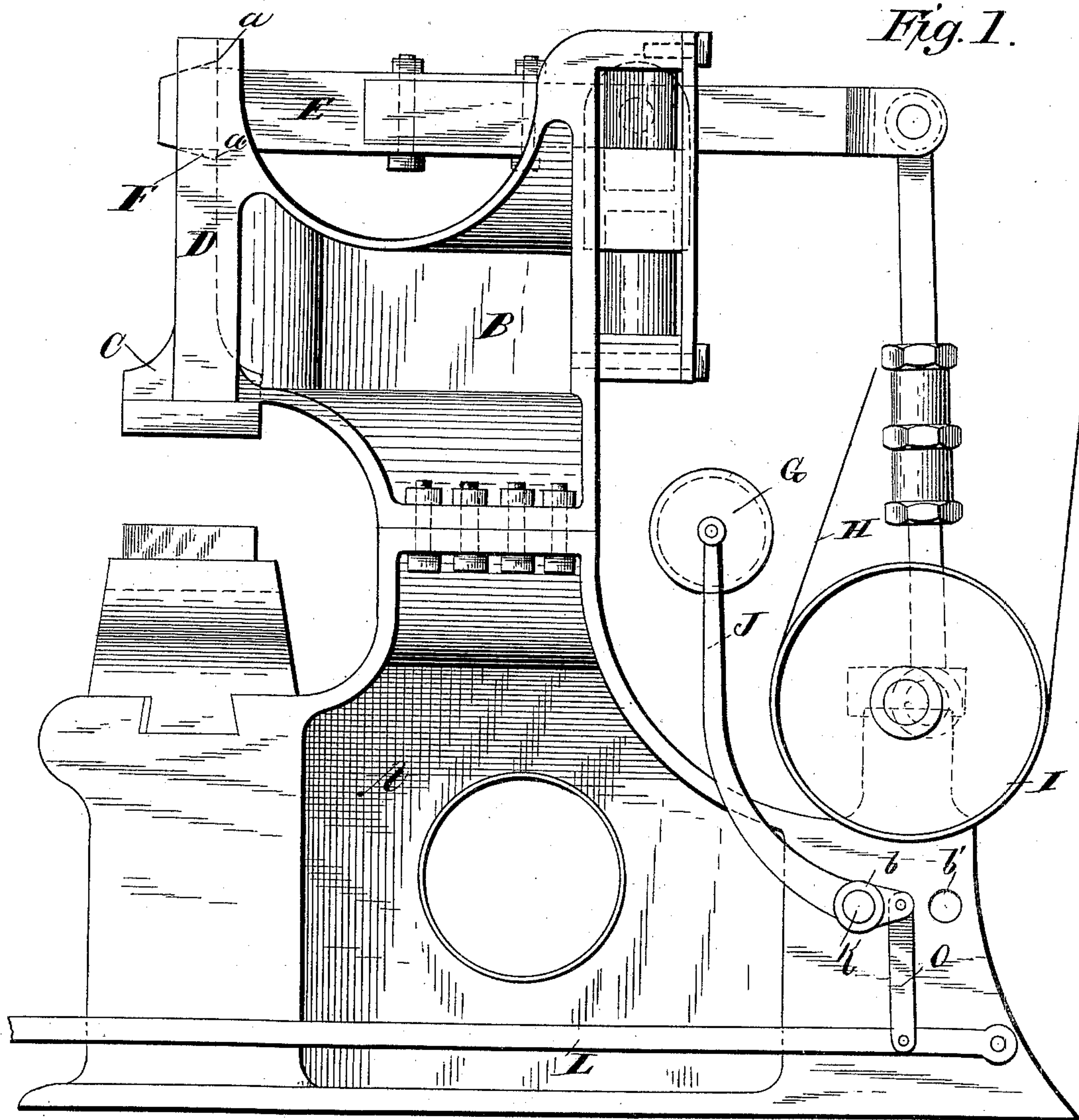


(No Model.)

W. R. JENKINS.
POWER HAMMER.

No. 466,790.

Patented Jan. 12, 1892.



F. L. Ourand.
H. M. Sterling

INVENTOR
William R. Jenkins
By S. W. Fursbach
Attorney

UNITED STATES PATENT OFFICE.

WILLIAM R. JENKINS, OF BELLEFONTE, PENNSYLVANIA.

POWER-HAMMER.

SPECIFICATION forming part of Letters Patent No. 466,790, dated January 12, 1892.

Application filed March 10, 1891. Serial No. 384,457. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. JENKINS, a citizen of the United States, and a resident of Bellefonte, in the county of Centre and State of Pennsylvania, have invented new and useful Improvements in Power-Hammers; and I do hereby declare the following to be a full, clear, and exact description of said invention, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in power-hammer, and is particularly designed as an improvement on the hammers forming the subject-matter of Letters Patent granted me, numbered, respectively, 237,782, 358,672, and 370,260.

The primary object of the invention is to so connect the oscillating helve of a power-hammer with the ram or hammer proper that a durable and efficient connection will be the result. Heretofore in the construction of hammers of this class the great difficulty has been to make a durable connection between the helve and the ram, and at the same time efficiently provide for the reciprocating movement of the ram in its vertical ways.

To carry out the object and obviate the difficulty above mentioned, I have devised the present invention, which consists in forming the ram or upper portion of the ram with an opening into which the end of the helve extends, the opening in the ram and the end of the helve being so formed as to permit the helve to change its position with relation to the ram in operating the same up and down in the vertical ways.

A further object of the invention is to provide means whereby the tightening-pulley may be changed from its position to bear on either side of the driving-belt, according to the direction in which the belt is traveling, and to this end I have provided in the frame of the hammer, below the driving-pulley, two bearings or holes into which the shaft or pivot of the pulley-carrying arm is inserted, the change from one bearing to the other being accomplished by reversing the pulley-carrying arm and the change of location of the pivot or shaft to the other bearing.

The invention further consists in certain

novel features in the construction and arrangement of parts, all as hereinafter explained.

Referring to the accompanying drawings, 55 Figure 1 represents a view in side elevation of a power-hammer in which the ram is operated in vertical ways by an oscillating helve. Fig. 2 represents a top or plan view of the oscillating helve. Fig. 3 represents a side view 60 of the helve connected with the ram, the ram being shown in section to show the loose connection between it and the helve. Fig. 4 represents a portion of the ram and helve, showing the relative position between the 65 same when in a lowered position.

The main portion of the power-hammer or frame on which the several parts of the invention operate, may be of any suitable form and construction, but, preferably, of the form 70 shown and described in the patents above referred to and of which a description in detail is unnecessary, as it comprises simply the lower portion A, which supports the anvil, and has the driving-pulley suitably mounted 75 thereon, and the upper portion B, having the vertical ways within which the ram operates, and a suitable cushioned or yielding bearing on which the valve oscillates. The ram C in the present instance, as is usual in 80 power-hammers of this type, is operated up and down between the vertical ways D by the oscillating movement of the helve E.

The manner of attaching the helve E to the ram C, in order to impart a vertical reciprocating movement to the ram by the oscillating or circular movement described by the helve, has heretofore met with many objections, and has only been overcome by forming a yielding connection, which, from its 90 construction, is not durable and only provides imperfectly for the change of motion from an oscillating to a true vertical movement.

The manner of connecting the ram C with 95 the helve E in the present invention consists in forming an opening F, preferably rectangular in general form, its upper and lower faces *a a'* being rounded off or flared out toward the inner face of the ram. The upper 100 and lower faces of the helve, at its end, are rounded off in conformity to the curved or rounded faces of the opening F. The helve E, where it enters the opening F, is a trifle

smaller than the opening and permits it to move readily within the opening in its oscillating movement without binding. The friction of the flared openings F and the rounded end of the helve, as will readily be seen by reference to Figs. 3 and 4, is to permit the helve to change its position within and to the ram, while making at all times a bearing sufficient for its perfect operation. By this construction the ram C is free to move up and down in its vertical ways, while the circular movement of the helve is not interrupted or retarded.

For the purpose of making a helve that will be durable in such a connection and easily removed when worn and replaced by a new one at a trifling expense, I have constructed the helve of hard wood and metal. The entering end of the helve forming the connection with the ram is of hard wood, securely fastened to the remaining portion of the helve, which is of metal, by bolts or other suitable means.

The second feature of my invention is the provision for changing the tightening-pulley G in order that it may bear on the driving-belt H on either side of the driving-pulley I. This is accomplished by forming below the pulley I or at other suitable location in the frame two holes or bearings *b* and *b'*. The pulley G is mounted on the end of the curved arm J, which is normally located on the left-hand side of the pulley I, and pivoted to the frame by the shaft or pivot K, within the bearing *b*. The arm J is held in close proximity with the belt H and operated by the treadle L through the link-arm O. When it is desired to apply the tightening or regulating pulley G to the belt on right-hand side of the wheel I by reason of a change in the direction of travel of the belt, the arm J is reversed and the shaft K inserted into the bearing *b'*, when the device is adapted for the change in travel of the belt.

Having now described my invention, what

I claim, and desire to secure by Letters Patent, is—

1. In a hammer of the character described, the loose connection between the oscillating helve and the ram adapted to move in vertical ways, the said connection being formed by the entrance of the helve into an opening within the ram, having its upper and lower faces inclined or rounded out, substantially as described.

2. In a hammer of the character described, the ram operated in vertical ways provided with an opening having inclining or rounded upper and lower faces, in combination with the oscillating helve having its upper and lower faces inclined or rounded off in conformity with those of the opening, substantially as described, and for the purpose set forth.

3. In a hammer of the character described, the combination of the vertical ram having the opening formed therein, substantially as described, and the oscillating helve provided with a hard-wood extension adapted to enter the opening in the ram and work thereon, substantially as described, and for the purpose set forth.

4. In a device of the character described, the frame provided with the holes or bearings formed therein at a suitable location to the driving-pulley and belt, the curved lever carrying the tightening-pulley and pivoted near its end in one of said holes or bearings, and the short arm of said lever being connected to the treadle by means of a link connection located between the two holes or bearings, substantially as described, whereby the tightening-pulley may be readily applied to either side of the belt.

In testimony whereof I affix my signature in presence of two subscribing witnesses.

WILLIAM R. JENKINS.

Witnesses

W. E. JENKINS,
J. H. LINGLE.