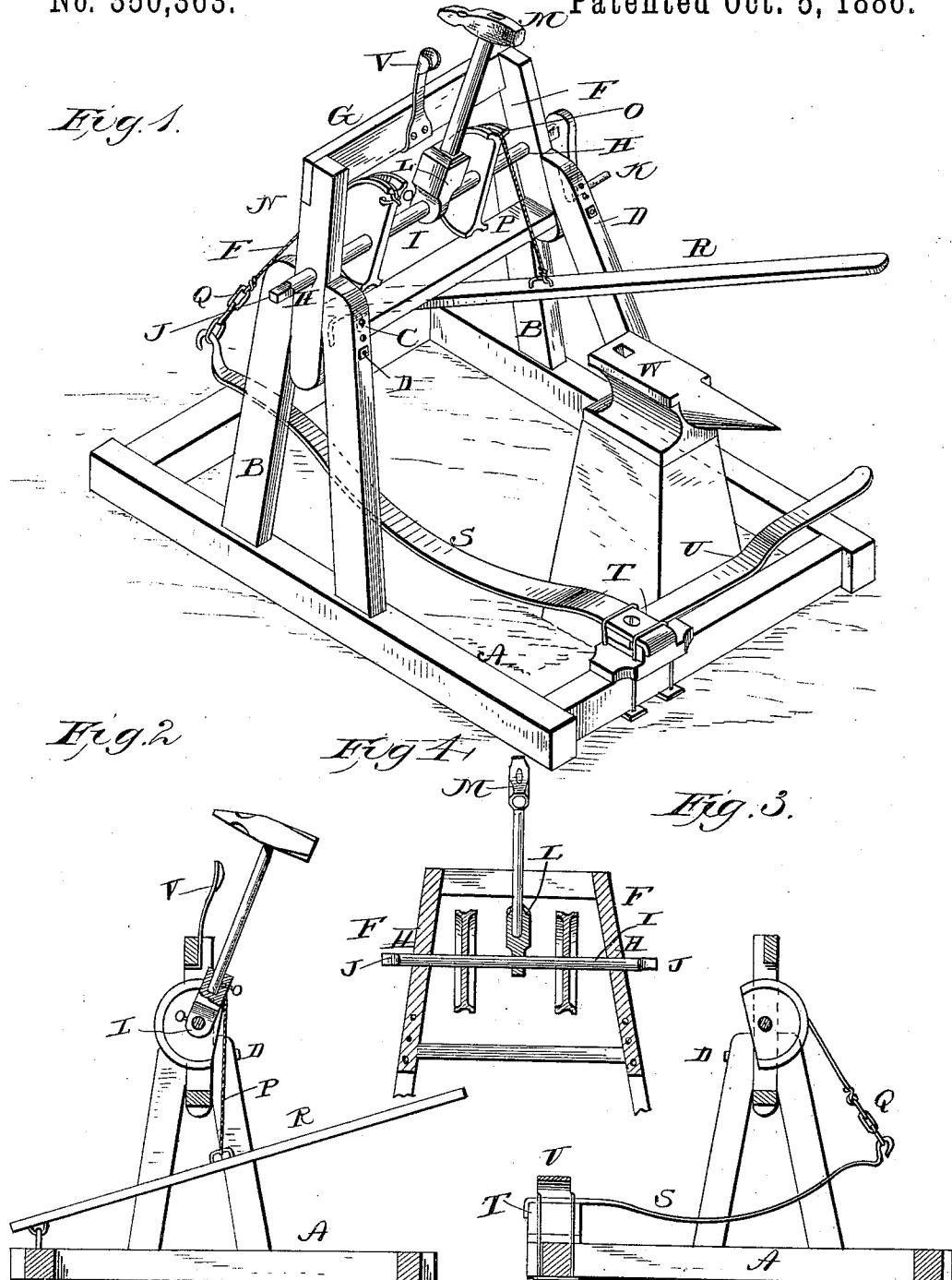


(No Model.)

M. HEADEN.
FOOT POWER HAMMER.

No. 350,363.

Patented Oct. 5, 1886.



WITNESSES

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UNITED STATES PATENT OFFICE.

MINNIS HEADEN, OF CHRISTIANSBURG, VIRGINIA.

FOOT-POWER HAMMER.

SPECIFICATION forming part of Letters Patent No. 350,363, dated October 5, 1886.

Application filed July 19, 1886. Serial No. 208,505. (No model.)

To all whom it may concern:

Be it known that I, MINNIS HEADEN, a citizen of the United States, and a resident of Christiansburg, in the county of Montgomery and State of Virginia, have invented certain new and useful Improvements in Foot-Power Hammers; 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, which form a part of this specification, and in which—

Figure 1 is a perspective view of my improved foot-power hammer, showing it in position. Fig. 2 is a longitudinal vertical sectional view of the same. Fig. 3 is a similar view looking in the opposite direction, and Fig. 4 is a transverse vertical section on a line 23 through the rock-shaft.

Similar letters of reference indicate corresponding parts in all the figures.

My invention has relation to that class of power-hammers in which the hammer is thrown down by depressing a treadle and raised by means of springs; and it consists in the improved construction and combination of parts of the same, as hereinafter more fully described and claimed.

In the accompanying drawings, the letter A indicates a rectangular base, to the middle of which four slightly-converging uprights, B, are secured to the side pieces of the frame. The upper ends of each of these two pairs of uprights are provided with transverse perforations C, through which pass removable bolts D, which pass through perforations in the vertical side pieces, F F, of a frame, G, the said side pieces converging toward their upper ends and having each a series of perforations.

The side pieces of this frame are formed with transverse bearings H H, in which a rock-shaft, I, is journaled, and this shaft is formed with polygonal ends J, to which a crank, K, may be attached. The middle of this shaft is formed with a socket, L, into the outer end of which the handle or helve of a hammer or sledge, M, is secured, and two semicircular grooved disks, N and O, are secured upon the shaft at both sides of the socket. Ropes or chains P and Q are secured at opposite ends of these semicir-

cular disks, passing over their grooved peripheries in opposite directions, and the end of one of these cords or chains is secured to a treadle or foot-lever, R, pivoted at its end to the rear end piece of the base-frame of the machine. The end of the other cord or chain, Q, is secured to the free end of a flat slightly-curved spring, S, the other end of which is secured to a block, T, upon the forward end piece of the base-frame, and a similar shorter spring, U, is secured to the same block at a right angle to the former spring, and has its free end projecting under the free end of the foot-lever. A spring, V, having a concave rounded upper end, is secured to the top piece of the adjustable hammer-frame, and serves as an abutment for the hammer when the latter is drawn up by the spring. The base-frame is placed in such a manner over the anvil W or other object upon which the hammer is to descend that the hammer will strike the same, when tilted down, and when the foot-lever or treadle is depressed the cord or chain attached to it will rock the shaft by means of the semicircular disk, throwing the hammer down upon the anvil, and when the foot is removed from the foot-lever or treadle, the flat slightly-curved spring under the said foot-lever will raise its free end, releasing the strain upon the cord or chain attached to it, and the long flat slightly-curved spring will draw down upon the cord or chain attached to it, having been drawn upward when the hammer was depressed, tilting the rock-shaft by means of the semicircular disk and raising the hammer, which will spring upward and strike the spring upon the top piece of the frame, which will thus cushion the force with which the hammer flies back, throwing the hammer forward, ready for another stroke. When it is desired, the hammer may also be worked by rocking the crank upon the end of the shaft. The frame carrying the rock-shaft may be raised or lowered between the ends of the converging uprights, and may be adjusted by means of the bolts, so that the hammer may strike a high or low anvil, or when the hammer is used for striking a drill or other similar object, which gradually is lowered or forced downward, the frame may be lowered to follow the object.

By using this machine a blacksmith may

strike up for himself with the foot, while shaping the iron with the small or hand hammer, and in drilling or similar work the operator may guide the drill with his hands while operating the hammer with the foot, one man being dispensed with in all cases.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

- 10 1. In a foot-power hammer, the combination of an upright frame having transverse bearings in its side pieces, a rock-shaft journaled in the bearings and provided with semi-circular grooved disks and with a socket for the reception of the hammer, a foot-lever or treadle pivoted with one end upon the rear end piece of the base-frame, and having a cord or chain secured to its middle and passed over one semicircular disk secured to one end of it, 15 a flat slightly-curved spring secured to the forward end piece of the base-frame, and having a cord or rope attached to its free end and passed over the other semicircular disk secured at the end of the same, and a flat slightly-curved spring secured at a right angle to the other spring and its free end extending under the free end of the foot-lever, as and for the purpose shown and set forth.
- 20 2. In a foot-power hammer, the combination of a rectangular base frame having two pairs of slightly-converging uprights secured to its side pieces, a frame having its converging side pieces secured adjustably by series of

perforations between the ends of the uprights upon detachable bolts, and having transverse 35 bearings in the said side pieces, a rock-shaft journaled in the bearings and having a socket at its middle and two semicircular grooved disks secured at both sides of the socket, and provided with a removable crank, a hammer 40 fitting with its handle in the socket, a flat upright spring secured to the middle of the top piece of the adjustable frame, and having a concave curved upper portion for the handle of the hammer, a foot-lever or treadle pivoted at one 45 end upon the rear end piece of the base-frame, and having a cord or chain secured to its middle and passing over one of the semicircular disks secured to one end of the same, a flat slightly-curved spring secured at one end to 50 the forward end piece of the base-frame, and having a cord or chain secured to its free end and passing over the other semicircular disk and secured to its end, and a flat slightly-curved spring secured at a right angle to the 55 rigid end of the other spring, and having its free end extending under the free end of the treadle, as and for the purpose shown and set forth.

In testimony that I claim the foregoing as 60 my own I have hereunto affixed my signature in presence of two witnesses.

MINNIS HEADEN.

Witnesses:

BENJAMIN THOMAS EDWARDS,
ALEXANDER HOPKINS.