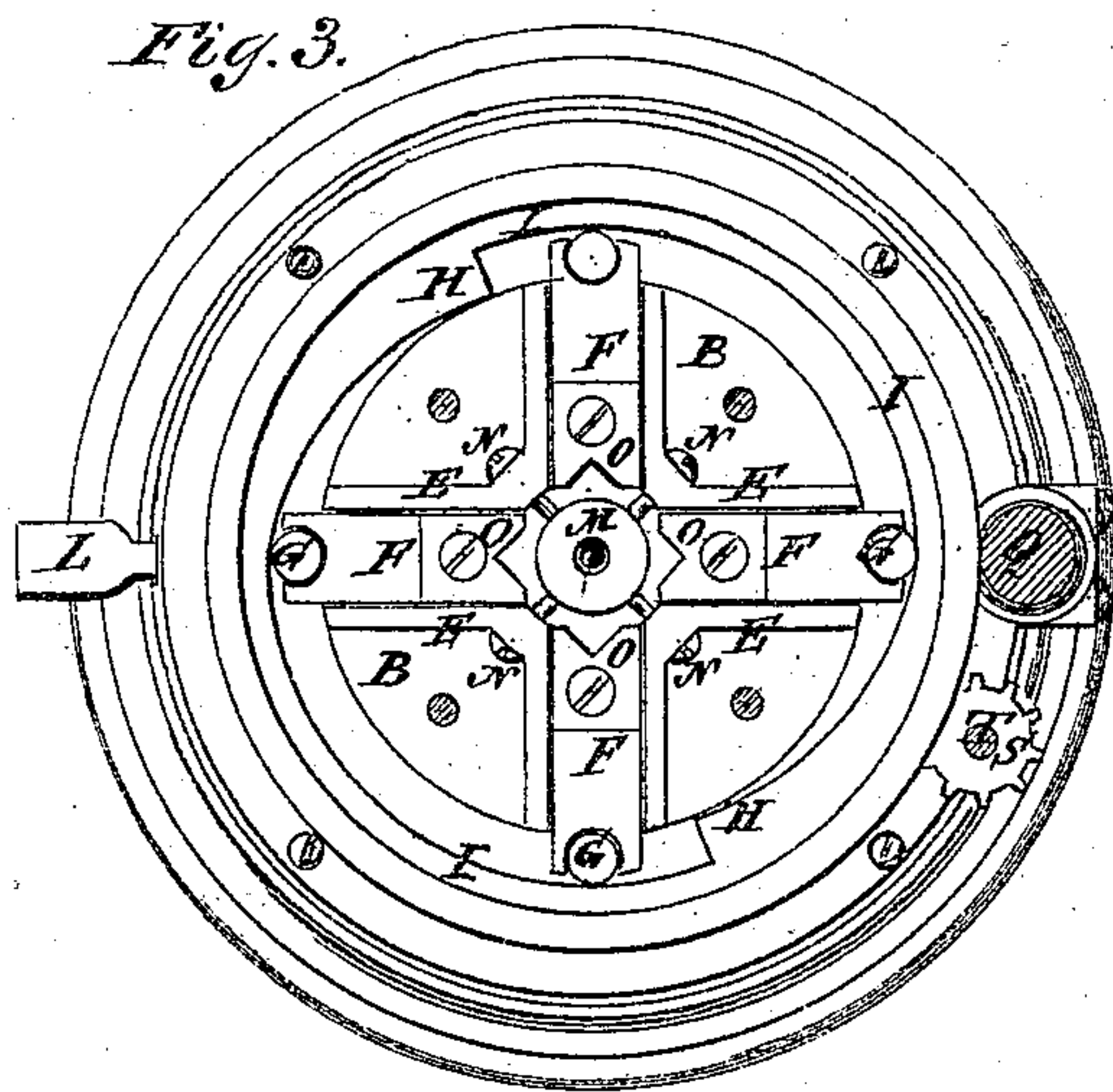
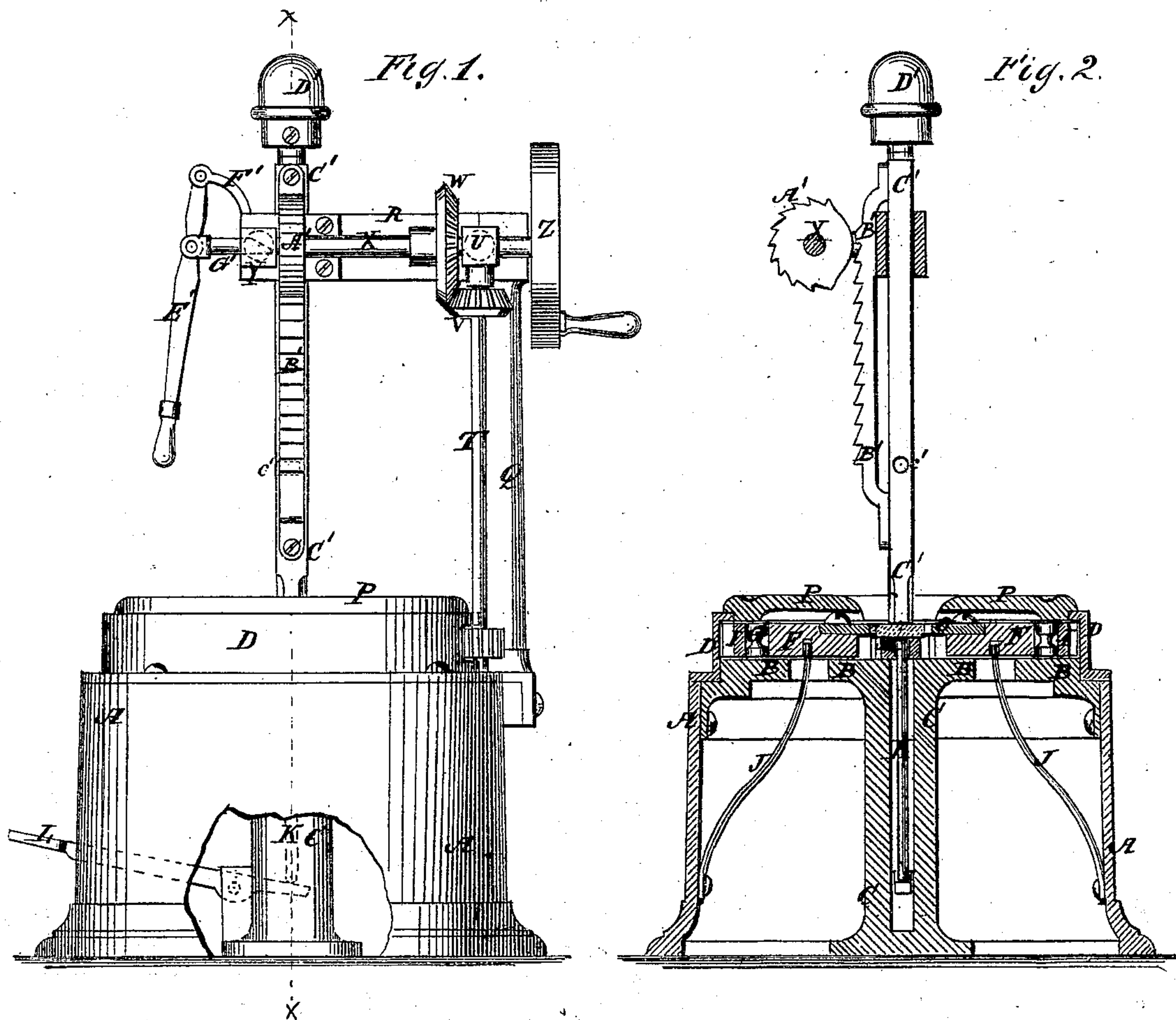


C. D. WILEY & M. S. NORTON.
 Improvement in Bolt-Heading-Machines.
 No. 128,083. Patented June 18, 1872



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UNITED STATES PATENT OFFICE.

CHARLES D. WILEY AND MASON S. NORTON, OF JUNCTION, MINNESOTA.

IMPROVEMENT IN BOLT-HEADING MACHINES.

Specification forming part of Letters Patent No. 128,083, dated June 18, 1872.

Specification describing a new and useful Improvement in Bolt-Heading Machine, invented by CHARLES D. WILEY and MASON S. NORTON, of Junction, in the county of Carlton and State of Minnesota.

Figure 1 is a side view of our improved machine. Fig. 2 is a detail vertical section of the same taken through the line *x x*, Fig. 1. Fig. 3 is a top view of the same, the top-plate or cover, and the standard and its attachments being removed.

Similar letters of reference indicate corresponding parts.

Our invention has for its object to furnish an improved bolt-heading machine simple and compact in construction, convenient in use, and effective in operation; and it consists in the construction and combination of certain parts of the machine, as hereinafter more fully described.

A is the stand of the machine, which is made in the form of a short hollow cylinder. B is the bed-plate of the machine, which is made with a downwardly-projecting flange around its outer edge, which fits into and is securely bolted to the upper end of the cylindrical stand A. The central part of the bed-plate B that sustains the blows of the hammer is supported by a pedestal, C, which may be cast solid with said bed-plate, if desired. The edge of the bed-plate B is rabbeted, as shown in Fig. 2, to form a seat for the casing D, the flanged lower edge of which is securely bolted to said seat. To the upper side of the bed-plate B are attached or upon it are formed four right-angled flanges, E, which are arranged with their angles toward the center, so as to form four radial grooves or channels to receive the headers F. To the outer ends of the headers F are pivoted small friction wheels or rollers G, to diminish the friction when the said headers are forced forward by the cams or inclines H, which are formed upon or attached to the inner or concave side of the ring or wheel I, which has teeth formed upon its outer or convex side, and which slides around upon the outer part of the bed-plate B. The outer side and upper edge of the gear-wheel I are covered by the casing D, to hold it down to its place and to protect it from dirt, scales from the iron, &c. Two cams H are used, which

cams are arranged directly opposite each other, so that two opposite headers, F, will always be operated at the same time, the other two remaining stationary. The headers F are moved back when released from the cams H, by which they were forced forward by the springs J, the lower ends of which are secured to the inner sides of the stand A, and the upper ends of which pass up through slots in the bed-plate B and enter holes in the lower sides of the headers F, as shown in Fig. 3. The pedestal C is perforated longitudinally to receive the body of the bolt to be headed, and to receive the rod K, by which the said bolt is raised when finished. The lower end of the rod K rests upon the inner end of the foot-lever L, which passes in through a slot in the stand A and a slot in the pedestal C, and is pivoted to lugs or brackets formed upon or attached to said pedestal. M is the die upon which the head of the bolt rests while being formed, and which rests upon the center of the bed-plate B. The die M is perforated to receive the body of the bolt upon which the head is to be formed, and is adjustably secured in place by screws N passing through the angle of the angular flanges E. To the forward ends of the headers F are secured the dies O, by which the corners of the bolt-heads are formed. P is the top plate or cover, which fits upon the upper edges of the angular flanges E and overlaps the top of the casing D, to keep the headers F in place, and prevent dirt, scales from the iron, &c., from getting in among the operating parts of the machine. To one side of the stand A is attached the lower end of a standard, Q, to the upper end of which is attached or upon it is formed a horizontal arm, R, which is made of such a length as to extend a little beyond the center of the machine. S is a small gear, one side of which projects through a slot in the casing D and meshes into the teeth of the gear-wheel I, that carries the cams H. The gear-wheel S is attached to a vertical shaft, T, the lower end of which revolves in a socket in the upper edge of the stand A. The upper end of the shaft T revolves in bearings in an arm or bracket, U, attached to the horizontal arm R. To the upper part of the shaft T is attached a bevel-gear wheel, V, the teeth of which mesh into

the teeth of the bevel-gear wheel W attached to the horizontal shaft X. The shaft X revolves in bearings in the arms or brackets U Y attached to the horizontal arm R, and to its outer end is attached a pulley or crank-wheel, Z, to receive the power. To the shaft X, near its other end, is attached a segmental gear-wheel, A', the teeth of which mesh into the teeth of the rack-bar B', the ends of which are bent back and are bolted to the upper and lower parts of the drop-bar or hammer C', so that the said rack-bar B' may move up and down upon the outer side of the bar or arm R, while the hammer C' moves up and down through a guide-hole or slot in said arm R. To the upper end of the drop-bar or hammer C' is attached a weight, D', which is detachable, so that it may be detached and replaced with a heavier or lighter one, according to the character of the work to be done. E' is a lever, the upper end of which is pivoted to a bracket, F', formed upon or attached to the outer end of the arm R. To the lever E', directly opposite the center of the end of the arm R, is pivoted the outer end of a pin, G', which passes in through a hole in the center of the end of the arm R to enter a hole, c', in the side of the hammer C', to hold the said hammer raised and prevent it from dropping when the blank

space of the segmental-gear wheel A' comes opposite the teeth of the rack-bar B'. The forward end of the pin G' is made tapering or inclined, and the hole c' in the side of the hammer C' is made in such a position that the point of the pin G' may enter the said hole just as the hammer has been raised as high as it can be by the segmental-gear wheel A, so that the taper or inclination of the forward end of the pin G' may raise the hammer C' so far that the teeth of the gear-wheel A' will clear the teeth of the rack-bar B'.

The gearing of the machine should be so constructed that the cams H will work the pairs of headers F alternately with respect to each other and with respect to the hammer C'.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

The hand-lever E' F', provided with pivoted and inclined pin G', in combination with apertured hammer C, arm R, rack B', and wheel A', as and for the purpose described.

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