

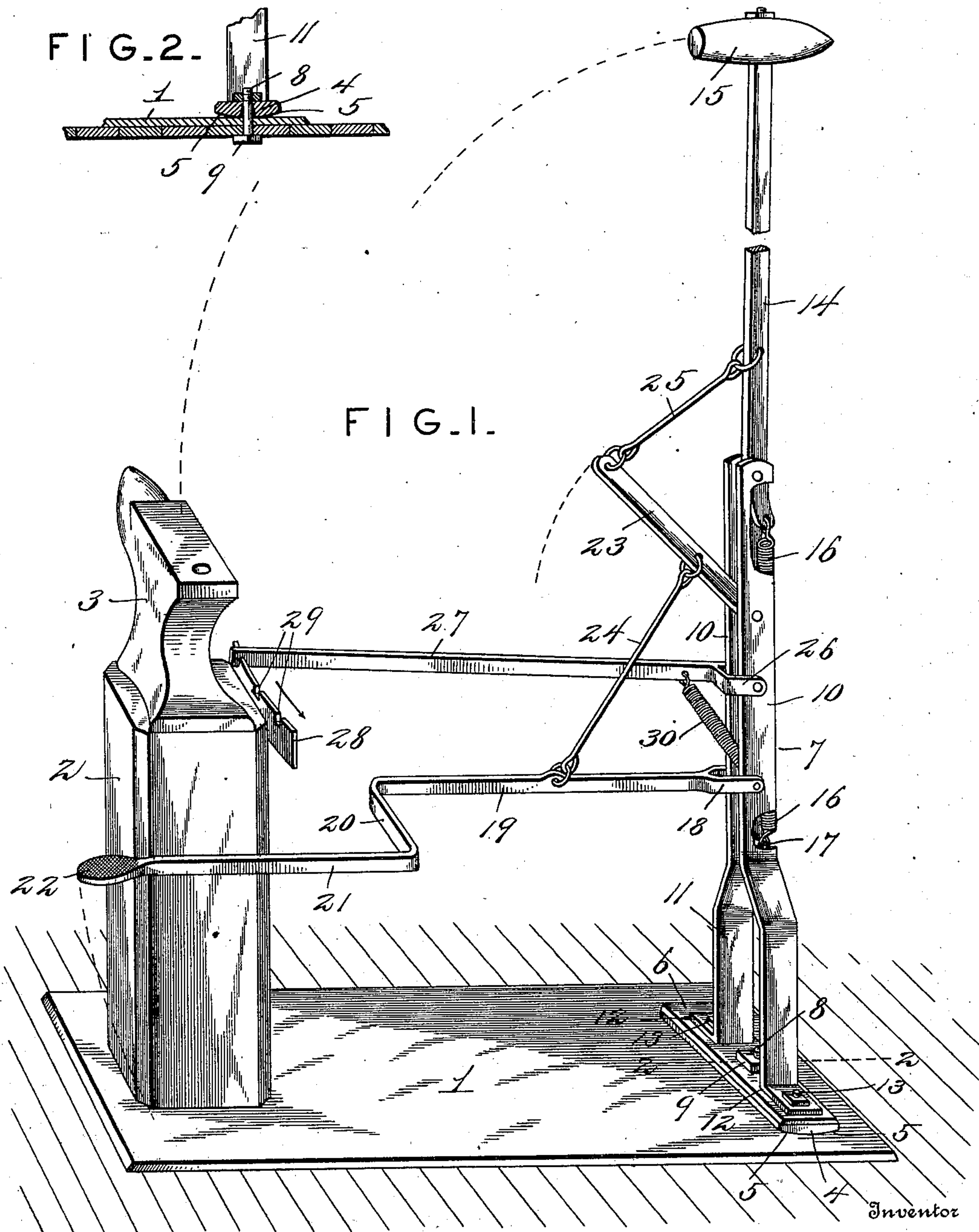
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C. JEWELL.
BLACKSMITH'S FORGING HAMMER.

APPLICATION FILED JULY 8, 1902.

NO MODEL.



Witnesses

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BLACKSMITH'S FORGING-HAMMER.

SPECIFICATION forming part of Letters Patent No. 724,294, dated March 31, 1903.

Application filed July 8, 1902. Serial No. 114,823. (No model.)

To all whom it may concern:

Be it known that I, CORNELIUS JEWELL, a citizen of the United States, residing at Walled Lake, in the county of Oakland and State of Michigan, have invented new and useful Improvements in Blacksmiths' Forging-Hammers, of which the following is a specification.

This invention relates to a foot or blacksmith's forging-hammer; and the object of the same is to provide a mechanical striker for blacksmiths' use adapted to be operated by the foot and embodying a sledge-hammer to replace the ordinary blacksmith's helper and arranged to strike quick light blows or slow heavy ones at the will of the operator and embodying adjusting means whereby the sledge-hammer may be caused to engage with different portions of an anvil with which it co-operates.

The invention consists in the construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

In the drawings, Figure 1 is a perspective view of a foot-hammer embodying the features of the invention. Fig. 2 is a section on the line 2 2, Fig. 1, showing a fulcrum or pivot connection for the hammer-support.

Similar numerals of reference are employed to indicate corresponding parts in both views.

The numeral 1 designates a bed-plate having an anvil-block 2 rising from one end thereof, on which is disposed an ordinary anvil 3. Near the opposite end of the bed-plate 1 a fulcrum-bar 4 is disposed thereon and has the under portion adjacent to the side edges cut away to form upwardly-curved bevels 5. On the fulcrum-bar 4 is a securing-plate 6, from which rises a standard 7, and passing centrally through the plate 6 and bar 4 and also through the bed-plate 1 beneath is a fulcrum or pivot-bolt 8, having a nut 9 on the upper end thereof bearing against the plate 6. Through the medium of this fulcrum or pivot-bolt 8 the fulcrum-bar, the plate 6 secured thereto, and the standard 7 are adapted as a whole to be turned upon the pivot-bolt 8 in opposite directions on the bed-plate 1, the pivotal connection being loose enough to permit the fulcrum-bar and plate 6, as well

as the standard, to have a slight rocking movement to compensate for the rebound and vibration of the sledge-hammer held by the standard in a manner which will be presently set forth. This compensating movement of the fulcrum-bar 4, plate 1, and standard 7 is allowed to ensue in view of the undercurved bevels 5 of the bar, and bending and breaking strain is removed from the fulcrum or pivot-bolt 8. The fulcrum-bar and plate 6 are firmly secured to each other and with the standard are adapted to be moved in opposite directions over the surface of the bed-plate 1 in accordance with the adjustment of the sledge in relation to the anvil 3.

The standard 7 comprises opposite upright bars 10, which are spaced apart from each other and have their lower extremities 11 laterally deflected and terminating in lower angular feet 12, which rest flat against the upper surface of the securing-plate 6 and are attached to the latter and to the bar by means of bolts and nuts 13. Between the upper ends of the bars 10 a helve-bar 14 is pivotally mounted and has a head 15 secured on the upper end thereof, the said helve-bar and head forming a sledge-hammer of the usual pattern employed by blacksmiths or others for forging purposes. The lower end of the helve-bar 14 extends below the pivotal connection for said bar and has the upper end of a retractile spring 16 secured thereto, said spring passing downwardly between the upright bars 10 and secured at a lower point to a cross pin or bolt 17 engaging the said bar 10. The spring 16 is strong enough to cause the sledge-hammer which it controls to return to normal upright position, as shown by Fig. 1, when the operating pressure on the remaining elements of the organization has been relieved therefrom.

At a point slightly above the outwardly deflected or bent extremities 11 of the upright bars 10 the rear yoked end 18 of a treadle 19 is pivotally attached to the said upright bars, the treadle-bar being bent at an angle, as at 20, to project it laterally for free vertical reciprocation adjacent to one end of the anvil-block 2. This treadle has a forwardly-projecting member 21, which passes beyond the anvil-block at one side thereof and terminates in a front enlarged foot-receiving member 22,

having its upper surface slightly roughened for obvious reasons. Above the point of attachment of the treadle 19 to the standard a pull-bar 23 is pivotally mounted at its rear end, between the upright bars 10 and is connected at an intermediate point by a loosely-attached link-rod 24 to the said treadle in rear of the angular or lateral bend of the latter, the forward end of the pull-bar 23 being also connected by a loose link-bar 25 to the helve-bar 14. Between the points of attachment of the rear ends of the treadle 19 and the pull-bar 23 to the standard the rear yoked end 26 of an adjusting-bar 27 is also pivotally connected to the upright bars 10 and has its front free end in adjustable engagement with a retainer 28, secured to the upper portion of the rear side of the anvil-block 2 and formed with a plurality of notches 29 in the upper edge thereof. To hold the adjusting-bar 27 downwardly in normal position and prevent it from becoming disengaged from the retainer 28, a spring 30 is secured thereto and to the standard at a point in the latter below the point of attachment of the rear end of said adjusting-bar.

In actuating the sledge-hammer the operator while standing in front of the anvil-block 2 and anvil 3 places his foot on the front free extremity of the treadle and presses downwardly on the latter. This downward pressure exerts a pull through the link-rod 24 on the pull-bar 23, and in view of the connection between the pull-bar and the helve-bar the sledge-hammer is forcefully drawn downward and caused to strike the anvil 3, the force with which the sledge 15 strikes the anvil being regulated by the downward pressure imparted to the treadle 19. The sledge-hammer is moved downwardly against the resistance of the spring 16, and a relaxation of the pressure on the treadle will permit the said spring to operate and throw the sledge-hammer upwardly, as shown, and at the same time raise the treadle for further depression. This operation can be rapidly carried on in succession as long as it is desired to use the forging pressure of the sledge-hammer. When it is required that the point at which the sledge-hammer shall strike the anvil shall be changed, the adjusting-bar 27 is raised against the resistance of the spring 30, and the standard 7, together with the bar 4 and plate 6, are correspondingly turned or swung around on the fulcrum or pivot-bolt 8, and the said bar 27 is then permitted to enter another one of the notches 29. It is obvious that the notches can be increased in number and thereby vary the degree of adjustment of the device to increase its range of operation in relation to an anvil or other analogous device.

The pull-bar 23 is an efficient auxiliary in the organization of elements set forth in view of the fact that the helve-bar 14, to which it is attached, is operated in a positive manner

and is permitted to have greater freedom in contradistinction to the operation that would result if a direct rigid or even a link connection existed between the treadle 19 and the said bar 14. The use of the pull-bar 23, between and connected to the helve-bar 14 and treadle 19 by the links 24 and 25, also imparts greater power to the downward throw of the helve-bar and the hammer-head thereon toward the anvil, and, moreover, the connections set forth between the lever and helve-bar permit the latter to be more sensitively controlled in its approach toward the anvil. Furthermore, the strain on the several cooperating parts, including the treadle and the helve-bar, is materially reduced when said parts return to normal position through the action of the spring 16.

The improved hammer has been shown applied in connection with an anvil; but it will be understood that it may be equally well used with other devices. Furthermore, changes in the proportions, dimensions, and minor details may be resorted to without in the least departing from the spirit of the invention.

Having thus fully described the invention, what is claimed as new is—

1. In a hammer of the class set forth, the combination with a support having means thereon for holding work, of a retainer secured to said support, a vertically-disposed pivotally-mounted standard, a hammer movably mounted in the upper portion of the said standard, a pull-bar pivotally mounted in the standard, a treadle pivoted to the standard, a link loosely attached to the pull-bar and hammer-helve, a link loosely connected to the treadle and pull-bar, and an adjusting-bar also pivotally connected to the standard and movably engaging the retainer, the hammer and adjusting device having springs attached thereto.

2. In a hammer of the class set forth, the combination with a base-support having means disposed thereon for holding work, an upright having a lower fulcrum-bar secured thereto and formed with opposite upwardly-curved bevels at the under portion of the sides thereof, a single connecting device between the support and the fulcrum-bar and a part of the upright secured to said fulcrum-bar, a retainer pivotally secured to the upright and adjustable in relation to a portion of the work-holding means, a hammer movably mounted in the said upright, a treadle connected to the hammer to throw it downwardly against the means for holding the work, and means for returning the hammer and treadle to normal position.

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

CORNELIUS JEWELL.

Witnesses:

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