H. DALITZ.

GRIPPING AND PULLING TOOL.

APPLICATION FILED MAY 16, 1921.

1,422,185.

Patented July 11, 1922.

Fig. 1

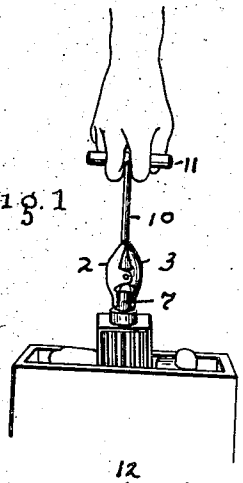


Fig. 3

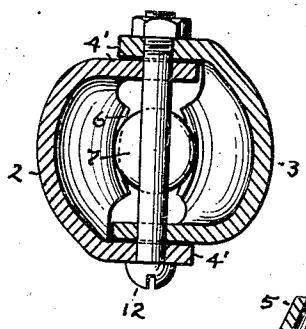


Fig. 2

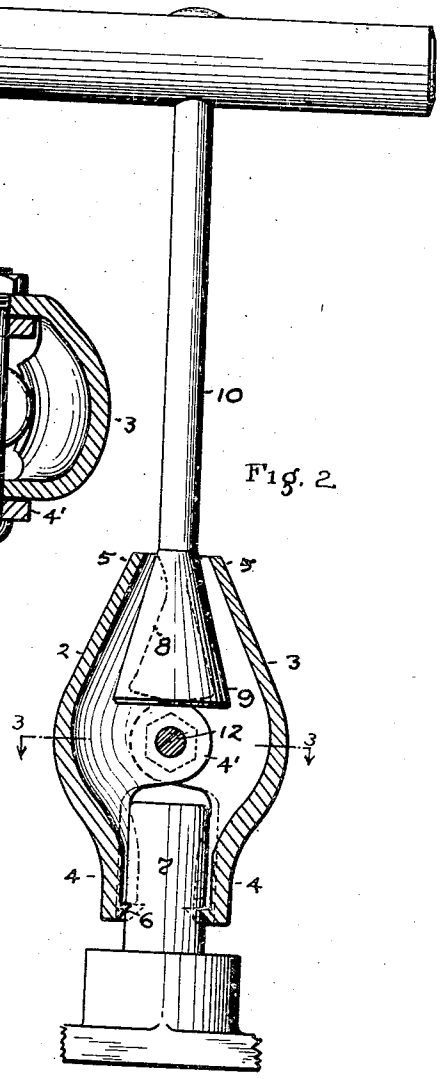


Fig. 4

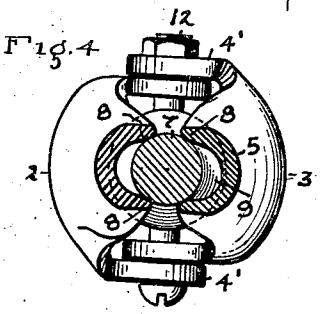
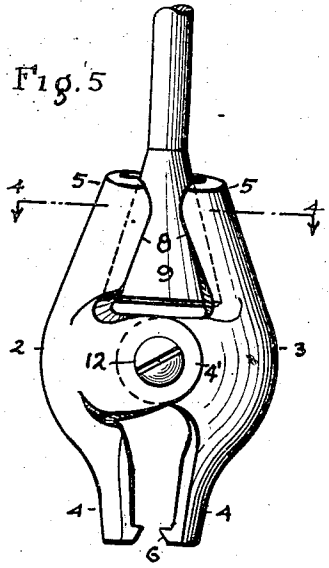


Fig. 5



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UNITED STATES PATENT OFFICE.

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GRIPPING AND PULLING TOOL.

1,422,185. Specification of Letters Patent. Patented July 11, 1922.

Application filed May 16, 1921. Serial No. 470,052.

To all whom it may concern:

Be it known that I, HARRY DALITZ, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in a Gripping and Pulling Tool, of which the following is a specification.

This invention comprises a simple form of gripping and pulling tool which is especially useful in pulling and lifting battery cells from their casings or receptacles. Thus, in Fig. 1 of the accompanying drawing, I show a perspective view of my improved device in pulling connection with one of the cells of a storage battery. Fig. 2 is an enlarged side elevation and sectional view of my device in gripping engagement with a battery lug. Fig. 3 is a horizontal section on line 3—3, of Fig. 2 on the pivot line of the clamping members of the tool. Fig. 4 is a cross section on line 4—4, Fig. 5, showing the curved formation of the spreader fingers. Fig. 5 is a side elevation of the tool with the upper handle portion broken away.

The tool comprises two clamping members 2 and 3 which are counterparts or made in duplicate by stamping or pressing a heavy sheet metal blank into a semi-globular body having parallel ears 4′ at opposite edges thereof approximately midway between semi-circular end portions of reduced size and cross section to provide a gripping jaw 4 and a spreading finger 5 at the opposite ends of each counterpart member. The extremity of jaw 4 has a sharp inwardly-extending tooth or flange 6 of circular outline to permit an effective grip to be obtained upon the lead projection or lug 7 of a battery cell, and the fingers or upper ends 5 taper and are substantially semi-circular in cross section to provide opposed sloping contact edges 8 adapted to ride and bear against the sides of an acute cone 9 which is affixed to or forms part of the shank 10 of a handle 11. A pivot bolt 12 passes through the ears 4′ of the respective clamping members 2 and 3 when these counterpart members are assembled together with the ears in offset relation as shown in Figs. 3 and 4. When assembled the respective jaws 4 and the converging ends or fingers 5 line up centrally opposite each other, and to that end one ear on each member is situated more remotely from the center line than the other ear. The pivotal movement of the two clamping members in respect to each other and the cone is necessarily limited, and the cone cannot be withdrawn from between the fingers or extensions 5 although held relatively loosely therein, while the pivot bolt 12 limits the movement of the cone downwardly. When an upward pull is imparted to handle 11 the cone 9 will engage the four bearing or contacting edges 8 of the two clamping members and cause the extensions 5 to spread apart which in turn brings the clamping jaws 4 together. The gripping effect of jaw 4 increases proportionately with the pull or load, and it is an easy and quick proceeding to engage a battery lug with this tool and pull and lift a battery cell from its casing as illustrated in Fig. 1. The cone is free to turn within the clamping members in applying, removing or carrying the load and without releasing or affecting the gripping action of the jaws.

What I claim is:

1. A gripping and pulling tool, comprising a pair of pivoted clamping members having gripping jaws and opposed spreading portions of semi-circular cross section, and a handle having a conical spreading member interposed and confined between said opposed portions.

2. A gripping and pulling tool, comprising a pair of counterpart clamping members having ears and a pivot bolt extending through said ears and uniting said members together, each member having a jaw with a sharp tooth and embodying an inclined extension curved in cross section to provide opposed sloping bearing edges, and a handle having a stem provided with a conical enlargement confined between said extensions in sliding engagement with the said bearing edges of both extensions.

3. A gripping and pulling tool, comprising a pair of counterpart members having gripping jaws and spreading extensions and a pivot connection, and a handle having a conical spreading member rotatably and slidably engaged with said extensions above said pivot connection.

Signed at Cleveland, in the county of Cuyahoga, and State of Ohio, this 26 day of March, 1921.

HARRY DALITZ.