

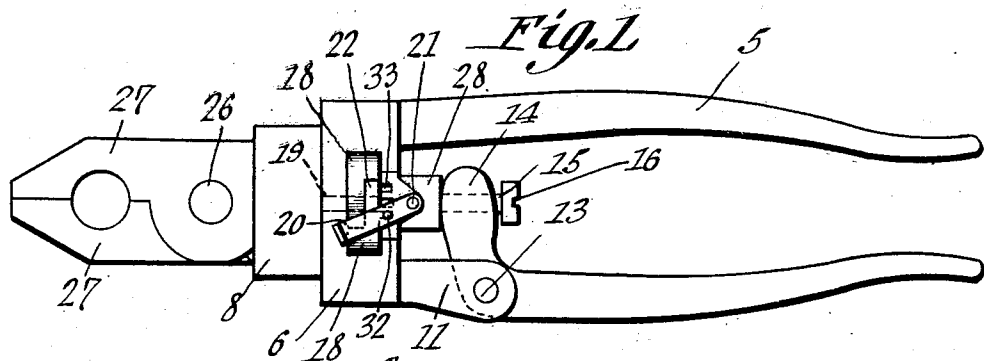
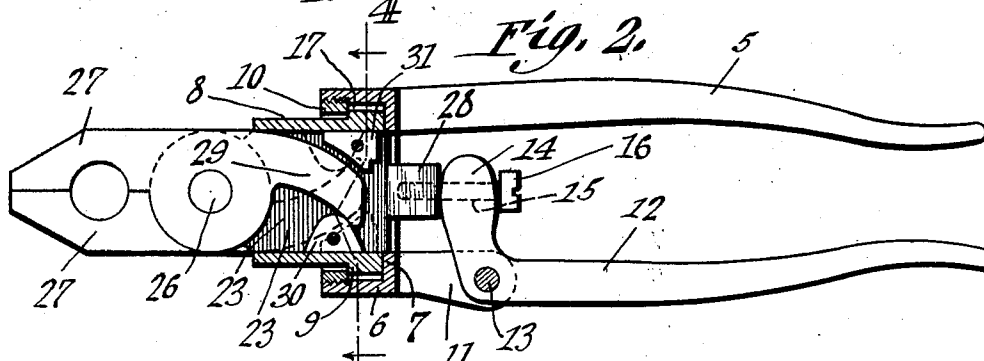
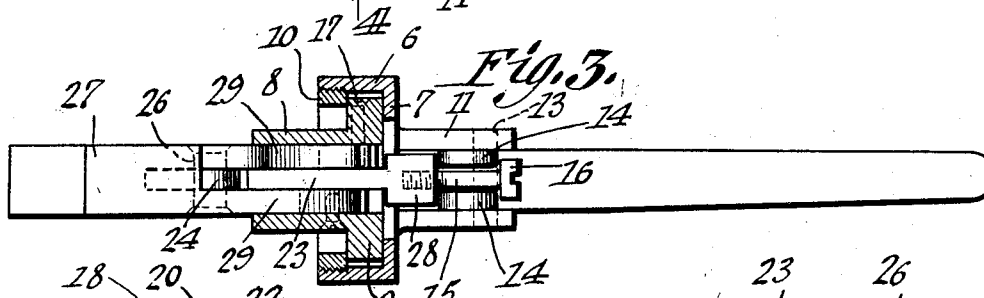
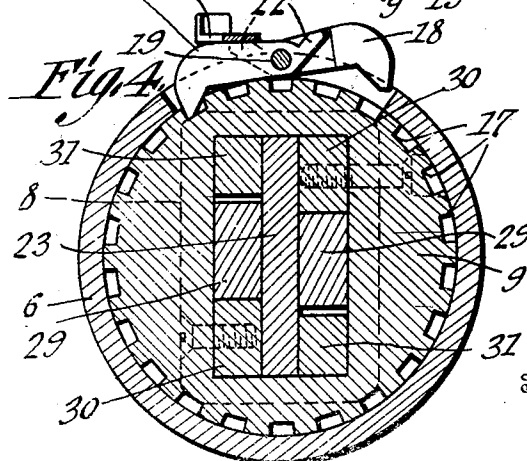
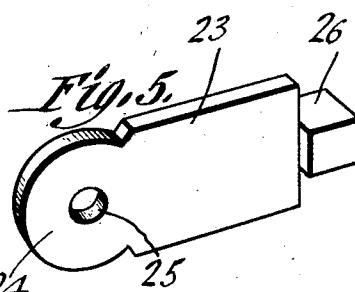
Sept. 9, 1924.

C. E. NORTHUP

1,507,974

RATCHET PLIERS

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UNITED STATES PATENT OFFICE.

CHARLES E. NORTHUP, OF PHILMONT, NEW YORK.

RATCHET PLIERS.

Application filed December 10, 1923. Serial No. 679,689.

To all whom it may concern:

Be it known that I, CHARLES E. NORTHUP, a citizen of the United States, residing at Philmont, in the county of Columbia and State of New York, have invented new and useful Ratchet Pliers, of which the following is a specification.

This invention relates to tools, and more particularly pliers, the primary object of the invention being to provide pliers which may be held in gripping relation with an article, and at the same time rotated for positioning nuts or the like, eliminating the necessity of the operator moving his hands from the tool to accomplish the rotation thereof.

Another object of the invention is to provide means for adjusting the jaws of the tool with respect to their support to increase the leverage of the handle sections of the tool.

Another important object of the invention is to provide a tool of this character wherein the jaws are formed independently of the handle sections, whereby the jaws may be readily and easily removed and repaired when worn or otherwise rendered inoperative.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, may be made within the scope of what is claimed, without departing from the spirit of the invention.

Referring to the drawing:

Figure 1 is a side elevational view of a tool constructed in accordance with the invention.

Figure 2 is an elevational view thereof, parts thereof being shown in section to illustrate the fingers of the jaws.

Figure 3 is a plan view of the tool, portions thereof being shown in section.

Figure 4 is a sectional view taken on line 4—4 of Figure 2.

Figure 5 is a perspective view of the jaw support.

Referring to the drawing in detail, the reference character 5 designates one of the handle sections of the tool which is formed with a head 6 at one end thereof, the head

being circular in formation and provided with an inwardly extended annular flange 7 providing an abutment for one end of the housing 8 which is also formed with a flange member 9. The inner wall of the head 6 is threaded to accommodate the securing ring 10 which is threaded and adapted to engage one edge of the flange member 9 to hold the housing 8 in position within the head.

Arms 11 extend rearwardly from the housing and provide a support for the handle section 12 which has pivotal connection therewith at 13. This handle 12 is formed with inwardly extended spaced ears 14 between which the screw 15 is positioned, the head 16 thereof contacting with the ears 14 for purposes to be hereinafter more fully described.

The flange 9 is formed with teeth 17 that are designed to be engaged by the pawls 18 which are mounted in the head, at 19, which pawls are held to their active positions by means of the spring arm 20 pivotally mounted on the head at 21 so that the spring arm may be moved from a position as shown by Figure 4 wherein one of the pawls is raised and the other pawl lowered, to engage the opposite pawl to force the same to its active position.

Each pawl is formed with an upwardly and rearwardly extended finger 22, which is engaged by the spring arm when the spring arm is moved into engagement with one of the pawls to force it to its active position. Due to the construction of the finger, the opposite pawl is elevated to disengage the teeth. It will thus be seen that by moving the spring arm 20 to a position directly over the pivot 19, both pawls will be depressed or moved to their active positions.

As the handle sections are rotated, it is obvious that the head thereof will, through its pawls 18, rotate the housing 8. Extending into the housing 8 is a supporting member indicated at 23, which is formed with a head 24 apertured as at 25 to receive the pivot pin 26 that supports the jaws 27 on opposite sides of the head 24. At the rear end of the member 23, is a block 28 formed with a threaded opening to receive the screw 15 so that the member 23 may be adjusted longitudinally of the handle sections 5 and 12.

The jaws 27 are formed with rearwardly curved fingers 29 that are designed to engage

the cams 30 secured to the inner surface of the housing 8, so that as the member 23 is moved longitudinally of the housing, the fingers 29 will be moved with respect to each other to cause the outer ends or gripping portions of the jaws to move towards each other to grip an article therebetween.

Guide blocks 31 are also secured within the housing and act to guide the fingers 29 in their movements. In order that the pawls will be securely held by the spring arm 20, an enlargement 32 is provided on the arm which enlargement is adapted to engage within notches 33 formed in the head 6 to hold the arms 20 in selective positions.

In the use of the device, the jaws 27 are moved to their open positions, by moving the handle sections 5 and 12 away from each other, whereupon the jaws are positioned over a nut, bolt or the like under operation, whereupon the handle sections are moved towards each other, forcing the supporting member 23 outwardly and causing the fingers 29 to move over the cams 30 to the end that the jaws 27 closely grip the article under operation.

If it is desired to rotate the article as to position a nut or the like, the handles are moved to engage the article and the pawls to engage the teeth 17 to rotate the jaws.

I claim:

1. In a tool, a pair of handle sections, a head formed on one end of one handle section, a housing rotatably mounted within the head, a pair of jaws, means extending through the housing for supporting the jaws, one of said handle sections having pivotal connection with the head, means for supporting the last mentioned handle section and jaw supporting means, whereby movement of the handle will cause the jaws to move through the housing, and means in the housing cooperating with the jaws for moving the jaws with respect to each other.

2. In a tool, handle sections, a head formed at one end of one handle section, a housing having teeth, supported within

the head, pawls supported by the head and adapted to engage the teeth for rotating the housing, pivoted jaws mounted within the housing, and means controlled by the movement of one handle section for controlling the movement of the jaws.

3. In a tool, handle sections, one of said handle sections having a head, a housing removably supported in the head, said head adapted to rotate around the housing, means carried by the head and engaging the housing, for moving the housing with the head, jaws supported within the housing, and means controlled by the movement of one handle section for moving the jaws towards and away from each other.

4. In a tool, handle sections, a head formed on one handle section, a housing supported within the head, cams extending inwardly from the housing, a pair of pivoted jaws, each of said jaws having a curved finger, said curved fingers adapted to engage the cams, and means for moving the jaws longitudinally of the housing to cause the jaws to move towards and away from each other.

5. In a tool, handle sections, one of said handle sections having a head, a housing mounted for rotation within the head, a supporting member extending through the housing, pivoted jaws mounted at the outer end of the supporting member cams within the housing, said jaws having curved fingers cooperating with the cams, means for adjustably connecting one of the handle sections and the supporting member, and said jaws adapted to move towards and away from each other by their contact with the cams.

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

CHARLES E. NORTHUP.

Witnesses:

J. E. TARTISS,
HAROLD L. DE WALD.