

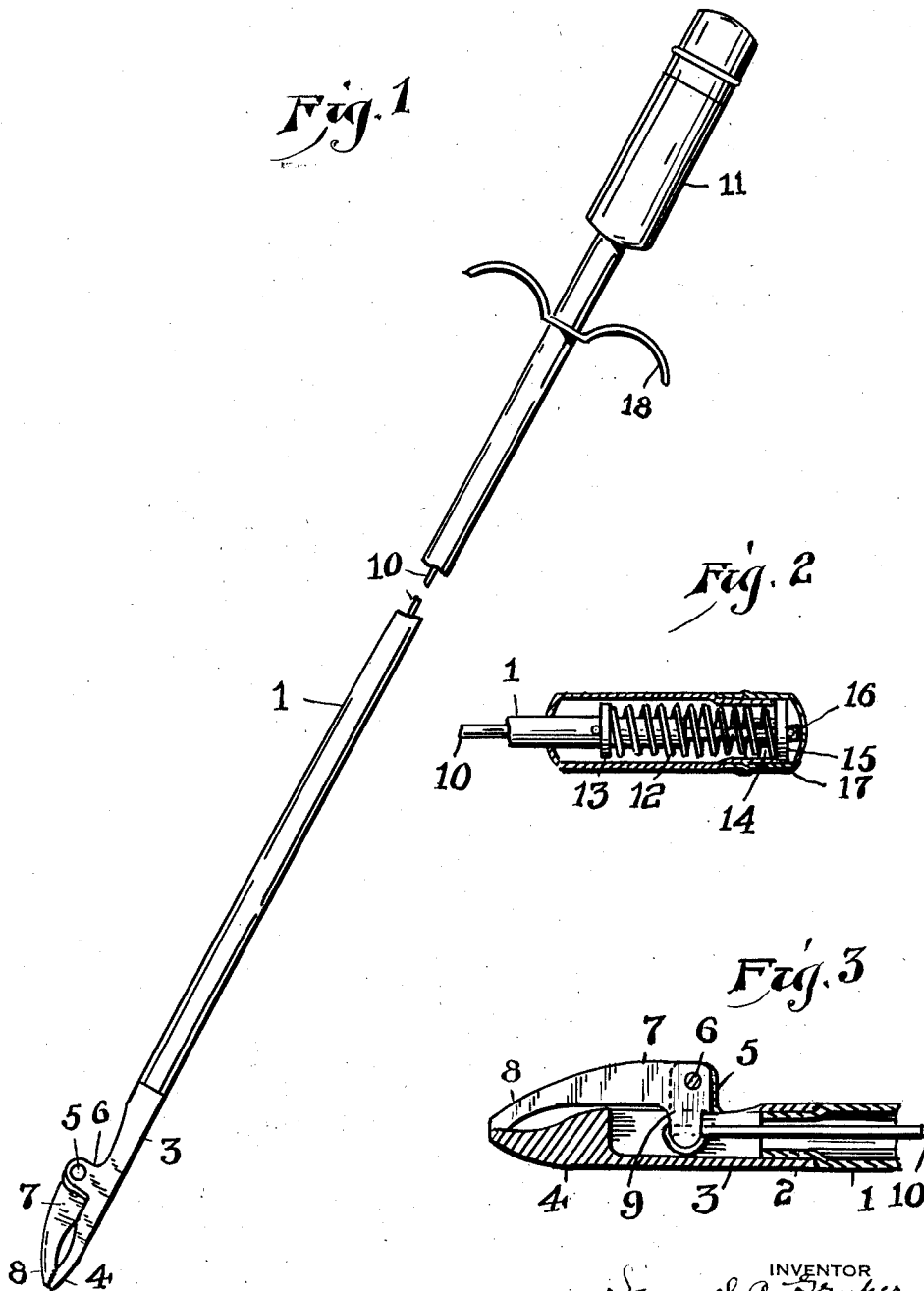
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GRIPPING TOOL

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UNITED STATES PATENT OFFICE.

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GRIPPING TOOL.

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The object which I have in view is the provision of a suitable tool by means of which objects may be grasped and removed from relatively inaccessible positions. Thus, for instance nuts are frequently dropped down into the oil-pan of an automobile motor, and it is practically impossible to reach and grasp them with the fingers or with pinchers, pliers or like tools.

For this purpose I have invented a grasping tool which is provided at one end with a fixed jaw and a movable jaw, the latter being spring-pressed toward the former. The spring jaw is opened by means of a rod which runs through the hollow stock of the tool and is spring-pressed away from the jaw-end of the tool, the connections being such that by compressing the spring the rod will be moved toward the jaw-end of the tool and the movable jaw will be forced open, but upon the relief of pressure on the spring the movable jaw will be forced toward the fixed jaw and resiliently held in its closed position.

In the preferred embodiment of my device, the same spring is utilized to hold the movable jaw in and to return it to its gripping position.

In the accompanying drawings, Fig. 1 is a perspective of a tool embodying the principles of my present invention; Fig. 2 is an enlarged detail in section of the handle end of the tool, and Fig. 3 is a similar view of the jaw end of the tool.

The following is a detailed description of the drawings:

1 represents a tubular stock which is made of suitable length for the purposes in view. At one end, the gripping end, the stock is reduced in exterior diameter to have slipped over the same the collar 2 which forms part of the fixed jaw member 3. The jaw member may be welded or otherwise secured to the stock. The jaw member is formed to provide the grasping jaw 4. The jaw member 3 is provided with a pair of twin lugs 5 carrying a cross pin 6 upon which is pivotally mounted the movable jaw member 7. Having its outer end formed as a jaw 8 adapted to coact with the fixed jaw 4 for grasping purposes. The jaw member 7 is provided with an integral or rigidly attached crank arm 9 which depends through a slot into the hollow interior of the jaw

member 3. The end of the crank arm 9 is connected to the butt end of the operating rod 10, as by having the end of said rod screwed into a threaded hole in said arm. The rod 10 extends through the bore of the stock 1 and is longitudinally slidable therein.

11 is a cylindrical sleeve slidably mounted on the handle end of the stock 1 and has its inner end turned to fit the stock. 12 is a helical spring having its inner portion fixed as at 13 to the stock 1 and wound about the end thereof. The outer end of the spring 12 is wound about the cylindrical block 14 which is provided with an enlarged circular head 15.

The handle end of the rod 10 protrudes from the handle end of the stock 1 and extends through an axial bore in the block 14. A cotter pin 16 through the extremity of the rod 10 prevents the block moving off the end of the rod. The block 14 is normally spaced away from the end of the stock 1 by the spring 12. 17 is a cap which slips over block 14 and is in telescopic engagement with the outer end of the sleeve 11. The sleeve and cap thus form a housing for the outer end of the rod 10, the spring 12 and the block 14.

18 is a finger bar rigidly mounted on the stock 1 adjacent to its handle end.

It is evident that if the finger bar be grasped by the fingers and the palm of the hand be pressed against the cap 17, the spring 12 will be compressed and the rod 10 moved longitudinally toward the jaw end of the stock, thus oscillating the member 7 on its axis and moving the jaw 8 away from the jaw 4, so that the jaws may be positioned on either side of the article, such as a nut, to be grasped. If the compression on the spring 12 is then relieved, the spring expands, thus spring-closing the jaw 8 and causing the jaws to grasp the article and hold it with a resilient grip until the jaw 8 is again opened by pressing on the cap 17.

In the smaller sizes the tool may be operated with one hand as above described, but the principle may also be embodied in larger tools which will require one hand to hold the stock and the other to press in the cap.

It is evident with a stock long enough to reach, nuts or other articles which could not be reached with the fingers or hand or even with the pliers, pinchers or tongs in general

use, may be readily grasped and removed by my improved tool.

What I desire to claim is:—

In a grasping tool for the purpose described, the combination of a tubular stock, a stationary jaw rigidly attached to one end of the stock, a movable jaw pivotally mounted on the stationary jaw and adapted to coact therewith, an operating rod slidably mounted within said stock and connected at one end to said movable jaw, said rod projecting beyond the stock at the opposite end and provided with an enlarged head, an

expansible spring encircling the tubular stock at one end and fixedly secured thereto, the opposite end of said spring abutting against the enlarged head on the projecting end of the operating rod, a cylindrical sleeve slidably mounted on the tubular stock and adapted to house said spring, and a cap member fitted over the end of the sleeve and bearing against the extreme end of the operating rod. 15 20

Signed at Verona, Pa. this 28 day of March, 1925.

SAMUEL A. GRUBER.