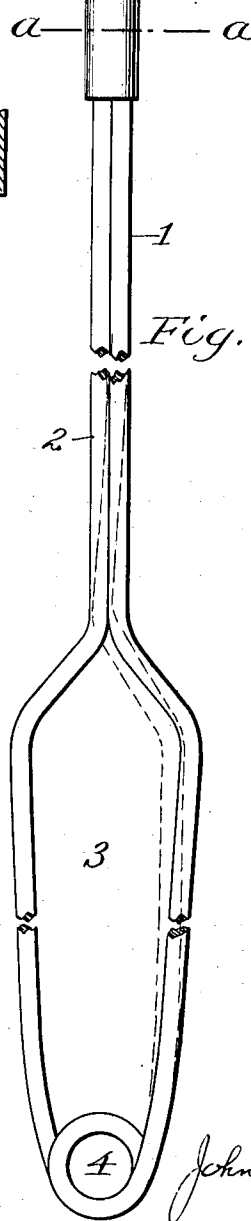
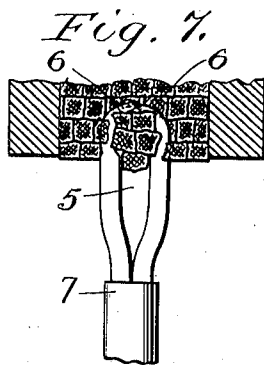
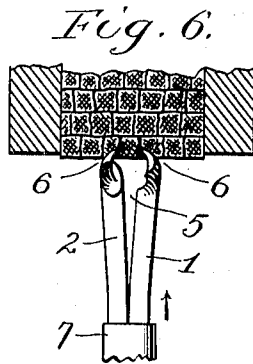
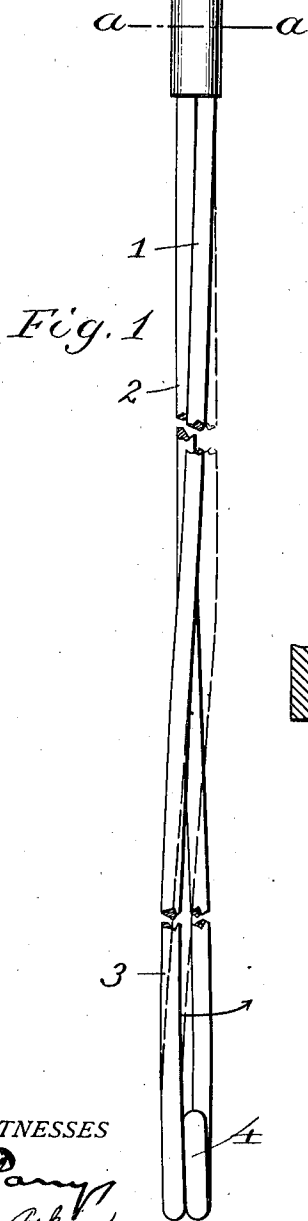
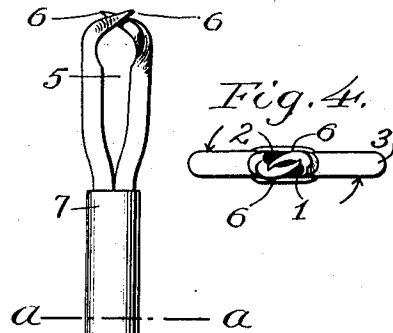
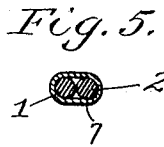
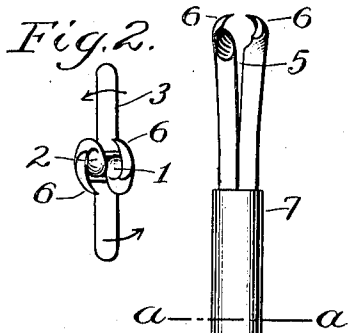


J. H. LEEK.
 TOOL FOR REMOVING PACKING AND OTHER MATERIAL.
 APPLICATION FILED MAR. 15, 1912.

1,040,361.

Patented Oct. 8, 1912.



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TOOL FOR REMOVING PACKING AND OTHER MATERIAL.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN H. LEEK, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Tools for Removing Packing and other Material, of which the following is a specification, reference being had therein to the accompanying drawing.

The object of this invention is to provide a device or tool for dislodging or removing objects or material, such for instance as piston, gland and like packings, which packings in use become tightly embedded in the parts to which they are applied, and which it is necessary to remove from time to time for renewal, repairs and other purposes. Such packings in use being subjected constantly to steam or fluid pressure or like conditions, harden and become very tightly seated, and their removal is attended with great difficulty.

My invention is directed particularly to the provision of a tool which may be operated to take firm hold on the packing or other material to be removed, and by which their removal may be effected with certainty and despatch.

In its more comprehensive scope my invention consists of a tool comprising a plurality of claws or fingers suitably supported and adapted to be turned relatively to each other in such manner that they may be engaged firmly with the packing or other material to be dislodged, with the result that by pulling on these claws the material may be removed.

In its more specific embodiment the claws or fingers are formed on the ends of stems, from which they extend in opposite directions and are curved or spirally formed, the stems being extended side by side and adapted to be turned relatively to each other around their longitudinal axes, with the result that the claw fingers will enter the material with a screw-like motion and will come together in the material and take a firm hold thereon, so that by pulling on the stems, the material or packing may be readily removed. By the turning of the stems relatively to each other as described, the claw fingers will be opened or closed, according to the direction of movement, and the invention further consists in means for

locking the claws either in open position or in closed position.

In the accompanying drawings: Figure 1 is a side elevation of the improved tool, showing the claws in open position. Fig. 2 is an end view of the same. Fig. 3 is a side elevation similar to Fig. 1, but showing the claws in closed position. Fig. 4 is an end view of the same. Fig. 5 is a cross section on the line *a-a* of Figs. 1 and 3. Fig. 6 is a view showing how the open claws are engaged with the packing preparatory to the operation of the stems to close the claws in the material. Fig. 7 is a similar view showing the claws in closed position in the material with a firm hold thereon.

My improved device or tool comprises two stems 1 and 2, constructed preferably of heavy steel wire, which extend side by side for some distance, their rear portions being separated to form a loop or handle 3, the sides of which are connected together at the end of the handle in the form of a spring coil 4. This structure may be conveniently formed from a single piece of wire, which is bent around on itself at its middle to form the coil 4 and the loop or handle 3, the two free ends of the wire being brought together to extend side by side to form the stems 1 and 2. Near their extremities the stems at their free ends are bent outwardly from each other to leave a space 5 between them, and the ends of the stems are offset laterally in opposite directions and pointed, so as to constitute in effect claws 6, 6, which are curved in opposite directions, as shown in Figs. 2 and 4, and which are extended obliquely or at an inclination with respect to the stems, as shown in Figs. 1 and 3, thus giving to the claws a spiral form. The stems where they extend side by side are closely but loosely encircled by a flattened sleeve or collar 7, which serves to maintain the stems closely side by side, but permits them to be rotated or turned on their individual axes relatively to each other and to the sleeve. The claw ends 6, 6, are extended in opposite directions relatively to each other, and by the turning motion of the stems, which is effected by twisting the looped handle, the claws will be rotated or moved relatively to each other in the same direction and on axes coincident with the longitudinal axes of the stems, the twisting of the handle to the left, in Fig 3, operating to open the claws to the

position of Figs. 1 and 2, and the twisting of the handle to the right, in Fig. 1, operating to close the claws to the position shown in Figs. 3 and 4.

5 In the use of the tool the claws are turned to open position, as shown in Fig. 1, by holding the sleeve 7 in the left hand and twisting the looped handle to the left, such action rotating the two stems within the sleeve around their longitudinal axes and in the same direction, and causing the 10 claw ends to separate from each other with a rotary motion. With the claws in this position, the two sides of the looped handle are forced toward each other by the pressure of the hand, which will shift one stem to the side of the other and wedge or bind the same in the sleeve, thereby locking the 15 parts with the claws in open position. In this position the ends of the claws are engaged with the packing or material, as shown in Fig. 6, and on being turned to the right, the points will enter and embed themselves in the material, and when the 20 proper engagement has in this manner been secured, the pressure of the hand on the sides of the looped handle is relieved. The handle is now twisted to the right, with the result that the two claws will enter the 30 material with a spiral screwing motion and at the same time they will rotate relatively to each other about the longitudinal axes of the stems in the direction of the screwing motion, and their ends will close together deeply embedded in the material, as 35 shown in Fig. 7, and will take firm hold thereon, the material being embraced in the space 5 between the separated portions of the stems adjacent the claw points. To 40 lock the claws closed in this position the sides of the looped handle are again forced together by the hand, and this action shifting one stem alongside the other, will, as before described, bind the same in the sleeve 45 7 and lock the parts closed. In this position the tool is pulled and the removal of the packing effected.

From the construction described it will be seen that the two claw ends by entering 50 the material with a screwing motion and coming together in closed position deeply embedded in the material, form a closed loop in the body of the material, and being locked in this position, a very effective 55 hold is secured on the material and the latter may be removed with certainty and despatch. In the action of screwing the points into the material, there appears to be both a bodily rotation of the stems in unison, 60 as well as an individual relative rotation of the claw ends and in the same direction as the bodily rotation, this action causing the claws to enter the material and close together therein with the maximum rapidity and the minimum expenditure of force.

In the accompanying drawings and foregoing description I have illustrated and described my improved device in the particular form which I prefer to adopt, but it will be understood that the invention is susceptible of such changes and modifications in the detailed construction of the parts as will suggest themselves to the skilled mechanic; and it will be further understood that the invention is not limited to any particular form or construction of the parts except in so far as such limitations are specified in the claims.

Having thus described my invention, what I claim is:

1. A tool of the type described, comprising a plurality of stems, each provided with an offset end, said stems adapted to be turned relatively to each other and means for guiding the stems in their movements. 80
2. A tool of the type described, comprising a plurality of stems, each having an offset end, said ends adapted to be turned relatively to each other about axes coincident with the longitudinal axes of the stems and means for guiding the ends in their movements. 85
3. A tool of the type described, comprising a plurality of stems provided each with an end offset laterally and extending obliquely with reference to the axis of the stem, said ends adapted to be turned relatively to each other and means for guiding the ends in their movements. 90
4. A tool of the type described, comprising a plurality of stems provided each with a curved offset end, said ends adapted to be turned relatively to each other and means for guiding the ends in their movements. 95
5. A tool of the type described, comprising a plurality of stems having each a curved offset end extending obliquely with relation to the axis of the stem, said ends being adapted to be turned relatively to each other and means for guiding the ends in their movements. 100
6. A tool of the type described, comprising a plurality of stems provided each with a spiral end, said ends adapted to be turned relatively to each other and means for guiding the ends in their movements. 105
7. A tool of the type described, comprising a plurality of stems extending side by side and connected together at one end, the opposite extremities of said stems being provided each with an offset end, said offset end adapted to be turned relatively to each other by a twisting motion of the connected ends of said stems and means for guiding the ends in their movements. 110
8. A tool of the type described, comprising a plurality of stems extending side by side and provided each with an offset end, said ends adapted to be turned relatively to and from each other to closed and open 115

positions respectively, by a twisting motion of the stems and means for guiding the ends in their movements.

- 5 9. A tool of the type described, comprising a plurality of stems arranged side by side and each provided with an offset end, and a sleeve encircling said stems and in relation to which the stems may be turned relatively to each other.
- 10 10. A tool of the type described, comprising a plurality of claws or fingers adapted to be turned relatively to each other to open or closed position, and means for locking said claws in open position.

11. A tool of the type described, comprising a plurality of claws or fingers adapted to be turned relatively to each other to open or closed position, and means for locking said claws in closed position.

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

JOHN H. LEEK.

Witnesses:

HOWARD F. WHITNY,
ELLA VOORHEES.