

(No Model.)

J. WIKE.  
SCREW TAP.

No. 371,015.

Patented Oct. 4, 1887.

Fig. 1.

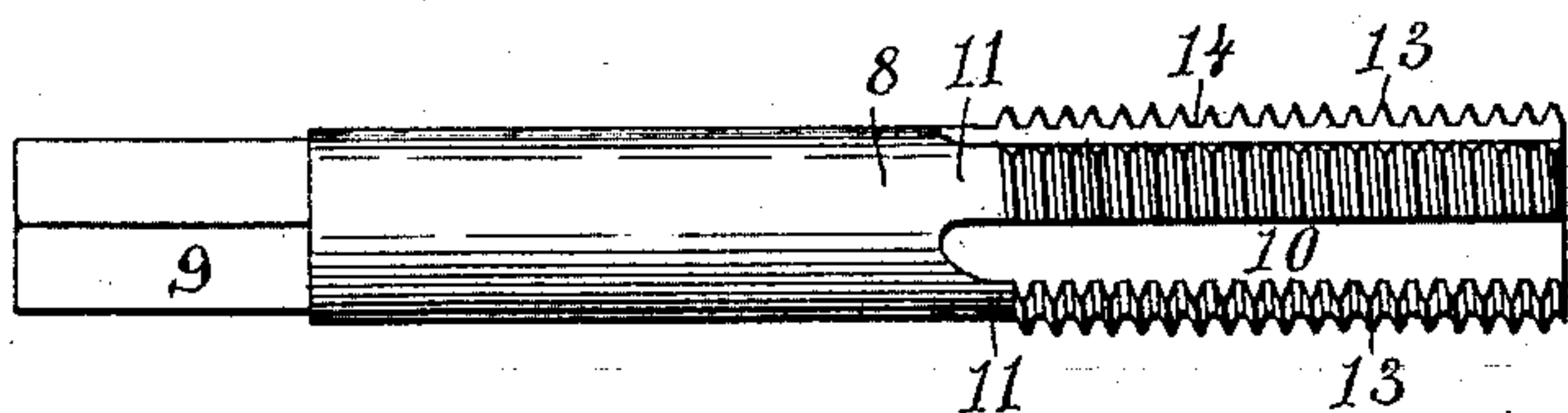


Fig. 2.

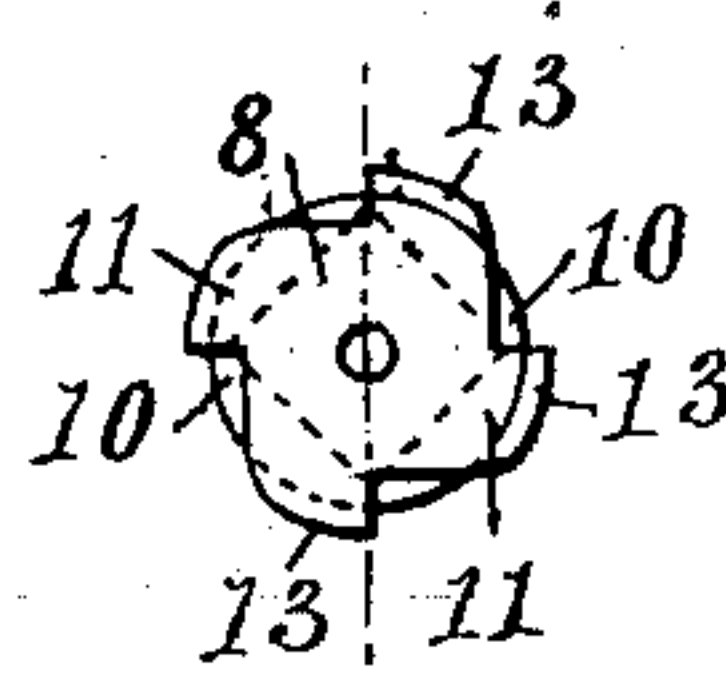


Fig. 3.

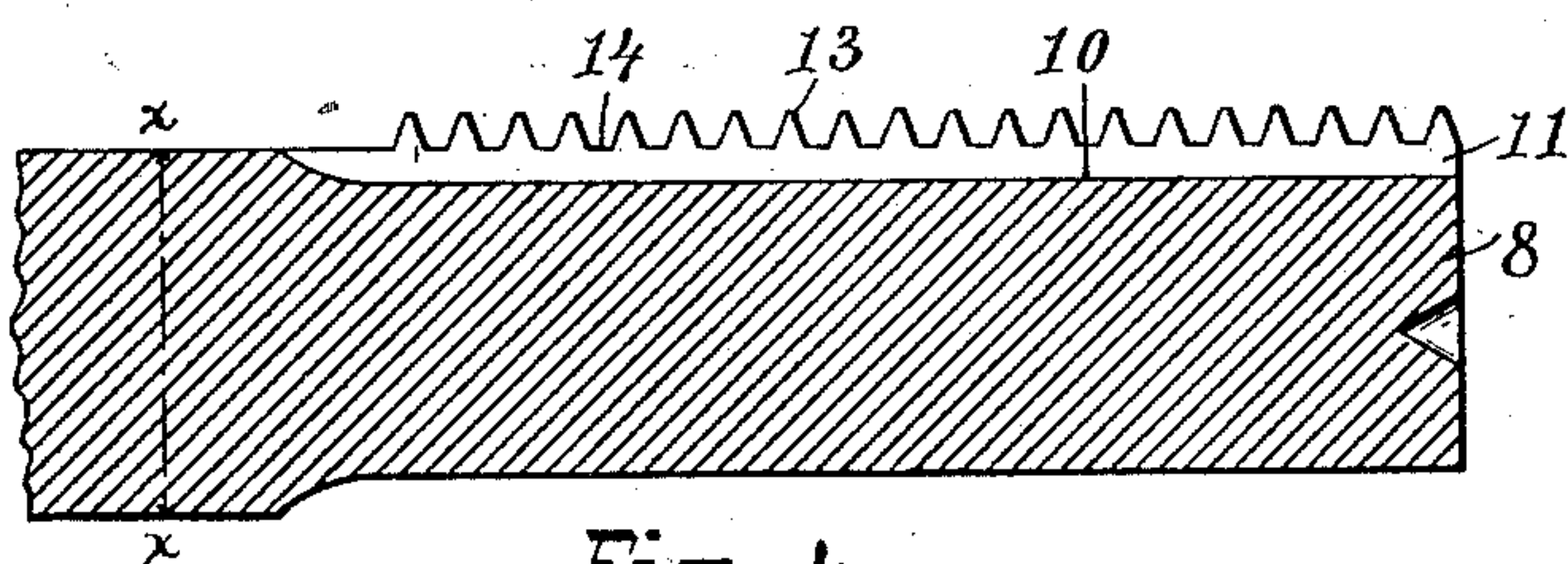


Fig. 4.

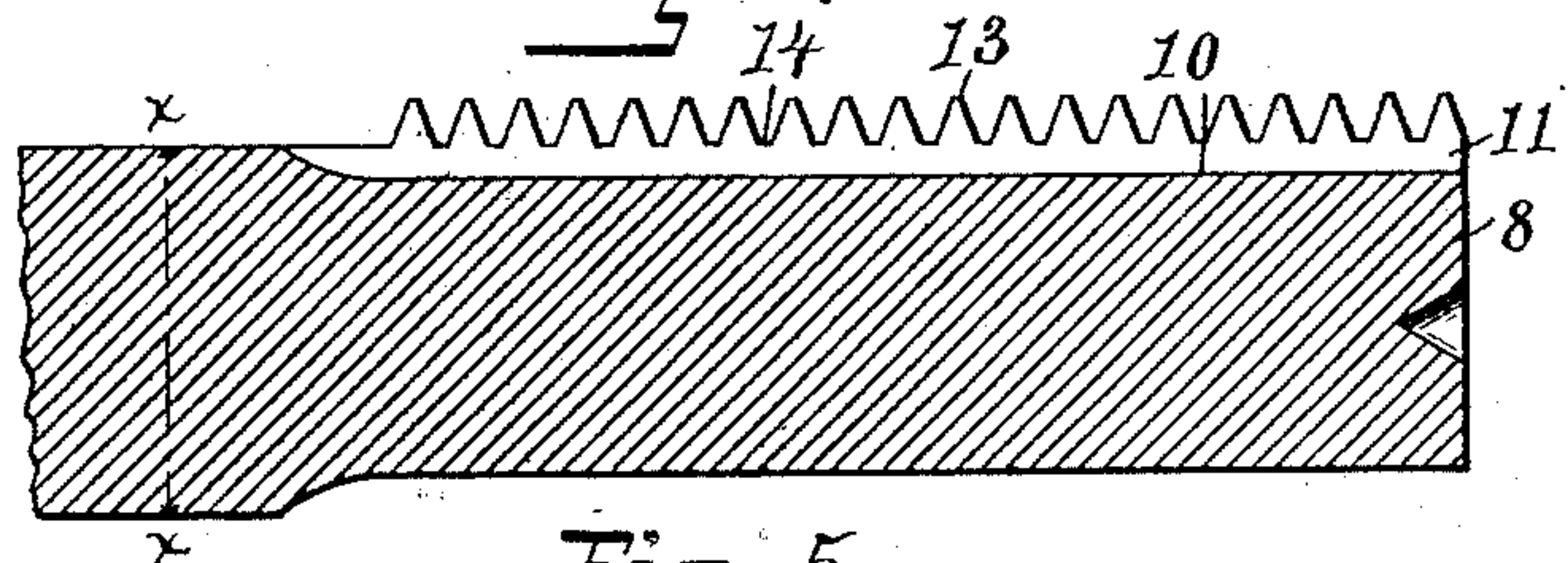


Fig. 5.

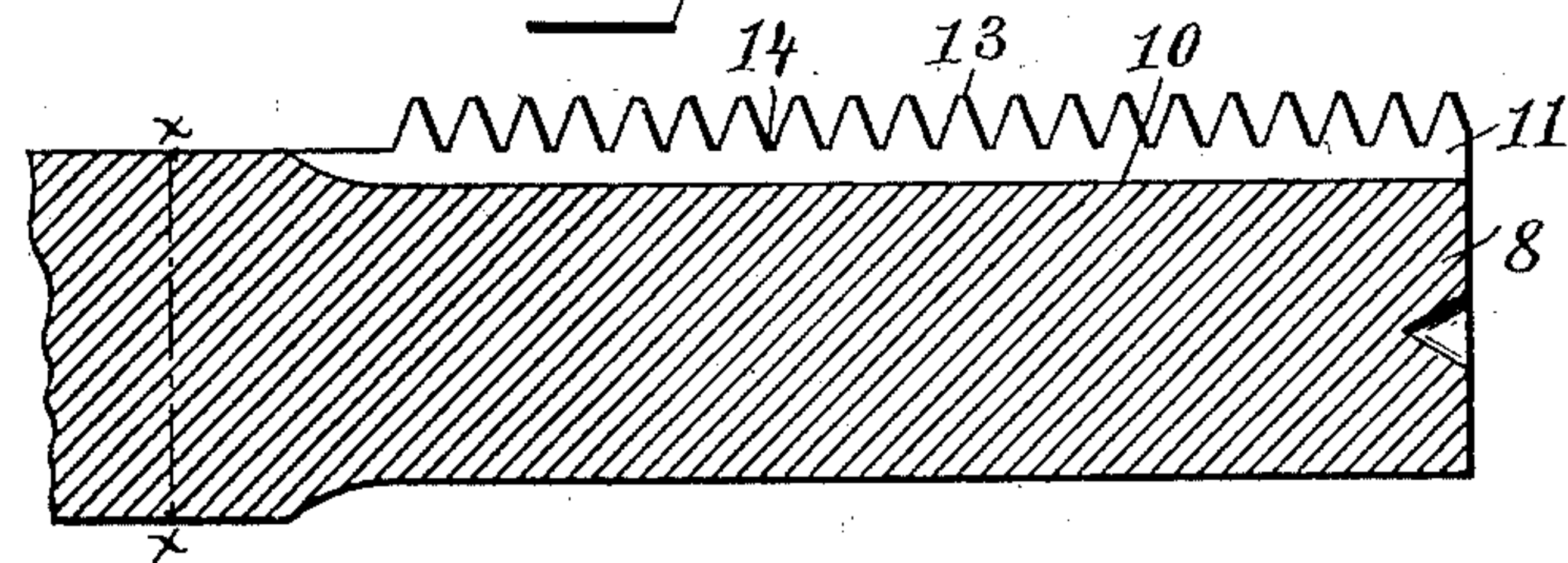


Fig. 6.



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# UNITED STATES PATENT OFFICE.

JOHN WIKE, OF PROVIDENCE, RHODE ISLAND.

## SCREW-TAP.

SPECIFICATION forming part of Letters Patent No. 371,015, dated October 4, 1887.

Application filed May 10, 1887. Serial No. 237,683. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN WIKE, of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Screw-Taps, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

10 This invention relates to what are ordinarily known as "taps" or "screw-taps," which are devices for forming internal screw-threads. These devices consist, in general, in a shank or body which is scored or grooved out longitudinally, and are provided with cutting-teeth arranged spirally upon the rib-like portions left standing between the longitudinal grooves.

20 The objects of my invention are to improve the construction of screw-taps so that the boring of hollow screws may be rendered more accurate and less difficult than has heretofore been the case in the use of the old forms of taps.

25 To the above purposes my invention consists, essentially, in arranging cutting or reaming edges between the teeth of the tap, and, further, in constructing each tap of a set of the same diameter or diametric distance between the bases of diametrically-opposite teeth, and having each tap provided with a set of teeth differing in size from the set of any of the other taps of the set.

30 In order that my invention may be fully understood, I have illustrated in the accompanying drawings, and will proceed to describe, the best form thereof so far devised by me, with the understanding that the invention admits of some modification.

35 In the accompanying drawings, Figure 1 shows a side view of one of my improved screw-taps. Fig. 2 is a cross-sectional view of the tap shown in Fig. 1. Figs. 3, 4, and 5 are enlarged longitudinal central sectional views of the toothed portions of three differently-constructed taps, which may comprise a set. Fig. 45 6 represents a diagrammatic view showing the relative proportions of the different-sized sets of cutter-teeth used in a set of three taps.

In the said drawings like numbers of reference designate corresponding parts throughout.

Referring to the drawings, the number 8

designates the shank or body of the screw-tap, which is provided with an angle-head, 9, at one end and is formed at the other end with the longitudinal scores or grooves 10. Between 55 the grooves 10 are the rib-like portions 11, upon which the cutter-teeth 12 are arranged spirally around the shank—that is, the crests or edges of the several teeth 13 are arranged in such order as to form a mutilated or interrupted spiral screw-thread, as will be readily understood from the drawings. The cutter-teeth 13 are disposed in like and regular order on each tap. The teeth on each tap are the same for each tap, though different from the 65 teeth of all the other taps of the set of which it is a member. The spaces 14 between the teeth are the same in each set of teeth and are different in each tap.

70 The graduation of the sizes of the teeth 13 used on the different taps of a set is clearly shown in the diagrammatic view in Fig. 6, wherein the relative proportions of the cross-sectional areas of three sizes of teeth are shown. The smallest tooth 13 in Fig. 6 represents the proportions of a tooth in the tap shown in Fig. 75 3, and the medium and largest sizes represent, respectively, those shown in Figs. 4 and 5. As the teeth grow larger in the taps, of course the interdental portions 14 become narrower. 80 These interdental portions 14 are formed with cutting-edges, which act as reaming or cutting edges in boring hollow screws.

Another and most important feature of my invention is in constructing the diameters  $x$  85 of all the taps of a set equal. This causes the diametric distances of diametrically-opposite teeth to be the same for each tap in a set.

By virtue of my improvements the stock may be bored out with more accuracy and with 90 greater ease than by the use of a set of taps not having the interdental cutting or reaming edges 14 and the old forms of taps of unequal calibers or diameters.

My improved taps are especially efficient in 95 straightening or truing the bores of hollow screws which may have been bored crooked by the employment of the old form of taps, which possess obvious inherent defects which are not found in the construction of my taps. 100

By reducing the friction in the working of the taps I prolong the life of the tap consider-

ably, since it requires less power to work them, and consequently the wear and tear is much diminished.

Having thus described my invention, I claim  
5 as new and desire to secure by Letters Patent—

1. The combination, as hereinbefore set forth, with a tap-shank provided with a set of teeth, of cutting or reaming edges disposed between the teeth, substantially as and for the purpose  
10 described.

2. A set of screw-taps each having the same diameter and each provided with a different-sized set of cutting-teeth, substantially as and for the purpose hereinbefore set forth.

15 3. A set of screw-taps each having a set of different-sized teeth and provided with interdental cutting-edges, and each tap having the same diameter or diametric distance between

the bases of the teeth, substantially as hereinbefore described. 20

4. The combination, as hereinbefore set forth, with the tap-shank 8, having the grooves 10, of the cutter-teeth 13 and the cutting-edges 14 between said teeth, substantially as hereinbefore described. 25

5. A set of screw-taps each consisting of a tap-shank, 8, provided with the cutter-teeth and constructed with the same diametric distance  $x$  between the bases of the teeth, substantially as and for the purpose herein described. 30

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Witnesses:

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