Sept. 30., 1924. 1,510,254

J. O. BOYLE

PLIERS

Filed June 25. 1923

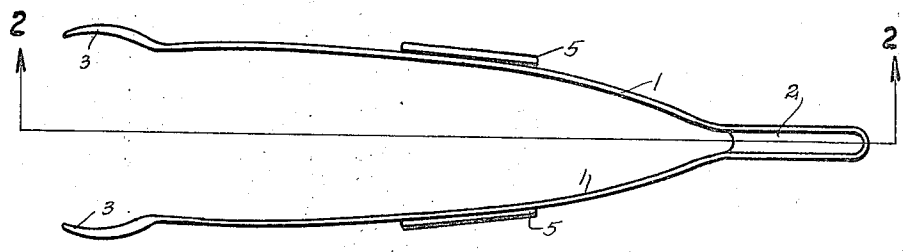


FIG. 1.

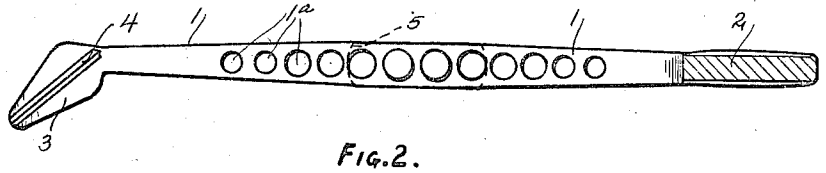


FIG. 2.

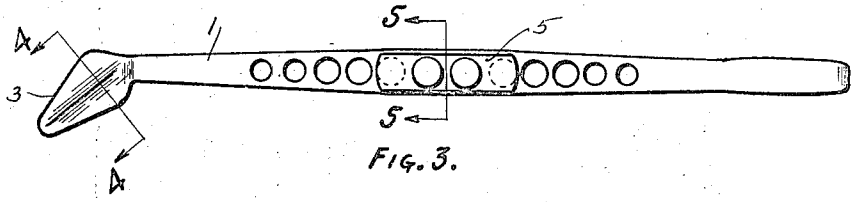


FIG. 3.



FIG. 4.



FIG. 5.

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UNITED STATES PATENT OFFICE.

JOHN O. BOYLE, OF YOUNGWOOD, PENNSYLVANIA.

PLIERS.

Application filed June 25, 1923. Serial No. 647,700.

To all whom it may concern:

Be it known that I, JOHN O. BOYLE, a citizen of the United States, residing at Youngwood, in the county of Westmoreland and State of Pennsylvania, have invented new and useful Improvements in Pliers, of which the following is a specification.

This invention relates to pliers, and more particularly to pliers of the spring type adapted for handling various articles used in dental work.

One of the main objects of the invention is to provide a pair of pliers of simple construction and which may be produced at small cost and are well adapted for handling either round or irregularly shaped articles. A further object is to provide pliers of the character stated in which the beaks or gripping elements have their inner faces concaved longitudinally and transversely and provided with grooves, the inner faces of the beaks being thus adapted for gripping and holding either rounded or irregularly shaped objects. Further objects will appear from the detailed description.

In the drawings:—

Figure 1 is a rear view of the pliers;

Figure 2 is a section taken substantially on line 2—2 of Fig. 1;

Figure 3 is a side view;

Figure 4 is a section taken substantially on line 4—4 of Fig. 3;

Figure 5 is a section taken substantially on line 5—5 of Fig. 3.

The pliers include two arms 1 which are resiliently secured to a head 2, the arms being provided with spaced openings 1^a to provide the desired resiliency and spring of the arms. These pliers are of a well known type extensively used in dental work and, as far as described, are of standard construction. Each arm 1 is provided, at its free end, with a gripping element or beak 3 which is disposed at an angle of approximately 45° to arm 1, this beak being of substantially triangular shape in outline. Beak 3 is arched outwardly longitudinally, the inner face of the beak being also arched or curved transversely. At the central portion of beak 3, and extending longitudinally thereof, I provide a V-shaped groove 4 which extends from the tip to the heel or base of the beak. By having the inner face of each of the beaks 3 concaved longitudinally and transversely, these beaks are particularly well adapted for gripping and holding between them rounded articles, accidental loss of the article being, to a great extent, prevented, since the inner faces of the beaks are closer together at their peripheral portions than at points remote from their peripheries. The grooves 4 are well adapted to fit about angular projections of irregularly shaped articles for holding the same firmly between the beaks. By having the beaks shaped and grooved in the manner illustrated and described handling of rounded and irregularly shaped articles is greatly facilitated and possibility of accidental loss of these articles from the pliers is greatly reduced.

These pliers are frequently used for holding articles in the flame of an alcohol lamp or Bunsen burner and the openings 1^a are of material assistance in preventing excessive heating of the arms 1. Preferably, though not necessarily, I provide plates 5 of fiber, wood, or other suitable material which is a non-conductor of heat, these plates serving to prevent burning of the user's hand. This provides pliers of very simple and highly efficient construction which may be readily produced and sold at small cost and are well adapted for holding either rounded or irregularly shaped articles.

What I claim is:—

1. A pair of pliers including arms movable toward and away from each other, said arms including terminal elements having their inner faces concaved both longitudinally and transversely, said terminal elements being provided in their inner faces with grooves of angular cross-section.

2. In a pair of pliers, a pair of resilient arms secured together at one end, each of said arms being provided at its other end with an angularly disposed beak having its inner face concaved both longitudinally and transversely and provided with a central longitudinally extending groove of substantially V-shape in cross-section.

In testimony whereof I affix my signature.

JOHN O. BOYLE.