

No. 789,274.

PATENTED MAY 9, 1905.

J. P. A. HANLON.

SCREW DRIVER.

APPLICATION FILED MAR. 23, 1904.

Fig. 1

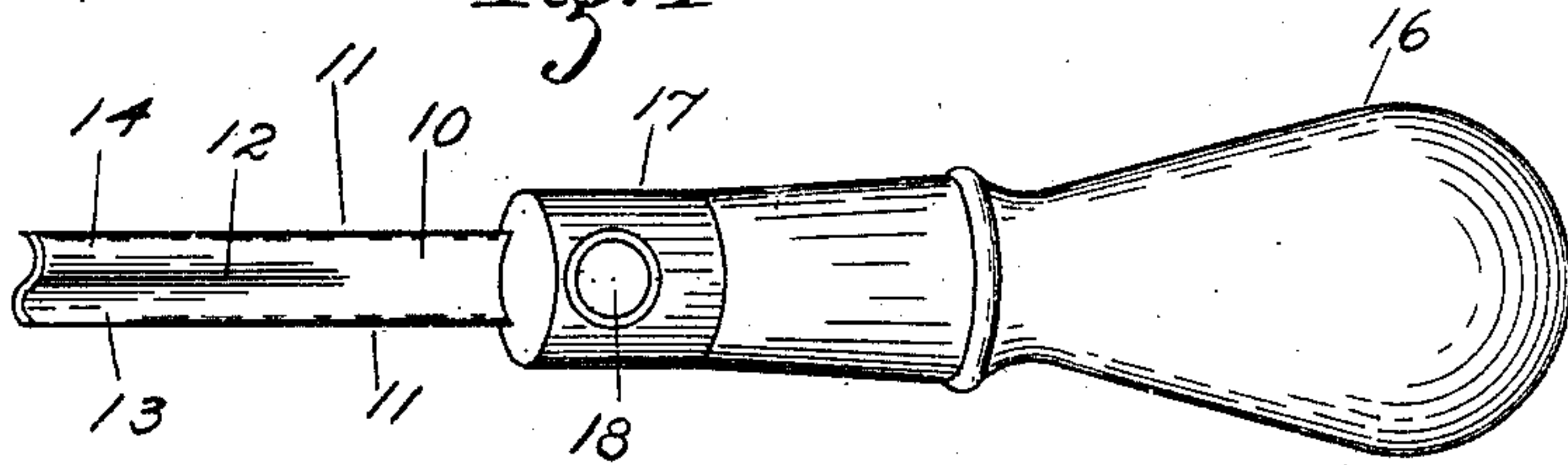


Fig. 2

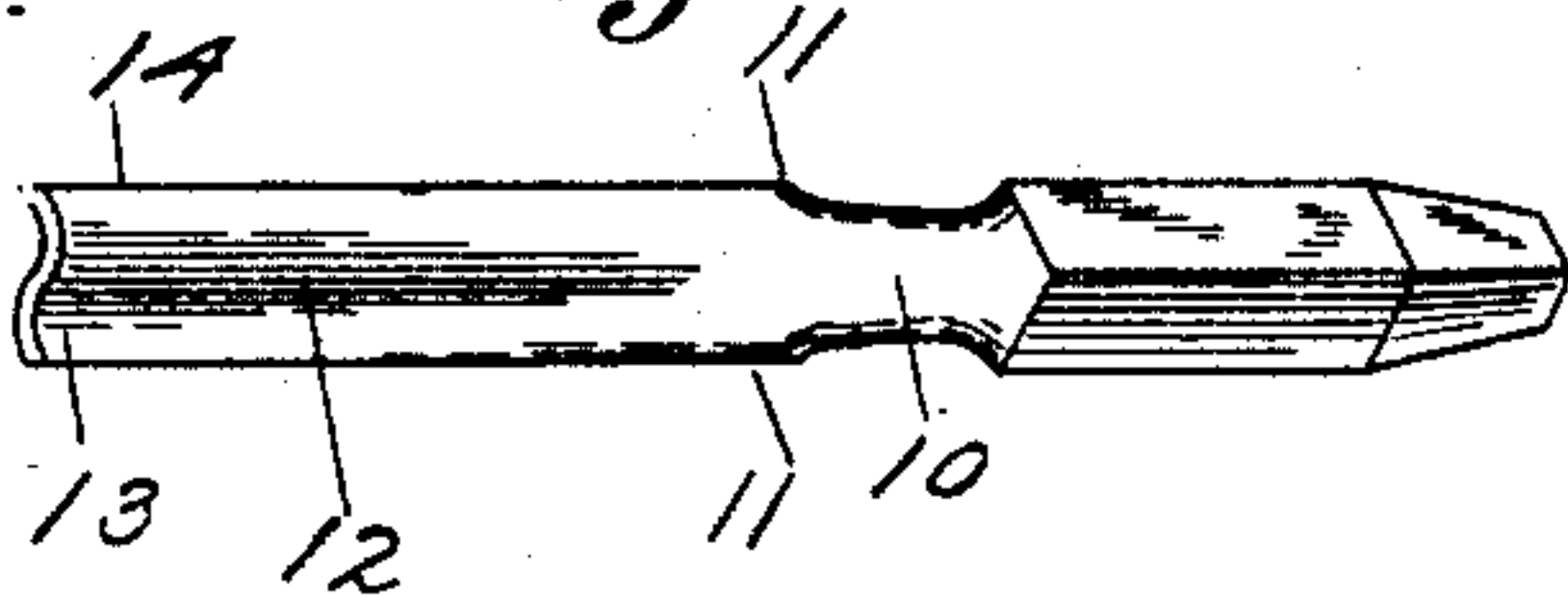


Fig. 3

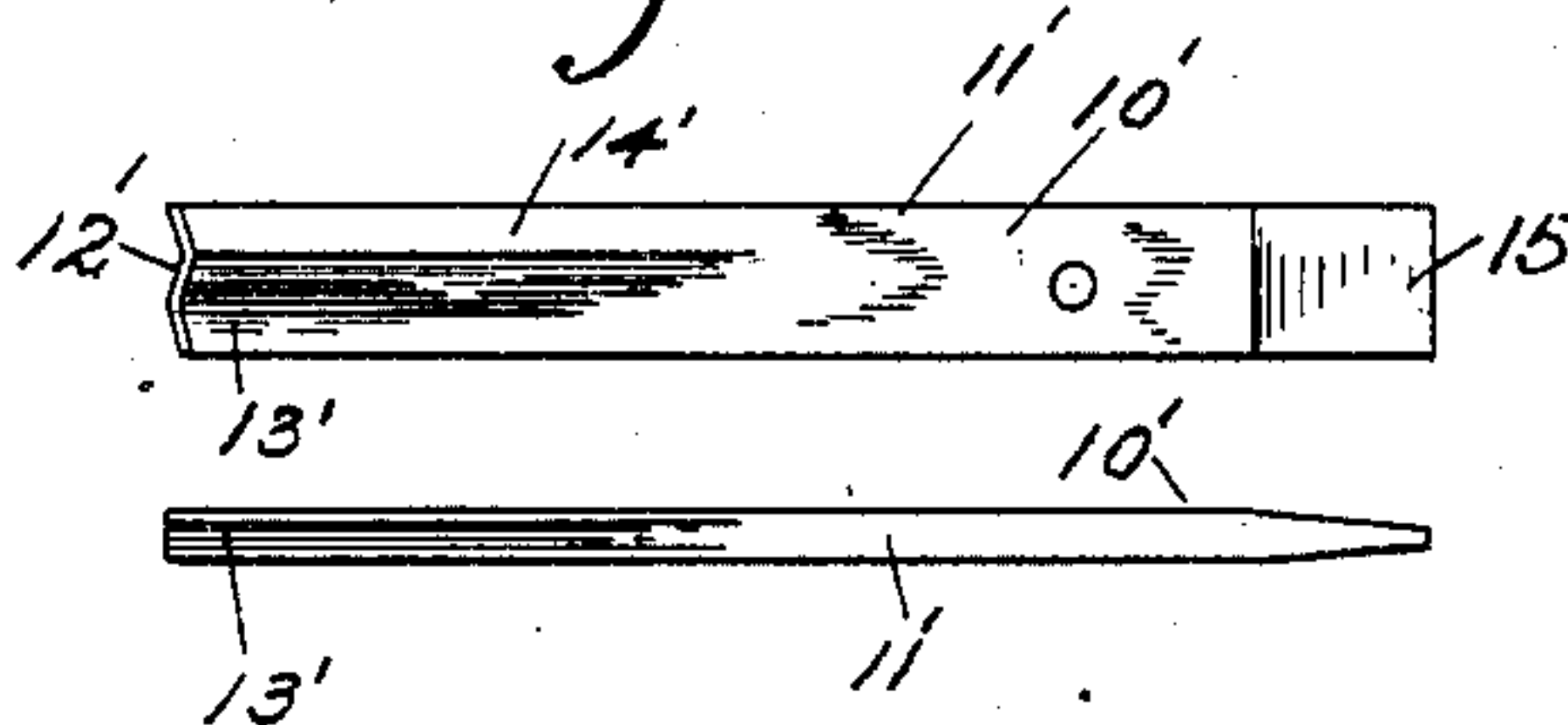


Fig. 4

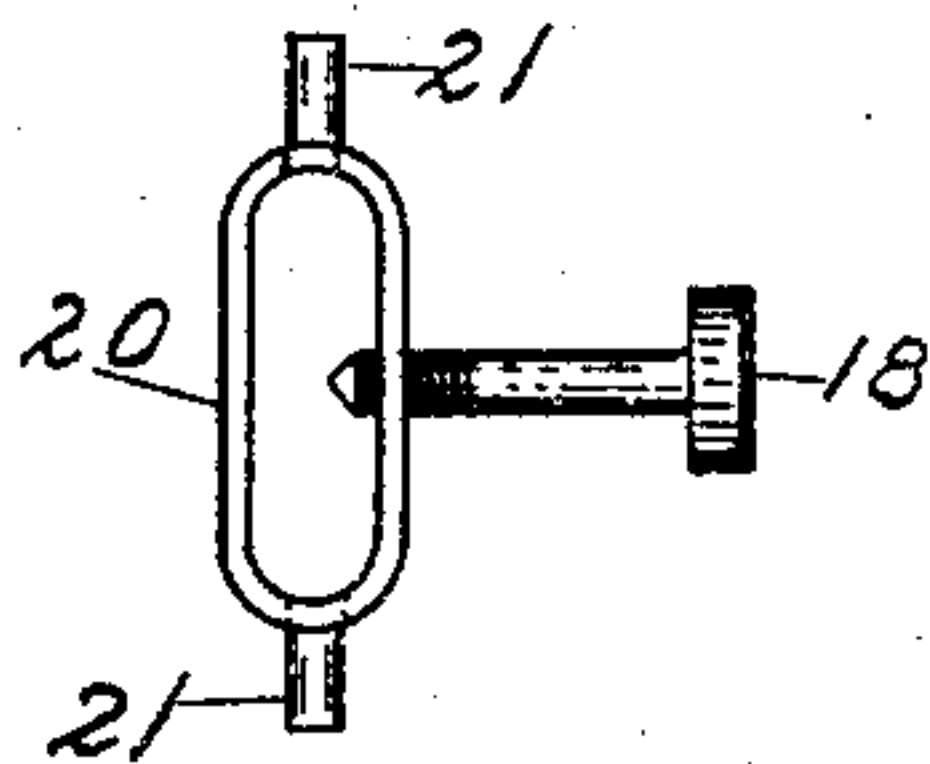
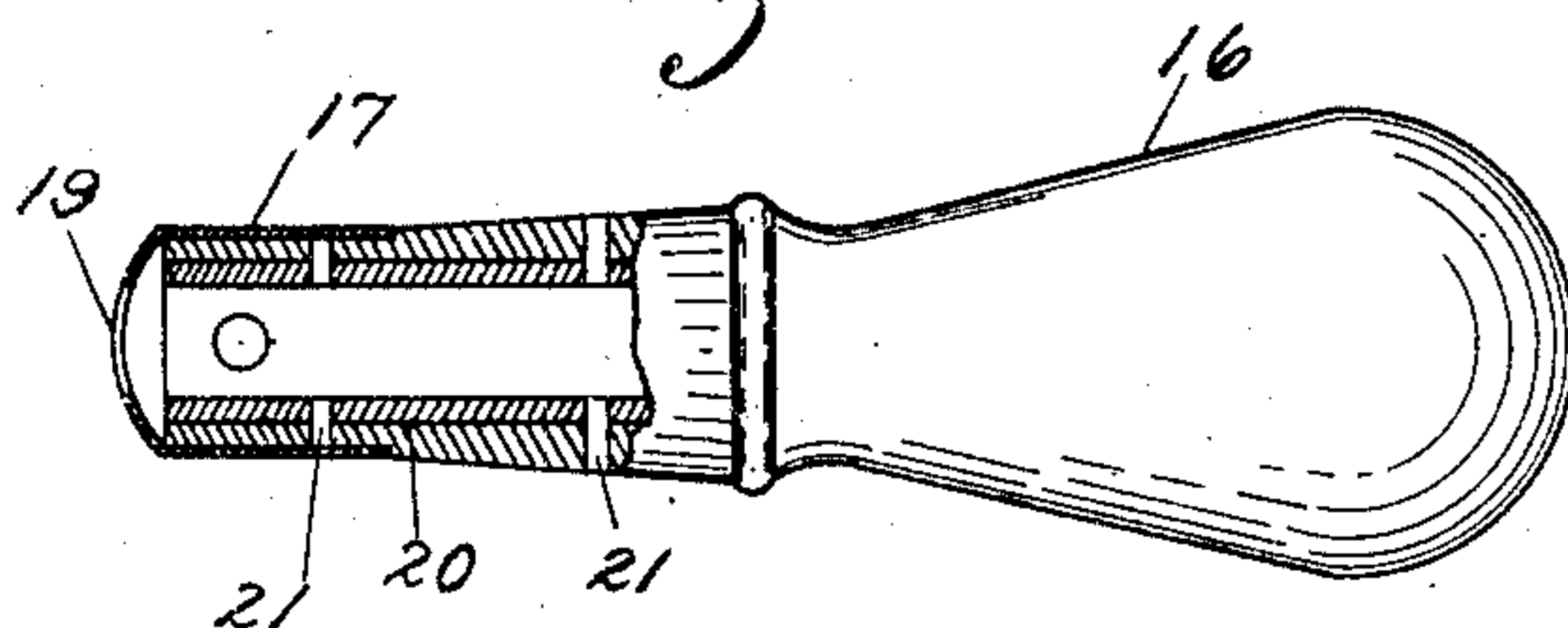


Fig. 5



Fig. 6



Witnesses:

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Inventor:

Joseph P. A. Hanlon  
By Henry J. Miller  
att'y.

# UNITED STATES PATENT OFFICE.

JOSEPH P. A. HANLON, OF SOMERVILLE, MASSACHUSETTS.

## SCREW-DRIVER.

SPECIFICATION forming part of Letters Patent No. 789,274, dated May 9, 1905.

Original application filed May 20, 1901, Serial No. 61,050. Divided and this application filed March 23, 1904. Serial No. 199,557.

*To all whom it may concern:*

Be it known that I, JOSEPH P. A. HANLON, a subject of the King of Great Britain, residing at Somerville, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Screw-Drivers; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to improvements in screw-drivers.

One object of the invention is to so construct a screw-driver blade adapted to fit slots having a zigzag or curvilinear shape that such blades are rendered sufficiently strong to resist the torsional strain to which they are subjected.

Another object of the invention is to so construct a screw-driver blade of this nature that it may readily be screwed in a holder or handle of ordinary construction.

The invention consists in a screw-driver blade having three longitudinally-extending laterally-inclined faces merging into a face common to all at a distance from one end.

The invention also consists in a screw-driver blade having parallel surfaces convoluted transversely to form longitudinal ribs having concave channels at the opposite surface of said blade.

The invention also consists in a screw-driver blade having a rectangular shape in cross-section and zigzag or curvilinear surfaces extending from the plane surfaces thereof and gradually reducing the thickness of the blade in their extension toward the end thereof.

The invention also consists in such other novel features of construction and combination of parts as shall hereinafter be more fully described, and pointed out in the claim.

Figure 1 represents a perspective view of the improved screw-driver secured in a handle. Fig. 2 represents a similar view of the screw-driver blade having an end designed to be secured in a bit-stock. Fig. 3 represents plan and edge views of a modified form of the blade, showing the zigzag formation at one end and the straight edge at the other end.

Fig. 4 represents a detail end elevation of a casing for holding the screw-driver blade, together with the thumb-screw and pins attached thereto. Fig. 5 represents the heads of three screws with slots of varying shapes. Fig. 6 represents an elevation, partly in longitudinal section, of the form of handle preferably used with this improved screw-driver.

Similar numbers of reference designate corresponding parts throughout.

As shown in the drawings in its preferred form in Figs. 1 and 2, the screw-driver consists of a body portion rectangular in cross-section and having flat sides, as 10, and edges, as 11 11. From the rectangular portion bounded by said sides and edges the material extends in curvilinear surfaces to form the central longitudinal portion 12, transversely inclined and forming a central torsional resisting member for the opposite inclined edge portions 13 and 14, which extend longitudinally of the body portion and have parallel edges, the surfaces of these edge portions gradually merging into the body. The cross-sectional shape of the blade between the end thereof and the point where the convolutions merge into the plane surfaces of the body varies considerably as the convolutions become less marked near the body until they flatten out into such surface. The portions 12 and 13 may also be considered as duplex longitudinally-extending concavo-convex ribs, which gradually assume the general configuration of the body, of which they form a part.

The body of the blade is preferably furnished with a shank portion of any suitable size and shape adapted to be secured in a tool-holder, and this shank portion, as indicated at 15, Fig. 3, may be so shaped as to be useful as a tool when desired—as, for instance, a straight-edge screw-driver.

In the modified construction shown in Fig. 3 in plan and edge view the central transversely-inclined member 12' meets the longitudinally-inclined edges 13' and 14' along sharply-defined angular shoulders; but these angularly-disposed faces extend longitudinally and eventually merge into the surface of the body 10'. The edges of the portions 13' and 14' are parallel throughout their extension.



sion, and these angularly-disposed portions serve to strengthen the blade against torsional strain, while the end thereof is adapted to engage in a correspondingly-shaped slot.

5 In order that the particular blade shown in Fig. 1 may be supported for use in a suitable handle, I have herein illustrated the handle 16, provided with the ferrule 17, furnished with the clamp-screw 18 and having the slot  
10 19, through which one end of the blade may be inserted. Within a suitable socket in the ferrule end of the handle is secured the metallic casing 20, shaped to receive the end of the blade and secured in place by the pins 21 21,  
15 driven through the material of the handle 16 and engaging in perforations in said casing. The clamp-screw 18 also works through a perforation in said casing to bear against any suitable engaging portion of the blade.

20 By the construction shown in Figs. 1, 2, and 3 the blade of the screw-driver is greatly strengthened against torsional strain, while the end thereof is adapted to engage comple-

mental slots in screws or other devices adapted to be rotated thereby. 25

I do not claim the handle herein shown and described, as such device forms the subject-matter of Letters Patent No. 750,849, granted to me February 2, 1904, to which reference is made, the application being a division of the  
30 application on which said patent was granted.

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

A screw-driver blade having a curvilinear end edge and a rectangular body considerably  
35 thicker than said edge and having flattened sides, the curvilinear surfaces forming the edge portion being flattened in their extension toward the body and merging into the flattened surfaces thereof. 40

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

JOSEPH P. A. HANLON.

Witnesses:

GEO. O. HANLON,  
H. J. MILLER.