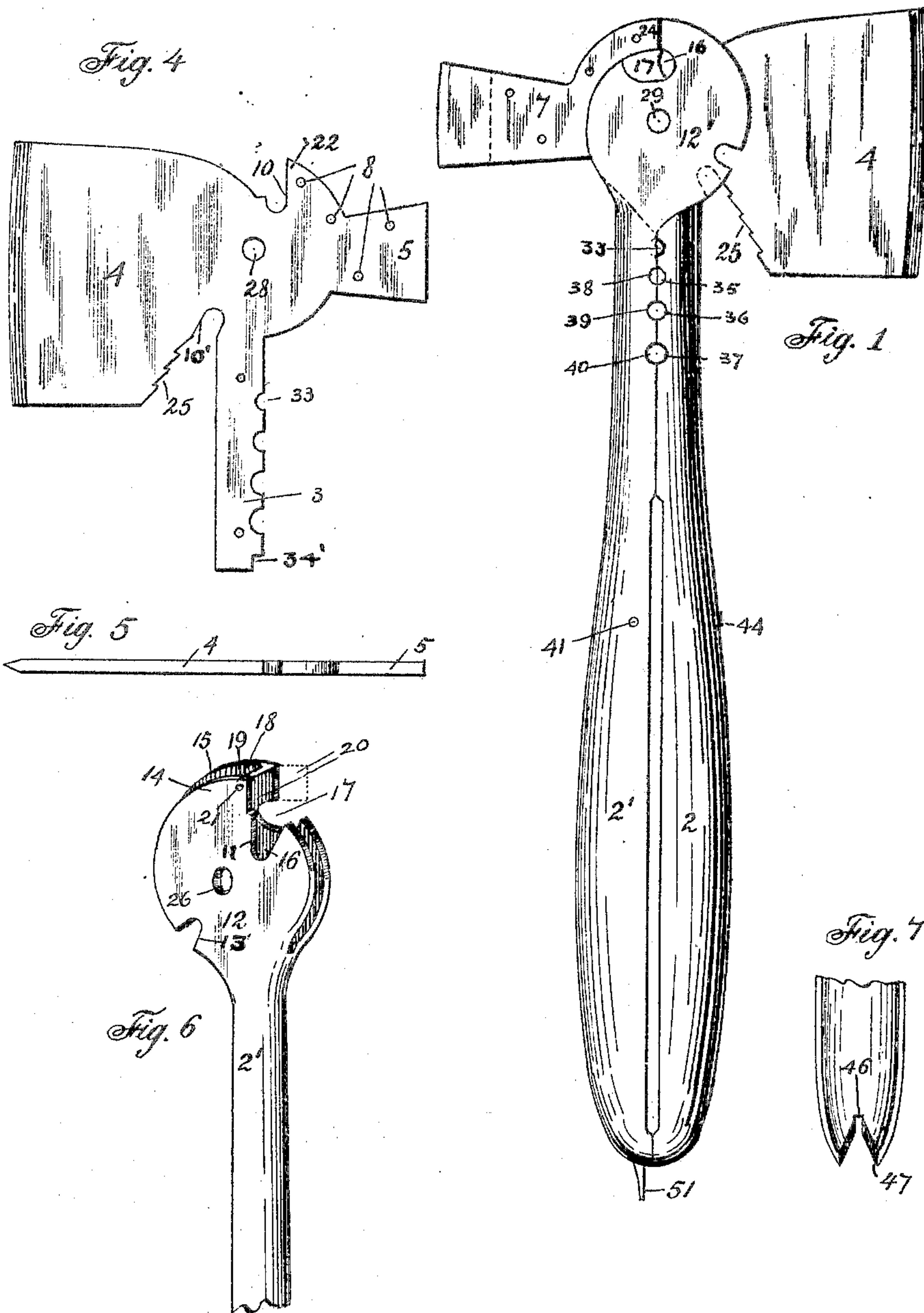


No. 794,057.

PATENTED JULY 4, 1905.

J. M. SULLIVAN.
COMBINATION TOOL.
APPLICATION FILED JULY 29, 1904.

2 SHEETS—SHEET 1.



Witnesses
Robt. Klotz
Paul G. Linnert.

Inventor
James M. Sullivan
By J. Warner Decker
Atty.

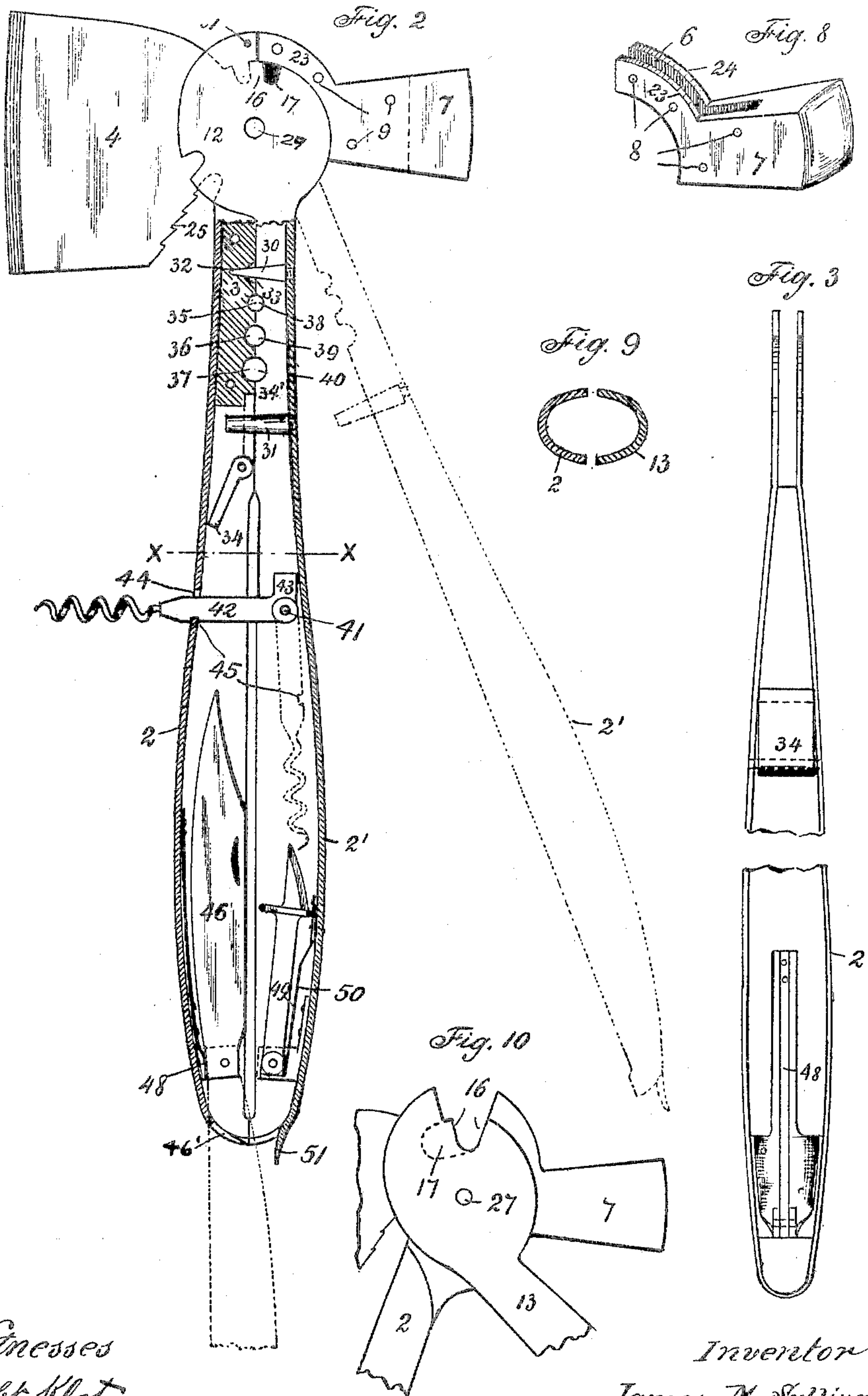
No. 794,057.

PATENTED JULY 4, 1905.

J. M. SULLIVAN.
COMBINATION TOOL.

APPLICATION FILED JULY 29, 1904.

2 SHEETS--SHEET 2.



Witnesses
Robt. Klotz
Paul Gerhardt.

Inventor
James M. Sullivan

By *James D. Deakston*
Att'y.

UNITED STATES PATENT OFFICE.

JAMES M. SULLIVAN, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF
TO GEORGE E. CAUGHEY, OF CHICAGO, ILLINOIS.

COMBINATION-TOOL.

SPECIFICATION forming part of Letters Patent No. 794,057, dated July 4, 1905.

Application filed July 29, 1904. Serial No. 218,639.

To all whom it may concern:

Be it known that I, JAMES M. SULLIVAN, a citizen of the United States, residing at Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Combination-Tools, of which the following is a specification.

This invention relates to combination-tools, and has particular reference to tools having a pair of pivoted levers coöperating movably and immovably with relation to each other either as a single handle or a pair thereof.

The particular objects of the invention are to provide a novel, light, strong, and comparatively inexpensive construction wherein the body of the tool and the major portion of the tool elements associated therewith may be stamped out for the purposes of effecting savings in cost of manufacture, eliminating as much weight as possible, and properly distributing the weight of the tool as a whole; to provide a compact tool not only adapted for general household use, but especially adapted for the needs of sportsmen or camp life, which shall embody the largest possible number of utilities within a minimum of space, and to provide a handle, or a pair thereof, which will serve as a casing for the small tools in the combination, protecting the user against injury thereby, as well as protecting the tools themselves when not in use.

Other particular objects of the invention will appear in the subjoined description.

With the above objects in view the invention consists generally in a sheet-metal tool-body having handles curvate in cross-section in the interest of lightness and rigidity.

The invention further consists in a substantially sheet-metal tool-body having a configuration which comprises a plurality of tool elements, each element of one tool coöperating with the elements of another tool.

The invention further consists in an impact-tool composed of pivoted members constructed out of sheet metal.

The invention further consists in a tool-case which forms an operative portion of its contained tools; and the invention further consists in the several novel combinations of tools

or tool elements and their construction hereinafter more particularly described, illustrated in the drawings, and incorporated in the claims.

In the drawings, Figure 1 is an exterior view of a tool embodying my invention. Fig. 2 is a view of the tool, partly in section. Fig. 3 is a broken plan view of the lower handle or lever, showing the pivot-block and tension-spring as they appear in both levers and also showing the punch-plate in operative position. Figs. 4 and 5 are respectively side and edge views of the hatchet-blade. Fig. 6 is a view of the upper handle or lever, partly broken off. Fig. 7 is a view of the claw end of the lower lever, showing recess for the back of the knife-blade when in its open position. Fig. 8 is a view of the poll or striking-head of the hatchet. Fig. 9 is a view representing a cross-section of the two levers substantially on line X X of Fig. 2. Fig. 10 is a side view of a portion of the head of the tool.

Referring to the drawings, 2 and 2' represent, respectively, the lower and upper handle or lever, together forming a helve of the usual configuration. These levers are constructed out of sheet metal and are curvate in cross-section. To the lever 2 is riveted or otherwise secured the shank 3, forming an integral portion of the stamped hatchet-blade 4, which has a poll portion or shank 5, adapted for the slot or recess 6 of the poll proper, 7. The poll portions 5 and 7 have registering holes 8 for the rivets 9, by means of which said portions are fastened together. The blade 4 has recesses providing cutting edges 10 and 10', the former coöperating with the edge 11 of the face-plate 12, forming the pivoted portion of the upper lever or handle 2' to provide a wire-cutter. The edge 10' coöperates with the edge 13 in a similar manner. The upper handle 2' is stamped out of a single piece of sheet metal, including face-plates 12 and 12' engaging both sides of the blade 4, and said plates have jaw extensions 14 and 15. The side 14 has a wire recess 16 and the side or extension 15 has a similar recess 17, the latter being cut deeper than the horizontal plane of the cutting edge 11, as clearly shown in Figs. 2 and 10, to prevent

the lower edge of said recess 17 from meeting the edge 10, and thus cut a wire in two places.

18 and 19 represent jaw portions of the extensions 14 and 15, and the portion 19 is extended, as shown by dotted lines at 20, and the extended portion or lip 20 is bent at right angles to the face-plate 12', so as to bridge the space between it and the plate 12 and provide one of the jaw-faces of a pair of pincers. To secure additional strength and rigidity for this jaw portion, I clamp the portions 18 and 19 together with a rivet 21. An extension 22 of the edge 10 on blade 4 serves as a portion of the opposite jaw-face, the other portions of said face being provided by extensions 23 and 24 on the poll 7, which are of the same thickness as the plates 12 and 12'. The blade 4 has a serrated rear edge 25, disposed at an angle to the handle 2 and shank 3, with which said serrated edge coöperates to provide an alligator-wrench. Registering apertures 26, 27, and 28 in the plates 12 12' and blade 4, respectively, contain the pivot 29 of the tool.

Referring now to the tool elements associated with the hollow handles or levers for which the latter serve as a protecting casing, into the upper handle or lever 2' is secured a sewing-machine-belt punch 30 and an ordinary hollow-faced leather-punch 31, provided with reduced threaded portions, as shown, engaging the correspondingly-threaded apertures in the handle. The shoulders formed on said punches by reducing the threaded portions support same firmly against the body of the lever and relieves the threads or their equivalent fastening means of all strain when operating the punches. The shank 3 is provided with an aperture 32 for the point of the punch 30, and immediately over said aperture is a concave recess 33 for an ordinary round sewing-machine belt. The punch 31 is provided with a stop-plate 34, which is pivoted between the opposite walls of the concavity in handle or lever 2. To permit the two levers to come together as a helve, the plate 34 is normally turned back on its pivot out of the way of the punch. (Indicated by dotted lines, Fig. 2.) A notch 34' cut in the end of shank 3 provides a ledge or recess supporting the free end of punch-plate 34 when same is in position to be engaged by the punch 31. The punch 31 is designed to be of such length as to hold the levers 2 and 2' sufficiently far apart at their grip ends to allow room between said ends for the fingers of the user's hand when grasping the levers in order that said punch may be more advantageously operated. Semicircular recesses 35, 36, and 37 in the edges of lever 2 and similar recesses 38, 39, and 40 in the lever 2' provide a series of wire-grips of varying diameters. Pivoted at 41 within the upper handle or lever 2' is a corkscrew 42, normally occupying the position shown by dotted lines. The pivoted end thereof is elbow-shaped, providing a lug 43, which bears against the in-

ner wall of the lever 2', which serves as a spring to hold the notch 45 in engagement with the edge of the opening 44 through the lower lever 2 when the corkscrew projects therethrough in its open position. (Shown in full lines in Fig. 2.) In the hollow of the free end of lever 2 is pivoted a knife-blade 46, the back of which is supported in a slot 46', forming a portion of the claw 47. An ordinary knife-spring 48 is tensioned against the shank portion of said knife and prevents accidental opening or closing of the latter. The upper lever 2' is similarly equipped with a can-opener 50, provided with a spring 49, similar to spring 48. A recess in the handle or lever 2' for the can-opener when in its open or extended position is provided by a stamped-out lip, serving as a screw-driver 51.

The construction described in the foregoing obviates expensive forgings. The curvature of the sheet-metal levers 2 and 2' insures rigidity with a minimum of weight in proportion to the weight of the striking-head substantially to the same extent as where a wooden helve is employed.

While I have shown the levers constituting the helve as slightly separated throughout a portion of their meeting-line to more clearly illustrate the division, they will in practice preferably be made to fit closely together throughout to present an unbroken outer surface of the helve. The curvate form of the latter also contemplates its function of a tool-case for a variety of small tools adapted for mounting within the case to be operated by the latter in the capacity of a handle or a pair of levers, or merely assembled therewithin when said tools are not in use, as in a small tool-chest. The interior arrangements for these levers are therefore susceptible of numerous modifications. By providing the notch 45 on the shank of the corkscrew the latter also serves as interlocking means for the levers, and it is obvious that the spiral portion of said screw may be omitted as an integral portion or secured to the shank portion in any suitable manner to avoid its projection when the locking means alone are desired.

The poll portion 7 may be either cast or forged, and by providing it with a slot to engage the blade 4 the hatchet-head may also be stamped out to the end of cheapening the cost of manufacture, and the head of the hatchet from cutting edge to face of poll is substantially a solid body of metal, relieving the pivot of strain while capable of delivering solid blows.

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

1. A pair of sheet-metal levers concaved toward each other and normally constituting a rounded helve, one of said levers terminating in a sheet-metal fork having the form of face-plates 12, a tool-head secured to the other lever and pivoted between said face-plates, the

latter and said tool-head having recessed portions which coöperate as relatively movable jaws.

2. A pair of sheet-metal levers, each curvate in cross-section and one thereof having a forked portion formed into a pincer-jaw, a tool-head pivoted between the members of said jaw and rigidly secured to the other lever, said tool-head having a coöperating jaw and a shank held between said levers, the latter normally having the configuration of, and serving as, a rounded helve.

3. The combination of a tubular helve stamped out of sheet metal, said helve consisting of two levers curvate in cross-section, one of said levers having integral therewith a forked portion provided with a jaw, a tool-head secured to the other lever and pivoted between the members of said forked portion, said tool-head having a jaw portion coöperating with said first-mentioned jaw.

4. The combination of a pair of sheet-metal levers stamped curvate in cross-section, said levers arranged to meet at their edges to provide a tubular helve of usual configuration, one of said levers having integral therewith a forked pincer-head having a jaw portion, and a tool-head provided with a shank or tang portion secured to the other lever, said tool-head being pivoted in the fork of said pincer-head and also provided with a jaw.

5. The combination with a tool-head consisting of a single plate of metal, of a pair of levers concaved toward each other, each of said levers stamped out of a single sheet of metal and one thereof having a forked portion pivoted to and embracing said head and having the integral lip or jaw-face 20, the other lever rigidly secured to the shank 3 of said head, and means for locking said levers together against relative movement.

6. The combination of a hatchet-head formed with a blade 4, poll-shank 5, recesses 10 and 10' which provide the jaws 22 and 25, and handle-shank 3 all in one integral plate of metal; the recessed poll 7 riveted to the poll-shank 5, a pair of curvate sheet-metal handles,

one thereof being rigidly secured to the shank 3 and the other formed with face-plates 12 between which said head is pivoted, the handle having the face-plates 12 having also jaw portions which coöperate with the jaws 22 and 25.

7. In combination, a hatchet-head formed with the blade 4, poll-shank 5, recesses which provide jaws 22 and 25, and handle-shank 3, all in one integral plate of metal; the recessed poll 7 riveted to the poll-shank 5; a pair of curvate sheet-metal handles, one thereof rigidly secured to the shank 3 and having the opening 44, and the other formed with face-plates 12 between which said head is pivoted, the handle having face-plates 12 being provided with jaw portions which coöperate with the jaws 22 and 25, and a pivoted tool 42, or the like, constructed and arranged to be projected through the opening 44 and lock the handle members together, said tool being supported, when in use, against movement on its pivot, by said handle members.

8. In combination, a hatchet-head formed with the blade 4, jaws 22 and 25, and handle-shank 3, all in a single plate of metal; the recessed poll 7 riveted to the poll-shank 5; a pair of curvate sheet-metal handles, one thereof rigidly secured to the shank 3 and having the opening 44, and the other formed with face-plates 12 between which said head is pivoted; the handle having face-plates 12 being provided with jaws which coöperate with jaws 22 and 25; the knife-blade 46 pivoted between said handles and the catch 42 for securing said handles together against relative movement when said knife-blade is open, said catch and blade being both normally concealed between said handles.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JAMES M. SULLIVAN.

Witnesses:

EDW. R. BARRETT,
GEO. E. CAUGHEY.