

J. S. PALMER.
 Tool for Drawing Sheet-Metal Shells.
 No. 215,536. Patented May 20, 1879.

FIG. 1.

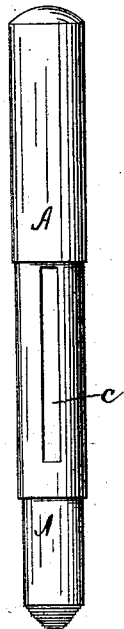


FIG. 2.

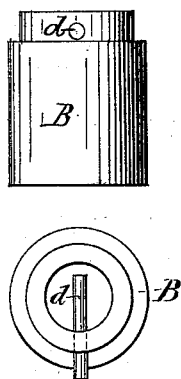


FIG. 3.

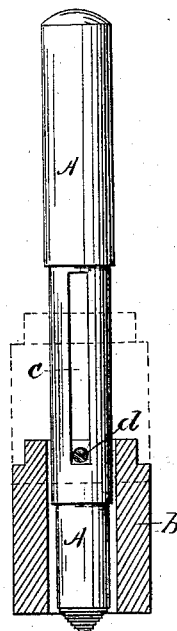


FIG. 4.

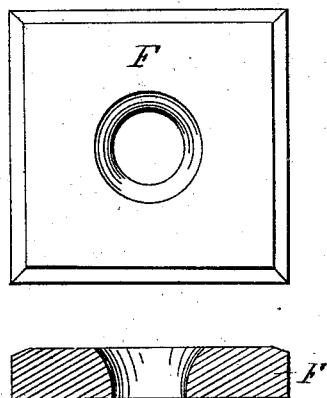


FIG. 5.

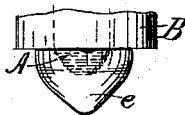


FIG. 6.



FIG. 7.



WITNESSES
Saml R. Turner
Jenn Halsted

By _____

INVENTOR
John S. Palmer
John J. Halsted
 ATTORNEY

UNITED STATES PATENT OFFICE.

JOHN S. PALMER, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN TOOLS FOR DRAWING SHEET-METAL SHELLS.

Specification forming part of Letters Patent No. **215,536**, dated May 20, 1879; application filed February 6, 1879.

To all whom it may concern:

Be it known that I, JOHN S. PALMER, of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Tools for Drawing Sheet-Metal Shells; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My present invention is a further improvement on that shown and described in my Patent No. 211,342, dated January 14, 1879; and it consists in combining, with the drawing-tool for drawing metallic shells, a sleeve surrounding a portion of the same, and adapted to be slid a limited distance thereon, in order to effect a true and level position or adjustment of the shell in its earlier stages of shaping and drawing, and to prevent the tool or punch striking the shell at one side instead of at or about its center.

In the drawings, Figure 1 represents the tool proper as made ready to receive the sliding sleeve; Fig. 2, the sleeve detached; Fig. 3, these two parts united, ready for use, and in these lie my invention. The other figures serve to illustrate its use—Fig. 4 being the customary die-plate for drawing; Fig. 5, an ordinary shell, as shaped or turned up by the first operation; Fig. 6, a shell defectively formed, as it is likely to be at the next operation when made with ordinary tools not having my improved sleeve attachment, to be hereinafter described; and Fig. 7, a shell truly made at the same stage of the operation when made with a tool having my improved construction.

While my improved tool is adapted for making shells of any desired metal, yet I find it especially valuable for, and shall describe it as applied to, the manufacture of shells made of stock plate, such as is suitable for finger-rings, &c., such plate being composed of a base metal surfaced, plated, or overlaid with a more precious metal.

A is the punch or tool proper; B, its sleeve. The body or stock of the part A has a slot, *c*,

made through it to admit a pin, *d*, which is passed through the slot and secured to the sleeve B. The sleeve slides loosely on the tool-stock, and the pin slides freely up and down the slot.

That end of the slot which is nearer the punching or operative end of the tool-stock terminates at such a distance from the extremity of this operative end as that when the sleeve is dropped to its lowest point this tip or extremity shall project beyond the bottom of the sleeve, as shown in Fig. 3, but not far enough to be equal to the depth of the cavity in the shell *e*, so that when this shell is dropped into the plate F and the punch is brought down upon it, the sleeve will not only fall or come in contact with the shell before the punch does, but it will thereby level up the shell to its true and most advantageous position—that is, the top edge of the shell will lie even with the under and level surface of the sleeve. The parts are thus in the best attainable relative position for making perfect work without loss of time, or loss of a shell, or of a large portion of it, and which loss must ensue where the punching-tool, as under the existing practice, is at liberty to act upon the shell when the latter does not lie as it should.

The purpose and effect of the sleeve, it will now be observed, is automatically to turn the shell in the die in case it be not in proper position therein, and to adjust and level it to the required position preparatory to the action of the punch.

Without such sleeve it is necessary, as heretofore practiced, to use the fingers of the workman in the effort to place and adjust every piece or shell perfectly; and as the fingers must remain long enough to do this efficiently, there is great risk at every operation of serious damage to him, as the press is run by power; besides, if a piece be carried through the die-plate unevenly, as illustrated in Fig. 6, it is hardly possible to get it into proper shape again by any of the subsequent drawings.

I have shown the punch or tool as conical-pointed, and with its cone grooved or roughened, and I prefer this form; but it will be evident that the sliding sleeve may be applied to punching-tools having flat or other shaped

ends, dependent on the character of work to be done, the function of the sleeve in relation to the tool and the stock to be treated being the same in either case.

The sleeve may be applied to the tool in any equivalent manner to that shown, so long as it is left free to rise and fall the required distance. For instance, grooves on opposite side of the tool may serve the purpose of the slot, and pins may run in these grooves; or pins projecting from the tool may run in grooves in the interior of the sleeves. The skill of an

ordinary mechanic only would be sufficient for such formal variations.

I claim—

The combination, with a tool for drawing metal shells, of a sleeve, B, attached thereto and arranged to slide thereon, and serving to level the shell, substantially as and for the purpose set forth.

JOHN S. PALMER.

Witnesses:

EBEN W. WATERHOUSE,
GEO. C. TOWNSEND.