This invention relates to securing staples or like handles to tools, such, for example, as shovels, and the object is to provide an improved construction for securing such handles whereby the assembly is facilitated and the resultant tool strengthened. My invention will be well understood by reference to the following description taken in connection with the accompanying drawing, wherein:

Fig. 1 is a central vertical section through the lower part of a shovel of the solid shank type handled in accordance with my invention;

Fig. 2 is a front view of the same with the blade broken away;

Figs. 3 and 4 are sections on an enlarged scale on the lines 3—3 and 4—4 of Fig. 1 respectively; and

Fig. 5 is a section on the same plane as Fig. 4 illustrating a step in the assembly.

Referring to the drawing, I have there shown a shovel of the so-called solid shank type having a blade 8 with which is integrally formed the handle-receiving socket 10. In the present instance the socket 10, for at least a substantial portion of its length, forms an unbroken tube as distinguished from the open-sided sockets as found in the usual shovels of the hollow-back and strap types.

I provide a plate 12, preferably cut from flat sheet metal of adequate thickness but at least free of abrupt changes in cross section, one end portion of which is adapted to extend into the lower portion of the socket and extend from wall to wall thereof, preferably diametrically, the other end projecting outwardly beyond the open end of the socket as shown. The greater dimension of the plate 12 should be disposed in the plane of the normal greatest strain on the tool, in the case of a shovel transversely to the plane of the blade 8. From the edges of that portion of the plate which projects into the socket project lugs 14 having abrupt shoulders on the sides toward the open end of the socket. The socket is provided with suitable slots inwardly from the open end thereof into which the lugs extend to anchor the plate in position.

A wooden handle or stake 16 may be kerfed at its lower end to straddle the plate 12 and extend into the socket 10 at either side of the plate. The upper end of the plate may bottom in the upper end of the kerf and the handle is secured in position by a through rivet 18 passing transversely through the upper end of the plate.

To assemble the plate in the socket the latter may be compressed, as indicated by the arrows in Fig. 5, to permit the plate to be pushed in until the upper shoulder of the lugs 14 passes the upper margins of the slots which are to receive it, when the socket may be permitted to spring back into position. It might be said that the plate and the socket are snapped together. The parts are then in the position illustrated in Fig. 4 with the plate 12 firmly held against withdrawal and its edges supported by the socket walls.

The length of the lugs 14 is such that they terminate substantially flush with the outside of the socket and they may be polished off with the exterior of the socket perfectly smooth presenting no obstructions or projections to the grasping hand of the user.

In the preferred construction of shovel here illustrated the plate 12 extends only a relatively short distance above the socket, as, for instance, two to three inches, the greater portion of the length of the stake being an unbroken cylinder of wood.

It will be seen from the description that the assembly of the parts is a very simple operation. The handle is very rigidly secured and the resultant tool is strong since the plate 12 in effect extends the length of the socket several inches up the handle at very slight cost and with negligible increase in weight. The wooden stake is not greatly weakened by the removal of fibers at the kerf which receives the plate as compared with other methods of securing handles. The exterior of the tool is smooth without projections to injure the grasping hand. The fitting of a new handle in case the original one is broken is easy.

I am aware that the invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof, and I therefore desire the present embodiment to be considered in all respects as illustrative and not restrictive; reference being had to the appended claims rather than to the foregoing description to indicate the scope of the invention. I claim:

1. A tool having a blade and an unbroken tubular handle-receiving socket extending from an edge thereof, a plate having a part entering the socket and extending across the same from wall to wall thereof and a part extending beyond the socket, the plate having lugs on its opposite edges and the socket wall having slots inward from the end thereof receiving the lugs, and a handle straddling the plate and entering the socket at either side thereof and secured to the plate beyond the socket.

2. A tool having a blade and an unbroken
tubular handle-receiving socket extending from an edge thereof, a plate free of abrupt changes in transverse section having an end entering the socket and extending across the same from wall to wall thereof and an end extending beyond the socket, the socket wall having slots inward from the end thereof and the plate having lugs extending from its opposite edges having abrupt shoulders facing the open end of the socket, the lugs being housed in said slots and terminating substantially flush with the outer surface of the socket, and a handle straddling the plate and entering the socket at either side thereof and secured to the plate beyond the socket.

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