(No Model.)

F. A. STEGNER.

WOODEN SHOVEL.

No. 281,158. Patented July 10, 1883.

Fig. 1.

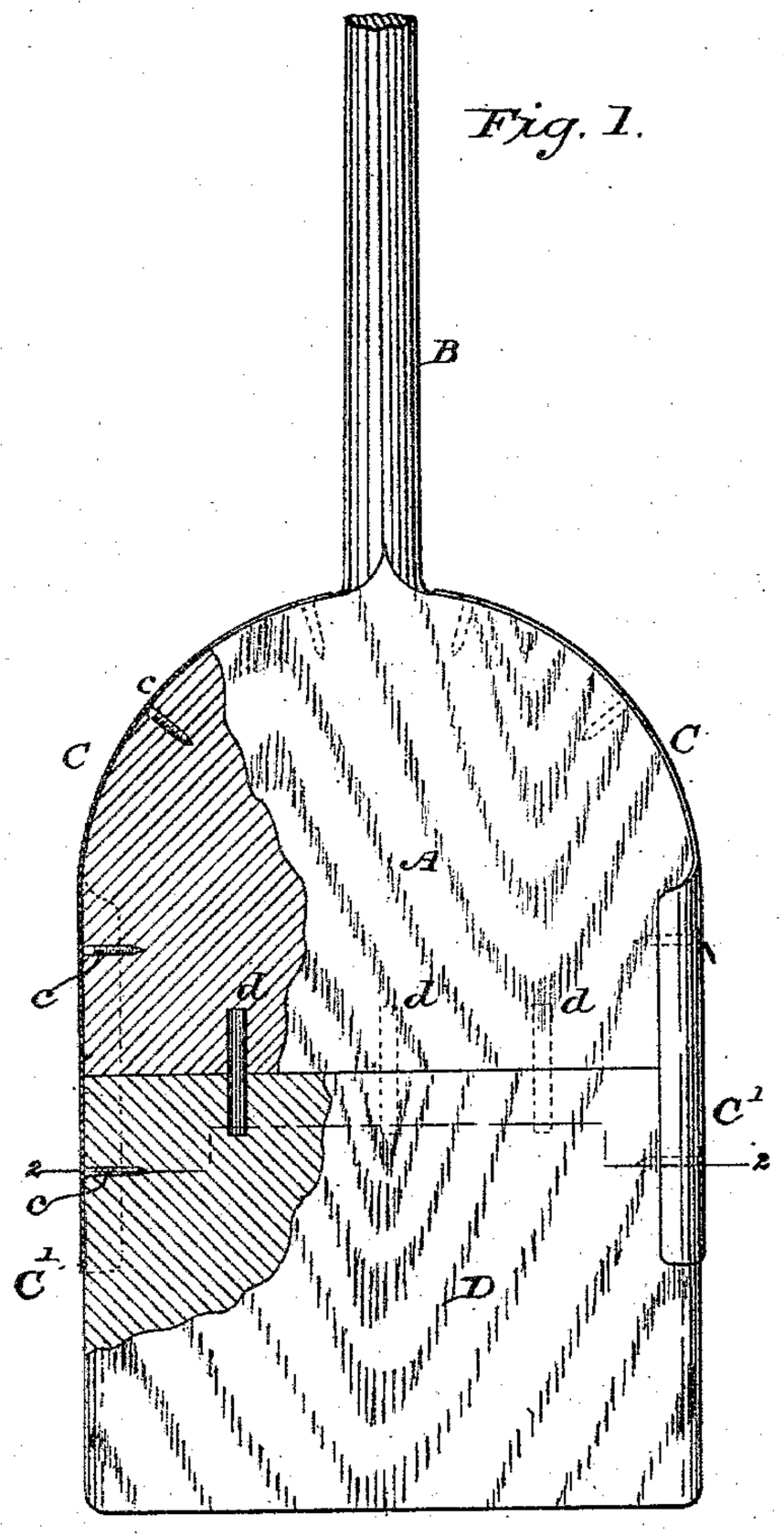


Fig. 2.

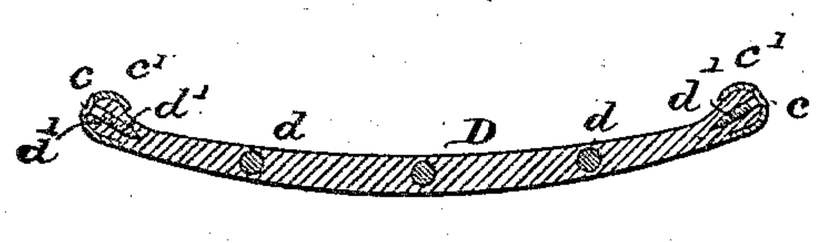


Fig. 3.

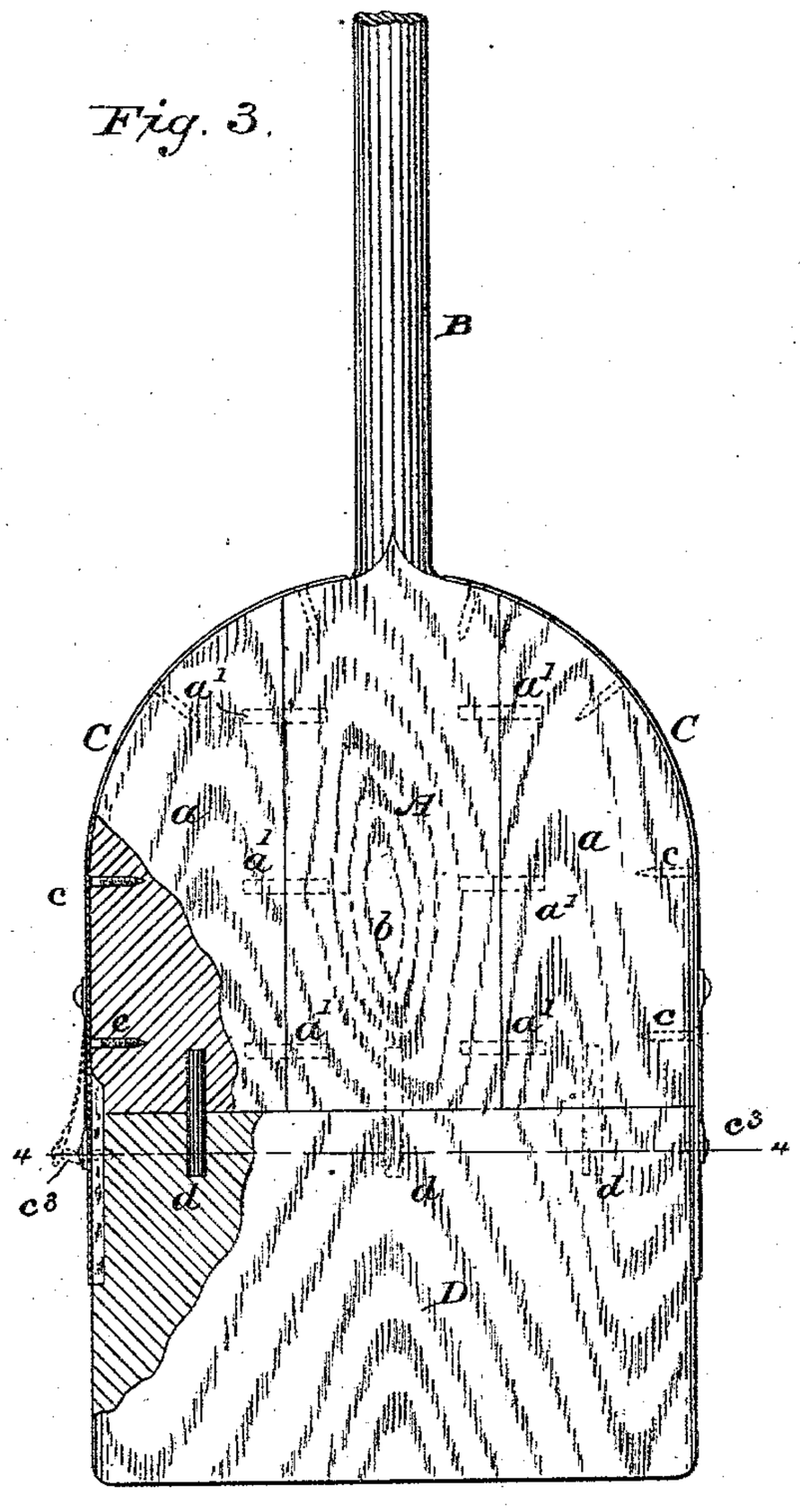
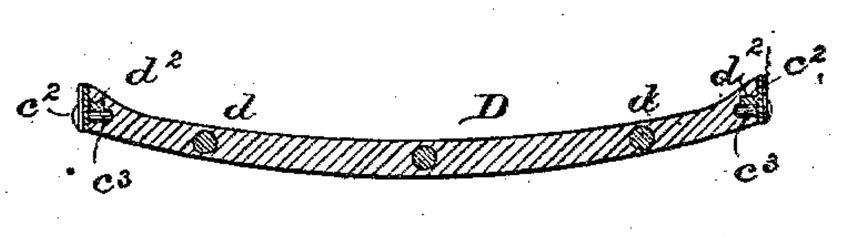


Fig. 4.



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WOODEN SHOVEL.

SPECIFICATION forming part of Letters Patent No. 281,158, dated July 10, 1883.

Application filed March 15, 1883. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK A. STEGNER, of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Wooden Shovels, of which the following is a specification.

The invention relates particularly to that class of wooden shovels termed "malt-shovels," and used for the turning of grain in the malting-chamber or elsewhere, in preparing it for brewing, but is adapted for very general application where wooden shovels are used.

Heretofore these malt and kindred shovels have been made either of a single piece of wood, both handle and blade being integral, which involved great waste and loss of material, since the piece from which the shovel was formed must be selected with reference to procuring both handle and blade practically without flaw, and much or all of the breadth alongside the handle must be sacrificed; or else the blade has been made of one piece, of sufficient width and length for the purpose, and of course chosen, as before, with reference to its freedom from flaw or blemish, and the handle of a separate piece riveted to the blade. In these latter, besides the still present margin of waste, the joint between handle and blade is liable to soon become loose, and the metallic fastenings necessarily used rapidly increase the defect by their constant abrasion as the parts work against each other. When the blade is of an integral piece, also, the shovel becomes worthless as soon as the edge or toe is worn thin or uneven, and must be thrown away. To remedy this it has heretofore been proposed to apply a removable toe, which, when worn, can be detached and replaced by another. In order to attach this toe, a metallic socket has been riveted to the lower edge of the blade, extending transversely thereacross and receiving the rear or inner part of the toe-piece, which has invariably been of slight depth, in its groove or dovetail, which runs from side to side of said blade. There is thus a metallic joint the full width of the blade, and besides the greater cost due to such a construction and the wear incidental to the wooden surfaces from the abrasive action of the material being turned or shoveled will be the loss of elasticity and the additional wear due to this socket and its securing-rivets; when, too, the union of said socket with the blade once becomes insecure, the shovel is practically beyond repair.

Instead of the constructions above explained, I propose to form the wooden blade of the shovel of several pieces, united by dowel-pins or equivalent means, and bound by metallic straps on the lateral edges, the handle being a prolongation of a central piece bound up with others in the body of the blade. This permits small pieces of material, which are readily found without defect or blemish, and which otherwise would be wasted, to be worked up in the shovel; or, in cutting large stock, it enables all defections to be avoided and the perfect parts to be laid out and utilized to the greatest economy and advantage. It also insures an all-wood joint between the handle and blade of the strongest character, making the handle practically integral with the blade, and distributing the strain as if it were actually integral. I also propose to unite to a handle and blade, either of such construction or formed in one integral piece or otherwise, a removable toe-piece, connected with the edge of the blade by means of dowel-pins, and further secured and fastened by tongued or recessed prolongations of metallic binding-straps, which embrace the lateral edges of both blade and toe-piece, and by catches or screws passing through said prolongations into the material of the toe-piece.

In the drawings, Figure 1 is an elevation of a wooden shovel, wherein, for the purpose of illustration, the handle and blade are integral, showing one form of binding-strap and fastening for securing the removable toe-piece; and Fig. 2, a transverse section of the same. Fig. 3 is a like elevation of a shovel, wherein the handle and blade are made in a number of pieces, and, by way of further illustration, a different but equivalent form of binding-strap and catch or fastening for retaining the removable toe-piece is shown; and Fig. 4, a transverse section of the same.

A is the blade, and B the handle, of a wooden shovel. So far as the use of the removable toe is concerned, these may be made together, of a single piece, as in Fig. 1, and the toe secured thereto by either form of binding-strap shown in the figures and hereinafter described, or

their equivalents. For reasons previously given it will, however, be often desirable to construct handle and blade of multiplex pieces; and in Fig. 3 I have indicated the best mode of doing this as yet known to me. In said figure the blade is composed of three pieces—a central piece, *b*, integral with the handle, and two flanking pieces, *a*—rights and lefts—joined to the first by dowel-pins *a'* through their meeting edges. To more firmly bind them together metallic straps C are applied to the external lateral edges of the blade, running from the base of the handle proper down toward the working-edge, and secured by nails or screws *c*, passing into each individual piece. Should a removable toe not be employed, these three pieces, with their binding-straps, may constitute the whole shovel; or a fourth permanent piece, corresponding to the toe D herein shown, and, like it, integral the whole width of the blade, may be applied at the end of the three sections, and united with them by dowel-pins—such as the pins *d*—passing into each section, thus preventing said sections from spreading apart at their lower ends. The straps C will of course be prolonged to embrace the toe-piece, and secured thereto by nails or screws. Preferably, however, the toe-piece will be removable, whether from this sectional blade or from the integral blade, and to this end it will not be glued or permanently fastened to the dowel-pins *d*, projecting from the bottom edge of the blade, but will be provided with sockets to snugly receive the ends of said pins; else, but less conveniently, the pins will be permanently secured to the toe-piece and sockets formed in the blade. It will also have at its lateral edges either a bulge or rib, *d'*, to take into the quasi-tubular sleeves *c'*, afforded by extensions or prolongations of the metallic binding-straps, or an equivalent groove, d^2, to receive a tongue or dovetail, c^2, from such extensions. Whichever is used, the sleeve or the tongue, it will be advisable to give it sufficient length to inclose or take into a portion of the blade proper, so that the parts may be well braced at the point of union. As thus constructed, after the toe has been inserted and driven home, it will be secured for the period of its usefulness either by screws *c*, such as before mentioned, passing through the binding-strap and into its body, or by spring pins or catches c^3, entering into it through said straps, and composed, for example, of a plate-spring riveted at one end to the strap, and a pin borne on the other end of said spring and entering through a snug bore in the strap into a socket in the toe-piece. When the toe has become so worn as to no longer be of use, the fastening-screw will be removed or the catches withdrawn, and it will be pulled out and replaced by a new one of identical shape or construction, which will be secured by the screws or catches, as before.

It is evident that instead of the dowel-pins connecting the blade and removable toe-piece a tongue and groove extending transversely along the edges of the two may be used, the lateral binding-straps remaining the same; and, also, that when dowel-pins are employed the position of the metallic straps may, under some circumstances, be changed to bring them beneath the tongue and toe-piece, instead of at the lateral edges. Such modifications, therefore, although not deemed so invariably desirable as the hereinbefore-described constructions, are to be considered within the principle of my invention.

I claim as my invention—

1. A wooden shovel having its blade composed of central and flanking sections, substantially as described.

2. A wooden shovel having its blade composed of central and flanking sections, and the handle integral with the central section, substantially as described.

3. A wooden shovel having its blade composed of central and flanking sections, the handle integral with the central section, and the whole bound by metallic straps on the external lateral edges of the blade.

4. The combination, with a wooden shovel having its blade composed of central and flanking sections united together, of a toe-piece integral the whole width of the blade and united to the foot of each section by a dowel pin or pins.

5. The combination, with a wooden shovel having its blade composed of central and flanking sections united together, of a toe-piece integral the whole width of the blade and united to the foot of each section by a dowel pin or pins, and metallic binding-straps secured to the lateral edges of the blade and toe-piece.

6. The combination, with a wooden shovel having its blade composed of central and flanking sections united together by dowel-pins, and its handle integral with the central section, of a toe-piece integral the whole width of the blade and united to the foot of each section by a dowel pin or pins, and metallic binding-straps secured to the lateral edges of the blade and toe-piece.

7. The combination, with the blade of a wooden shovel, of a removable toe-piece having sockets to receive dowel-pins from the foot of said blade, and metallic straps and fastenings binding it to the blade when it has been driven home upon the dowel-pins.

8. The combination, with the blade of a wooden shovel, of a removable toe-piece having sockets to receive snugly dowel-pins projecting from the foot of said blade, metallic straps secured to the lateral edges of the blade, and receiving and bracing the lateral edges of said toe-piece, and removable fastenings passing through said straps into the material of the toe-piece.

9. The combination, with the blade of a wooden shovel, of a removable toe-piece aligned with said blade along the contiguous edges by suitable guiding and steadying instrumentali-

ties, binding-straps secured to the lateral edge of the blade and embracing the lateral edges of the toe-piece, and fastenings extending through said straps into the toe-piece.

10. The combination, with the blade of a wooden shovel, of a removable toe-piece having sockets to receive snugly dowel-pins from the foot of said blade, and lateral ribs or enlargements, and metallic binding-straps secured to the lateral edges of the blade, and provided with sleeves which take over and clasp said ribs, and also clasp a portion of the blade at the junction of the toe-piece therewith.

11. As a new article of manufacture, a wooden toe-piece for wooden shovels, having sockets formed therein for dowel-pins secured to the blade, and lateral ribs or grooves to receive sleeves or tongues from metallic binding-straps, as set forth.

FREDERICK A. STEGNER.

Witnesses:

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