T. B. De FOREST.
Shovel.

No. 202,524. Patented April 16, 1878.

fig. 1

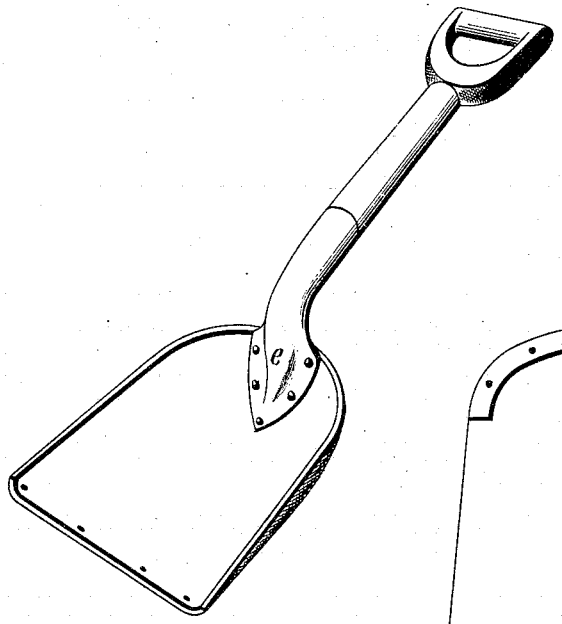


fig. 3

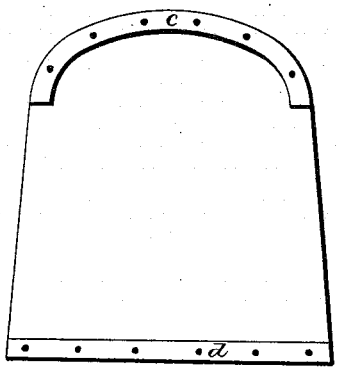
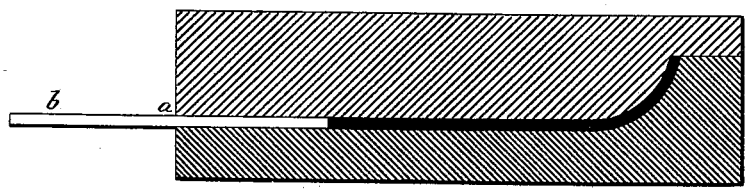


fig. 2



Witnesses.
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H. A. Tillard.

Thos. B. De Forest
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UNITED STATES PATENT OFFICE.

THOMAS B. DE FOREST, OF BIRMINGHAM, CONNECTICUT.

IMPROVEMENT IN SHOVELS.

Specification forming part of Letters Patent No. **202,524**, dated April 16, 1878; application filed January 14, 1878.

To all whom it may concern:

Be it known that I, THOS. B. DE FOREST, of Birmingham, in the county of New Haven and State of Connecticut, have invented a new Improvement in Shovels; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a perspective view; Fig. 2, the die; Fig. 3, rear view of the blade.

This invention relates to an improvement in the manufacture of wood shovels, scoops, &c., such as are used for shoveling grain, snow, &c., and in which a light article is desirable; and it consists, principally, in constructing the blade of a scoop or shovel from a single thin piece of wood, worked into shape by bending in formers or dies, as more fully hereinafter described.

The shovel represented is of the scoop character, such as are used for shoveling grain. Preparatory to making the blade, a form or die is constructed, having a cavity corresponding to the shape of the blade to be produced—such, say, as represented in Fig. 2 in longitudinal section—the edge end *a* being open. A thin plate of wood, of a size corresponding to the size of the article to be produced, is steamed or otherwise temporarily softened, and then introduced into the open end of the form, as seen in Fig. 2, *b* being the wood. Power is applied to force this blank or plate into the former, bending it longitudinally and transversely. It will gradually assume the shape of the former until its shape is perfect. The blank is then thoroughly dried, either in this former or a frame-work which will retain it in the shape given it by the former, and the blade is complete, to receive the handle. This peculiar process of bending will constitute another application.

To support and sustain the shaped blade, a metallic stay, *c*, is attached around the upper or handle end of the blade, and a similar stay, *d*, across the edge of the blade. The handle is best attached by metallic socket *e*, such as patented to this applicant, dated June 16, 1874, No. 152,085; but other sockets may be applied, or the handle may be attached by the usual strap, or otherwise applied.

It will be understood that this application is intended to include shovels and scoops, when made in like manner, irrespective of the use to which they are to be applied.

I claim—

1. A shovel-blade made from a single piece of wood, bent both longitudinally and transversely into shape to form the blade complete, substantially as described.

2. A wooden shovel having the blade formed complete, from a single piece of wood, bent both longitudinally and transversely into the required shape to form the blade complete, combined with one or more metallic stays, with a handle attached to the blade, substantially as described.

THOS. B. DE FOREST.

Witnesses:
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