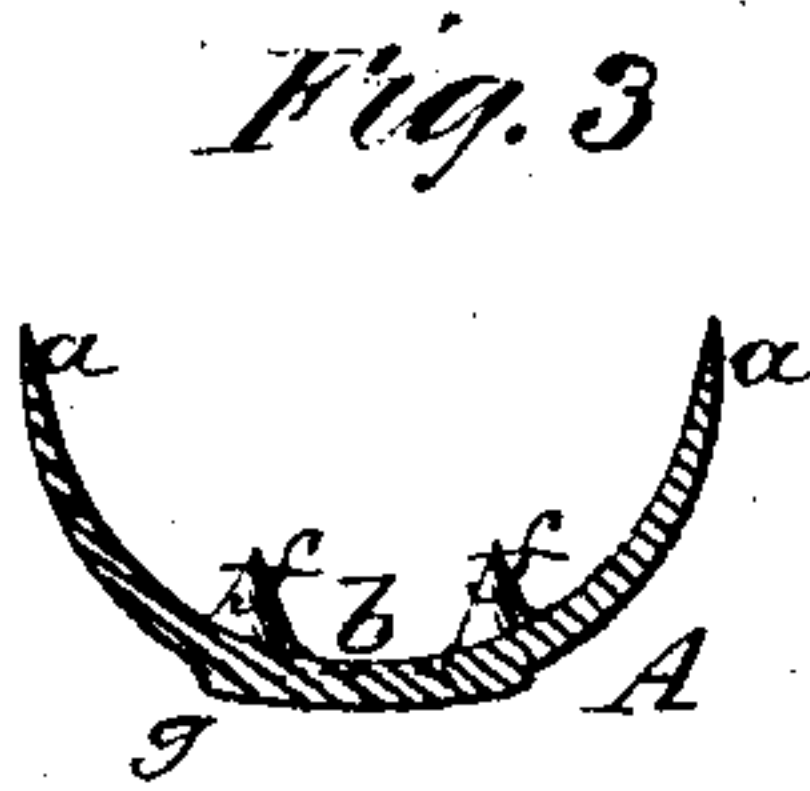
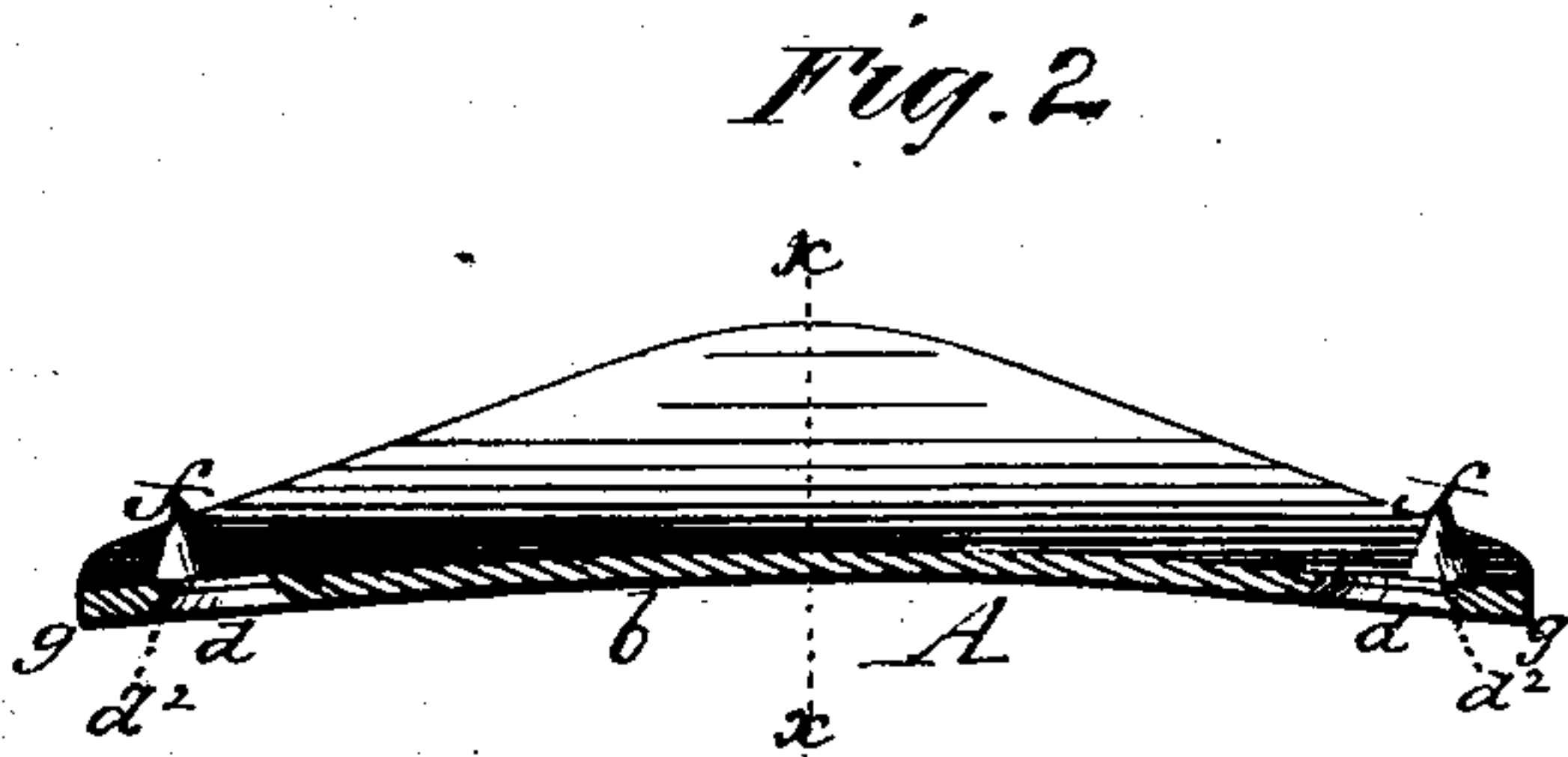
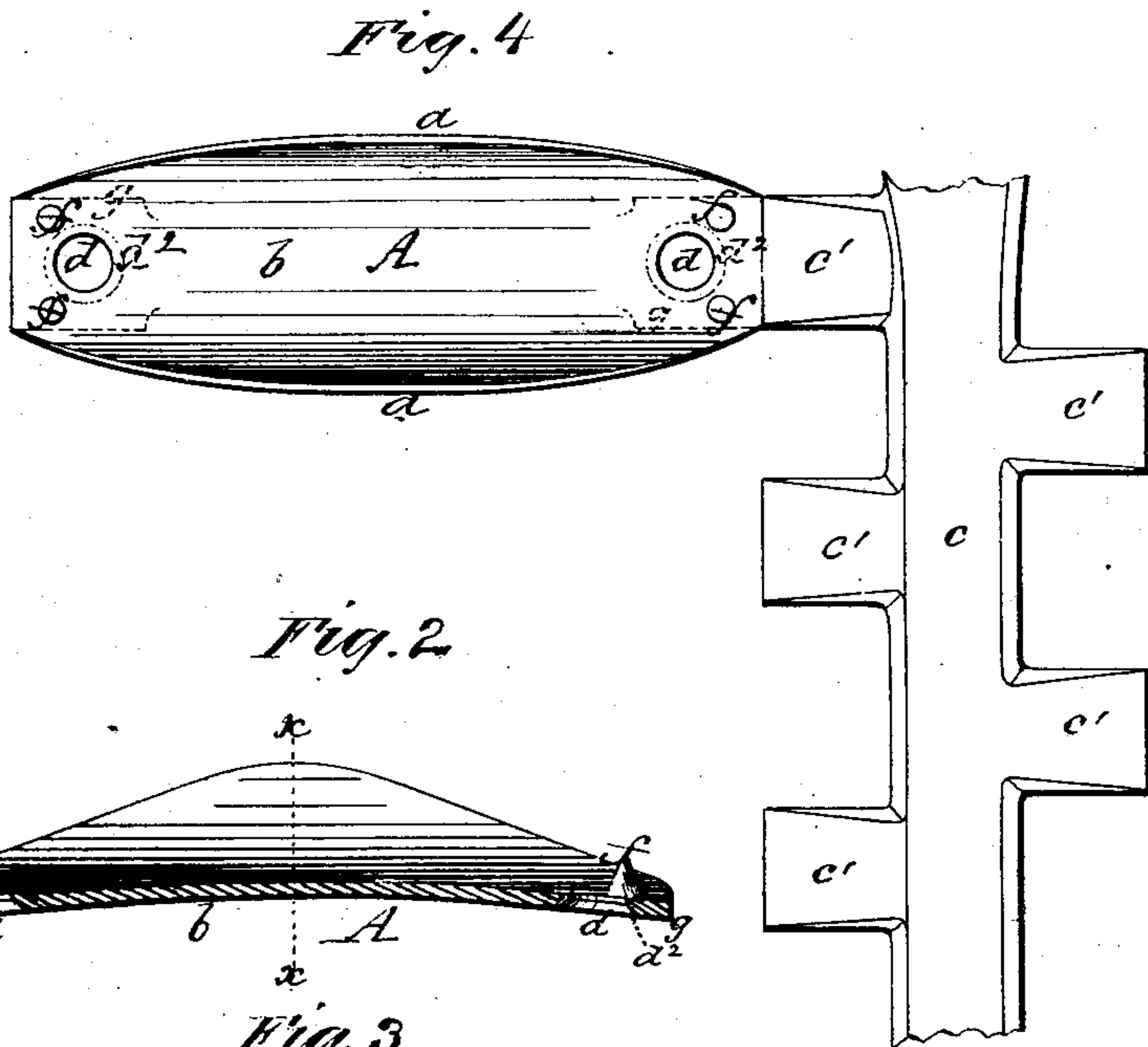
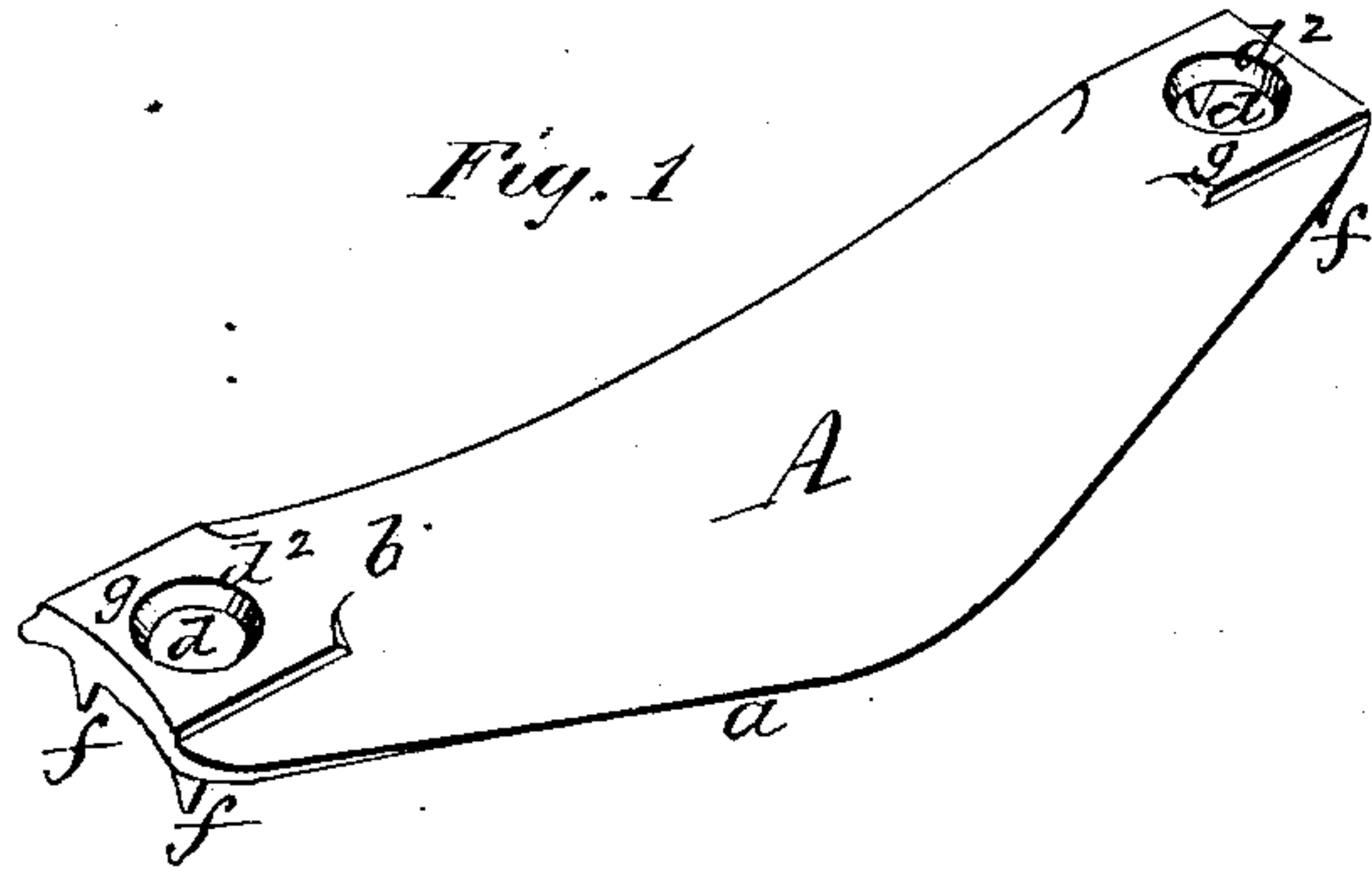


J. IVES.
Felloe-Joint Plate.

No. 163,495.

Patented May 18, 1875.



Witnesses.
James Martin Jr.
J. N. Campbell.

Inventor.
James Ives
by
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UNITED STATES PATENT OFFICE.

JAMES IVES, OF MOUNT CARMEL, CONNECTICUT, ASSIGNOR TO IVES,
WOODRUFF & CO., OF SAME PLACE.

IMPROVEMENT IN FELLY-JOINT PLATES.

Specification forming part of Letters Patent No. **163,495**, dated May 18, 1875; application filed
August 5, 1874.

To all whom it may concern:

Be it known that I, JAMES IVES, of Mount Carmel, county of New Haven and State of Connecticut, have invented a new and Improved Malleable-Iron Felly-Joint Plate; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1 is a perspective view of my malleable-iron felly-joint plate. Fig. 2 is a longitudinal section. Fig. 3 is a transverse section in the line *x x* of Fig. 2. Fig. 4 is a plan illustrating how the felly-plates of my construction are cast attached to a gate-bar in the process of casting them.

The nature of my invention consists, first, in a malleable-iron felly-joint plate, cast in segmental form of the ordinary thickness from end to end along its central or bottom portion, and from said portion of a gradually reduced thickness, so that the edges of the sides will be almost flush with the sides of the fellies without being much embedded into the wood, said joint-plate having nut-seats of sufficient thickness for countersunk bolt-holes to be cast through them.

By this feature of my invention I am enabled to make as good if not better felly-joint plates from cast metal as are now generally cut out from wrought metal without the inconvenience and objection of having the edges of the sides as thick as the body or bottom portion, and also without the objection arising from burrs being formed on the wrought plate where the bolt-holes are punched through the metal, such burr, in connection with the burr which is usually formed around the hole in the nut by cutting the screw, preventing the nut from coming down to its proper place upon the plate.

Second, my invention consists in dowel-pins on the concave side of the joint-plate on each side of the bolt-holes, for the purpose of preventing the wood of the fellies from being split by the bolts, and keeping the joint of the felly from moving sidewise, and assisting the bolts in keeping the plate from shaking loose.

To enable others skilled in the art to understand my invention, I will proceed to describe it.

My mode of making the plate A of malleable iron is as follows: I prepare a mold, which will turn out a casting with thinned sides *a a*, and a thick bottom, *b*. That part of the mold which is to produce the thickest part of the article I terminate with square ends, and connect one of these ends with a gate similar to the casting *c c'* which is formed in this gate. This gate has beveled branches, one for each mold for a joint-plate, as shown. In order to attach the mold for the joint-plate to the gate-mold it is necessary to make the ends of the joint-plate mold much thicker than the portion thereof which forms the thinned edges, so that the metal will run around the bolt-holes and fill out the mold for the plate, and also that there shall not be a liability of a break occurring between the gate and the plate portions of the molds, and thereby spoiling the plate. By having the ends of the plate square, and attached to the thinnest end of the branches of the gate, instead of round, as in the case of wrought-iron plates, I secure a straight line of fracture or separation, and the plates can be knocked off in a condition which will not require them to be finished with a wheel. In the mold I provide for making the bolt-holes *e* with countersinks *d²*. I also provide for casting pointed dowels *f f* on the concave surface of the plate. These dowels are out of line with the bolt-holes, and at each end of the plate. They may be at other points if deemed best. The felly-plate being thick at its bottom and near its ends, allows nut-seats *g g* to be formed at its ends.

It will be understood that the edges of the malleable-iron felly-joint plates are so thin that it would be impossible to attach them to a gate; and if this were practicable, another difficulty would be encountered—they could not be broken off from the gate with their curved edges finished enough to answer to be sent out to the trade.

The cast malleable plates which I produce may require to be hammered slightly against the face of the wooden fellies in order to have them entirely flush with the surface.

I am aware that a wrought-metal felly-joint plate has been made with a thick middle portion from end to end, and with thinned or tapered wings and flat nut-seats, and therefore do not claim such wrought-metal plate as my invention; but

What I do claim is—

1. The new article of manufacture, viz., a felly-joint plate made of malleable cast metal, and with tapered sides or wings, bolt-holes

and nut-seats, all as and for the purpose set forth.

2. A cast-iron felly-joint plate, having dowel-pins, tapering wings, bolt-holes, and nut-seats formed in the manner and for the purposes described.

JAMES IVES.

Witnesses:

ELAM J. DICKERMAN,
LYMAN H. BASSETT.