

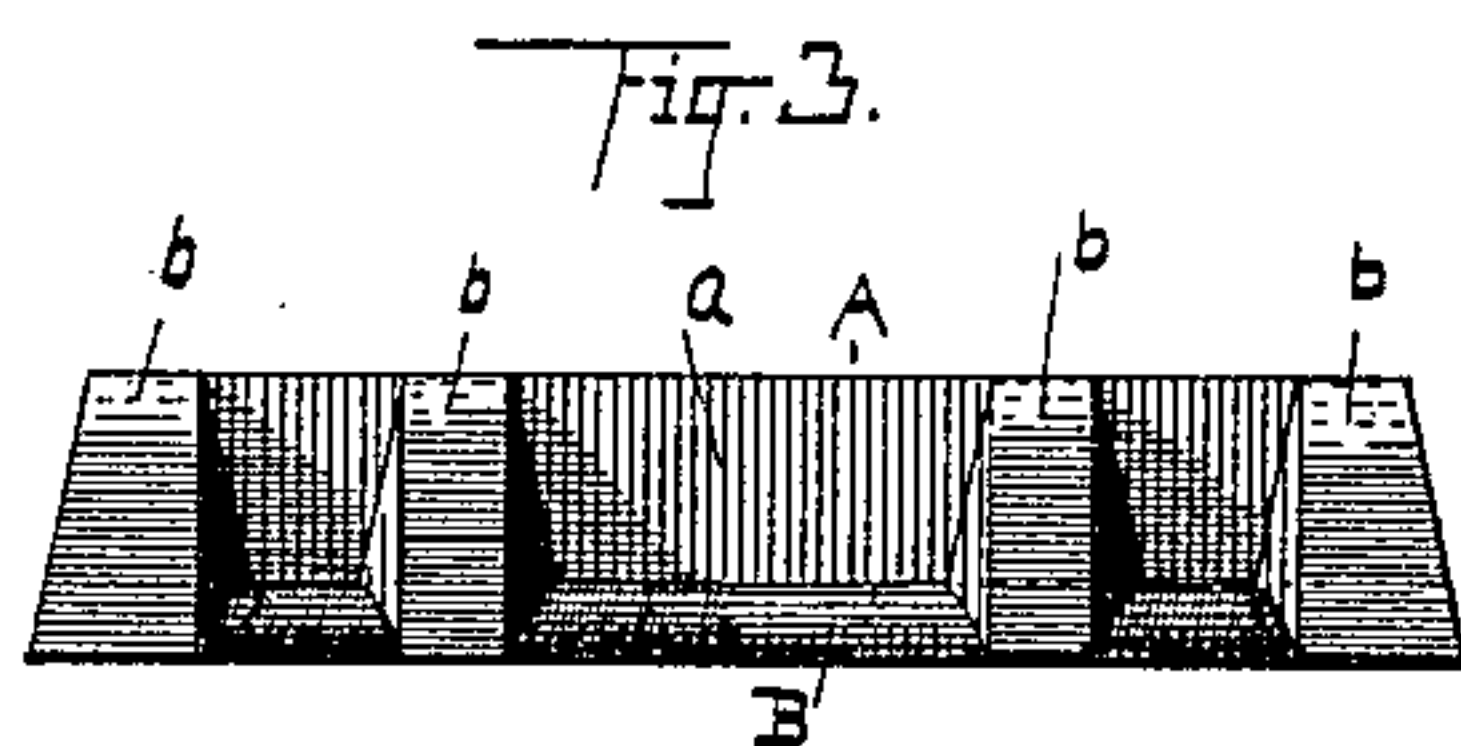
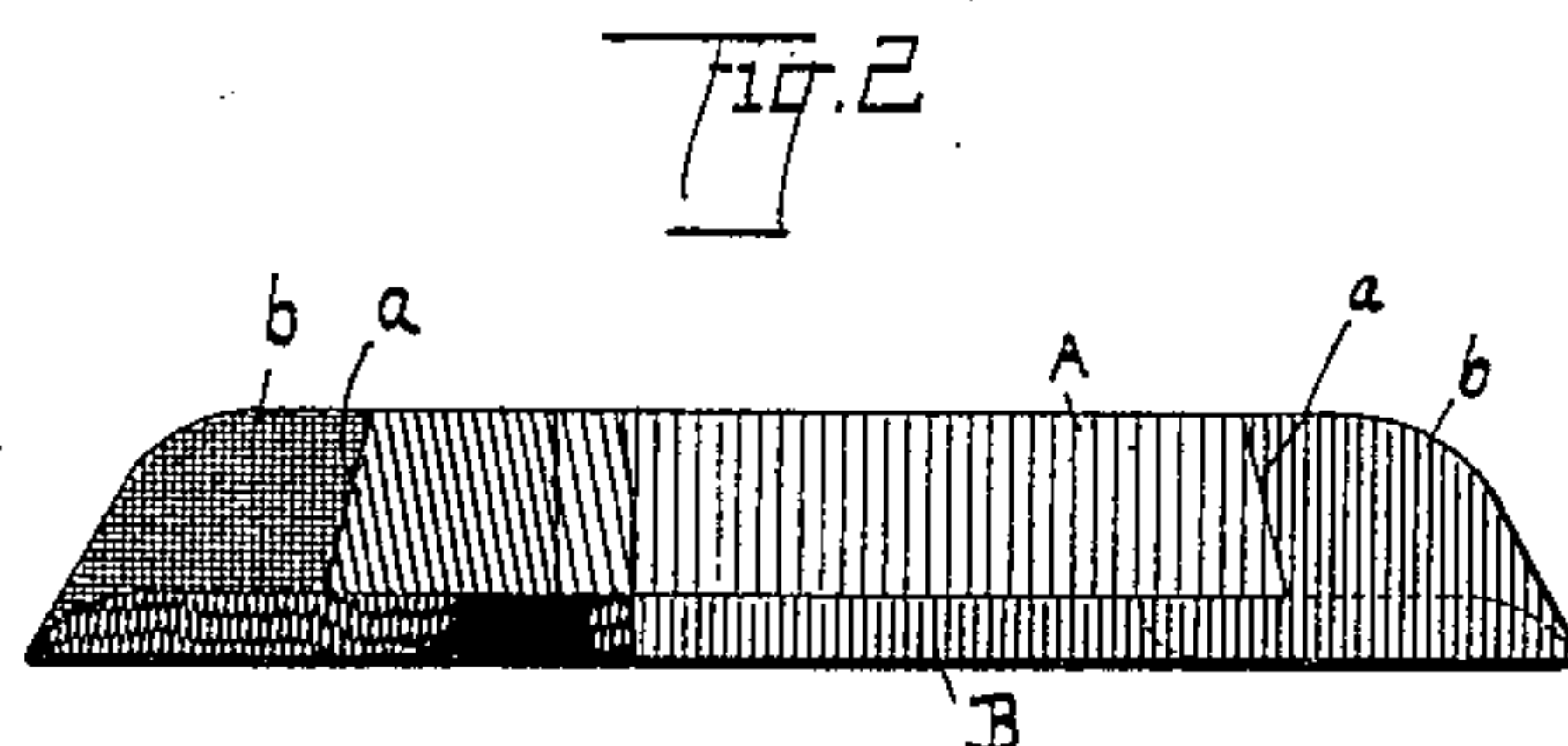
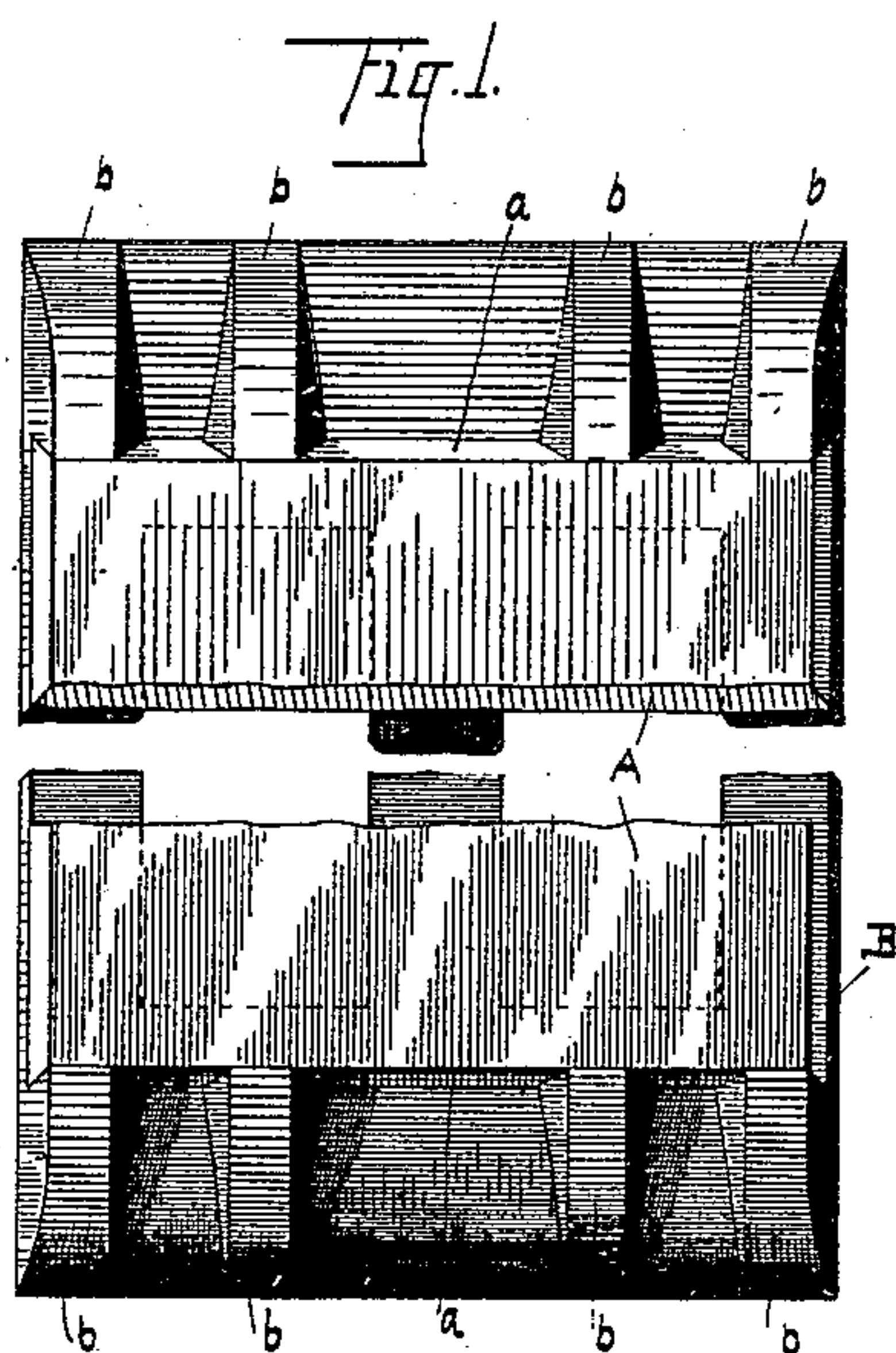
(No Model.)

G. WELLHOUSE.

FIRE LINING.

No. 350,331.

Patented Oct. 5, 1886.



WITNESSES

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GEORGE WELLHOUSE, OF AKRON, OHIO.

FIRE-LINING.

SPECIFICATION forming part of Letters Patent No. 350,331, dated October 5, 1886.

Application filed March 31, 1886. Serial No. 197,367. (No model.)

To all whom it may concern:

Be it known that I, GEORGE WELLHOUSE, of Akron, in the county of Summit and State of Ohio, have invented certain new and useful

Improvements in Fire-Linings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in fire-lining in which metal backing is cast upon a fire-brick, the latter being of suitable refractory material thoroughly burned, and having two or more opposite beveled edges, is laid in a mold and the backing cast on the latter, having projecting lugs or fingers cast undercut by contact with the beveled edges of the brick, to the end that the shrinkage of the backing in casting causes the fingers or lugs to grip the edges of the brick, by means of which the brick is firmly held and cannot easily be broken, cracked, or removed, and by reason of the fingers being separated from each other a broken surface is presented to the heat, and the metal backing is not warped. Heretofore a continuous frame, or a backing with a continuous rib cast on, has been made to inclose the edges of the brick. The difficulty was that the unbroken surface of metal thus exposed in use to the fire would expand and warp with the heat and remain warped, by reason of which, instead of protecting the brick, the latter was likely to be broken, cracked, or loosened by such warping and expansion of the frame or rim of the backing.

With my improved construction the fingers, as aforesaid, present a broken surface, the same being separated some little distance from each other, and as only the ends or front portions of the fingers are exposed, the backing being protected by the fire-brick, does not warp, and consequently holds the brick not only firmly, but prevents the fracture of the brick to such an extent that blows delivered on the face of the brick have little effect, the latter being so firmly held by the lateral pressure of the fingers.

With my improved fire-lining, after months of hard usage, the fire-brick cannot well be removed except by chipping it out with a cold-chisel or other tool.

In the accompanying drawings, Figure 1 is

a plan view of my improved fire-lining, portions being broken away to show the construction. Fig. 2 is a side elevation, partly in section. Fig. 3 is an end elevation.

A represents the fire-brick, that may be of any desired size or form and of any suitable refractory material, the same having been previously burned, and having two or more opposite edges, *a*, beveled. The brick thus prepared is laid in a mold and a metal backing, B, is cast on, the broader face of the brick being next the metal lining. Fingers or lugs *b* are cast integral with plate B, and as these fingers abut the beveled edges of the brick they are of course cast with undercut edges, that with the corresponding edges of the brick form a dovetail. The plate B shrinks in cooling, and causes the fingers to grasp the edges of the brick with great force, the lateral pressure inward of the fingers on the edges of the brick being such that it is difficult to break, crack, or remove the brick. The front of the fingers are of course exposed to the heat, but the expansion of the same does not materially affect the plate B, which, by reason of its being protected by the fire-brick in front of it, does not become heated enough to warp it. If, instead of fingers, a continuous rib were had along the edge of the brick, such rib, when heated, would expand to such a degree that the back plate would be warped, and would remain warped, and in such condition, instead of protecting the brick, would cause extra strain on the latter, by reason of which slight blows delivered on the face of the brick, such as are likely to occur in ordinary usage, would soon break or crack the brick and render it worthless.

What I claim is—

A fire-lining consisting, essentially, of a fire-brick having beveled edges diverging outward, and a metal lining cast upon the outer surface of the brick, and formed with fingers overlapping opposite edges of the brick, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 24th day of March, 1886.

GEORGE WELLHOUSE.

Witnesses:

H. PERKINS,
C. R. GRANT.