

No. 662,490.

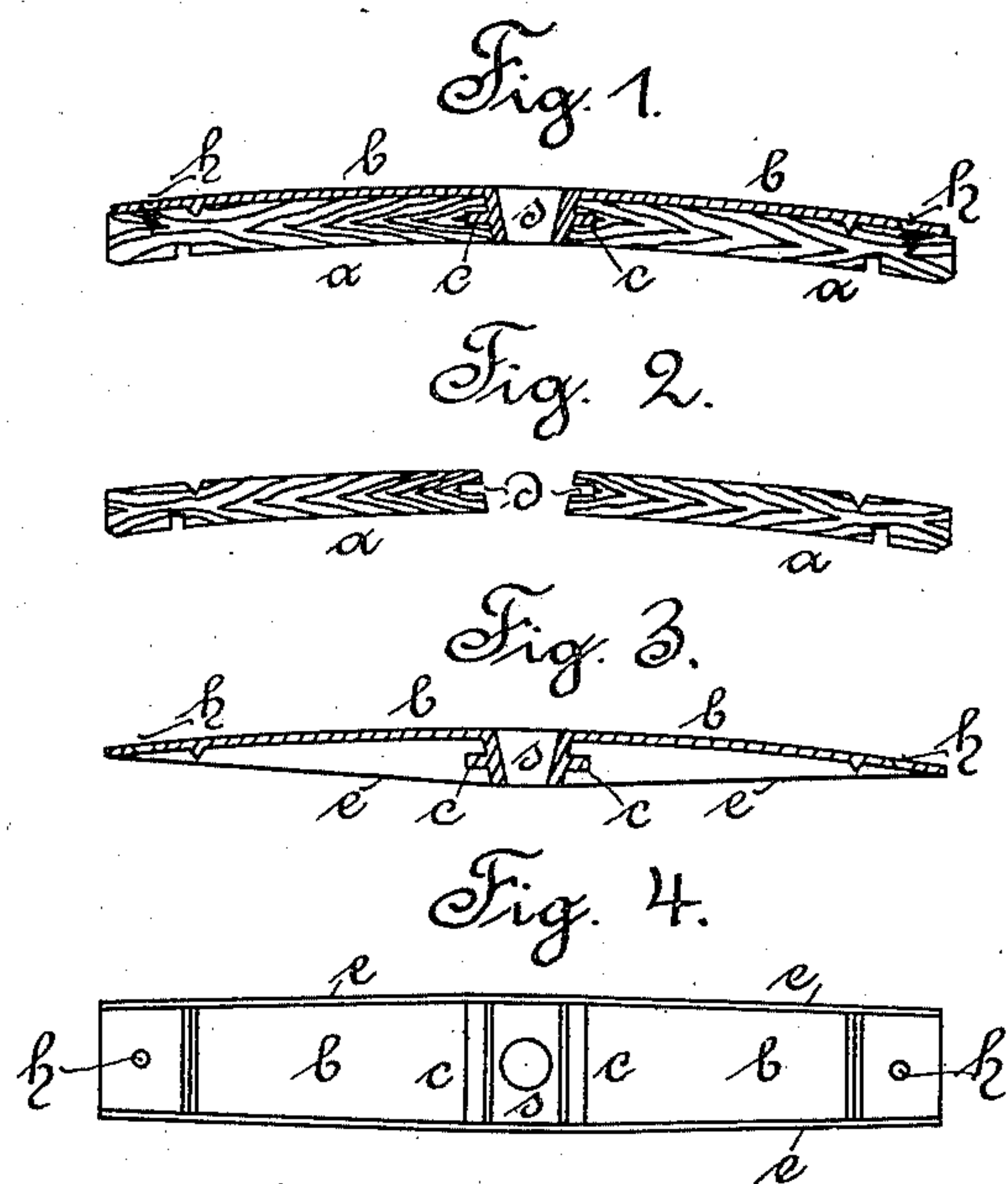
Patented Nov. 27, 1900.

F. X. MAYER.

GAS PROOF BUNG HOLE STAVE WITH METAL LINING.

(Application filed June 2, 1900.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

FRANZ XAVER MAYER, OF MUNICH, GERMANY.

GAS-PROOF BUNG-HOLE STAVE WITH METAL LINING.

SPECIFICATION forming part of Letters Patent No. 662,490, dated November 27, 1900.

Application filed June 2, 1900. Serial No. 18,872. (No model.)

To all whom it may concern:

Be it known that I, FRANZ XAVER MAYER, a subject of the Prince Regent of Bavaria, residing at No. 13 Pack street, in the city of Munich, in the Kingdom of Bavaria, German Empire, have invented certain new and useful Improvements in Gas-Proof Bung-Hole Staves with Metal Lining, of which the following is a specification.

This invention relates to bung-hole staves, the outer sides and the bung-holes of which are lined with metal; and it consists in providing the lining or bush of the bung-hole with feathers taking into suitably-located grooves in the cross-grained wood of the stave containing the bung-hole.

In order to make my invention more clear, I refer to the accompanying drawings, in which similar letters denote similar parts throughout the several views, and in which—

Figure 1 is a longitudinal section through a bung-hole stave constructed according to my invention. Fig. 2 is a side view of the parts of the wooden bung-hole stave. Fig. 3 is a longitudinal section through the metal lining for the stave with the bush for the bung-hole, and Fig. 4 is a bottom view of the parts represented in Fig. 3.

The stave parts *a a*, which are manufactured from so-called "staff-wood" or "cask-wood," are reinforced at their outer sides, as well as laterally, by the metal parts *b b* and *e e*, these parts being connected with the parts *a a* by screws taking through holes *h h* in the lining *b b*. The grain-crossed wood of the stave or stave parts containing the bung-hole or the metal parts forming the bung-hole proper abutted up to now straightly (without interruptions or without feathers or the like) against the respective sides of said metal part, and the said wood parts were thus destroyed in a short time by the pushes and shocks resulting from driving the bung into or removing it from the bung-hole, as well as from the transport of the respective barrel, the reason being that grain-crossed wood gets easily cracked even under the ac-

tion of comparatively slight blows, and that the metal body containing or forming the bung-hole does not completely take such blows up, but transmits a part of their action upon the neighboring grain-crossed wood parts of the stave. Although the stave parts are acted upon by the blows only in those parts which are immediately adjacent to the bush *s*, and the cracking of the wood is but a minimal one, yet this is sufficient to destroy the gas-proof quality of the barrel and to make the latter unsuited for the reception of gas-containing liquors. To do away with this drawback, the bush *s* is provided with feathers *s s*, which take into grooves *d d*, provided in the adjacent grain-crossed parts of the stave halves *a a*. By this means the gas-proof closure is always maintained, because the stave parts *a a* are now very well capable of resisting the blows and shocks in consequence of the wood parts that are in contact with the upper and lower surfaces of the feathers having their grains running parallel to the direction of the grains in the whole stave. The arrangement of the feathers is of course such that the metallic surface which comes in contact with the contents of the barrel is not in the least increased.

Having now described my invention, what I desire to secure by Letters Patent of the United States is—

In a bipartite bung-hole stave with a connecting metallic lining and a bush with bung-hole at said lining, the combination with the stave parts *a a* and the bush *s*, of parallel feathers *c c* forming lateral projections of said bush, and grooves *d d* provided in the adjacent straight grain-crossed parts of the stave halves *a a* and adapted to receive said feathers, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

FRANZ XAVER MAYER.

Witnesses:

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