No. 645,906. Patented Mar. 20, 1900.

W. B. ARNOLD.

DIVIDED LAST.

(Application filed June 22, 1896.)

(No Model.)

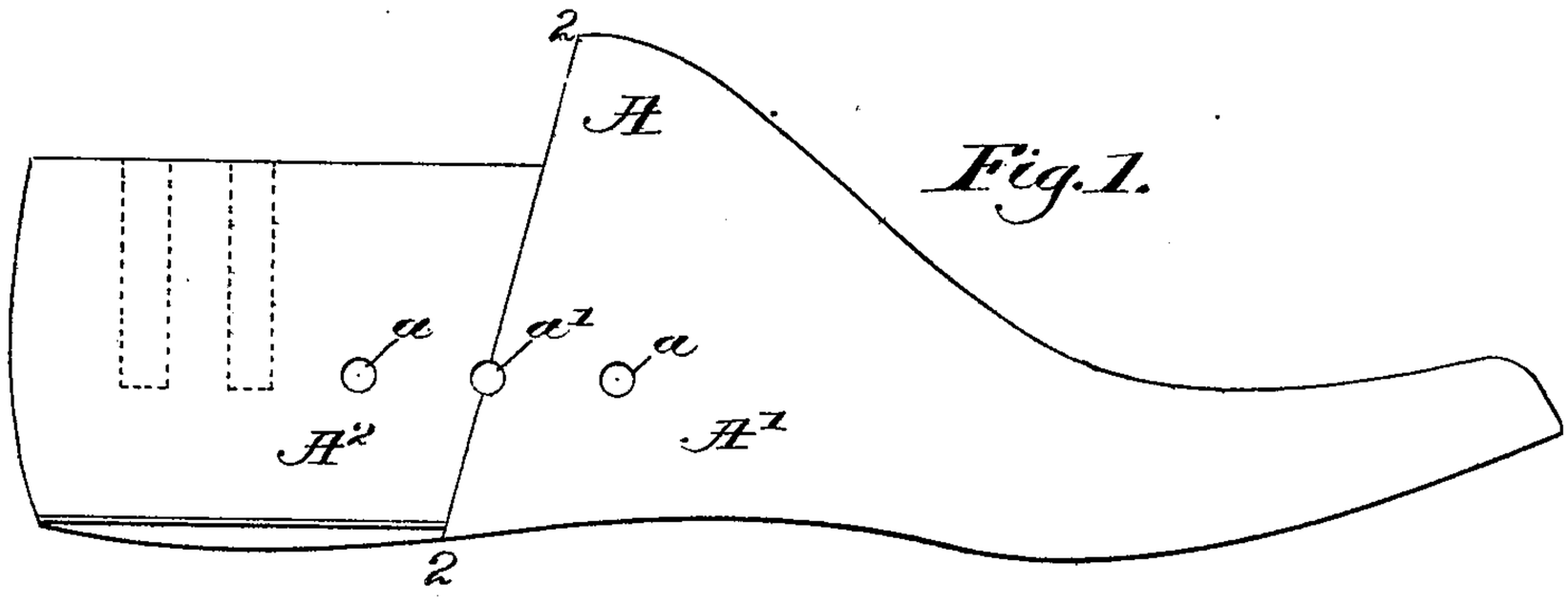


Fig. 1.

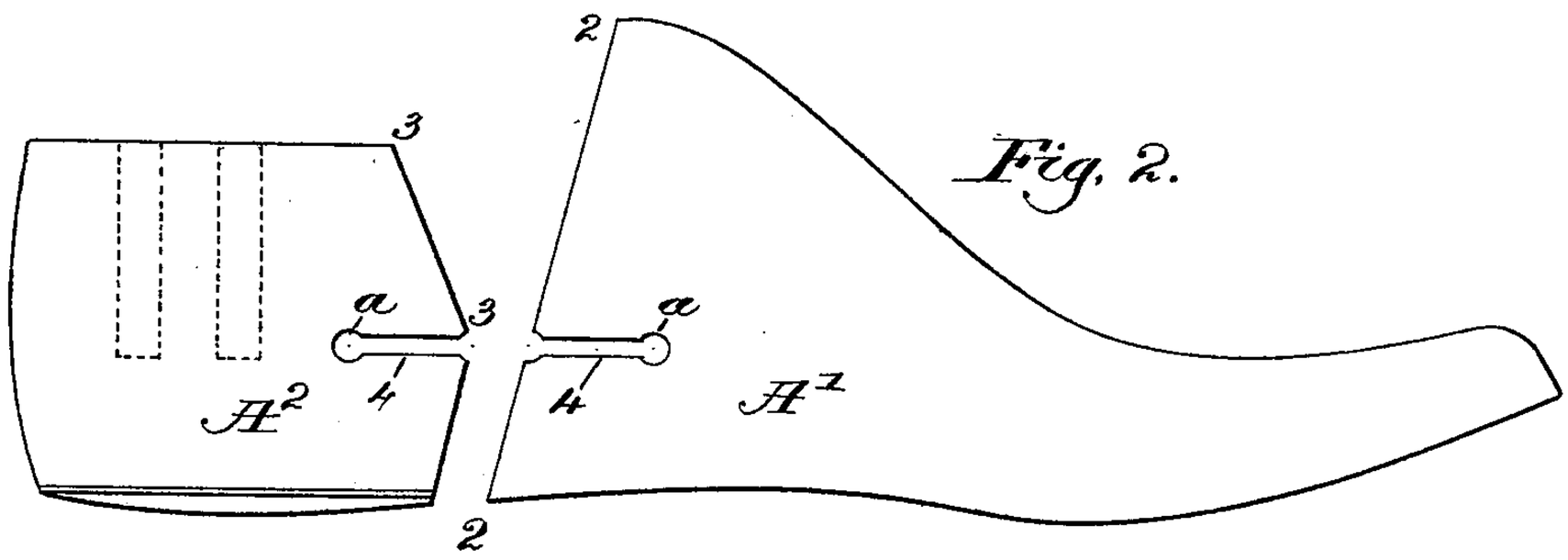


Fig. 2.

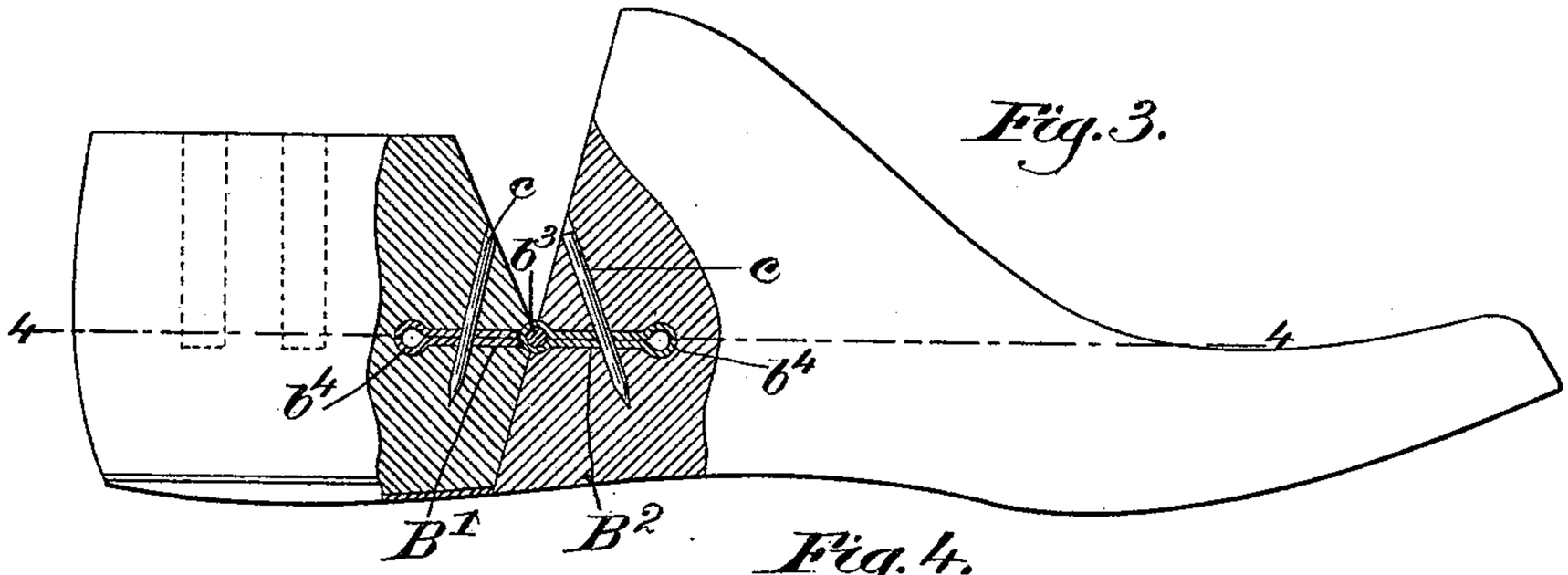
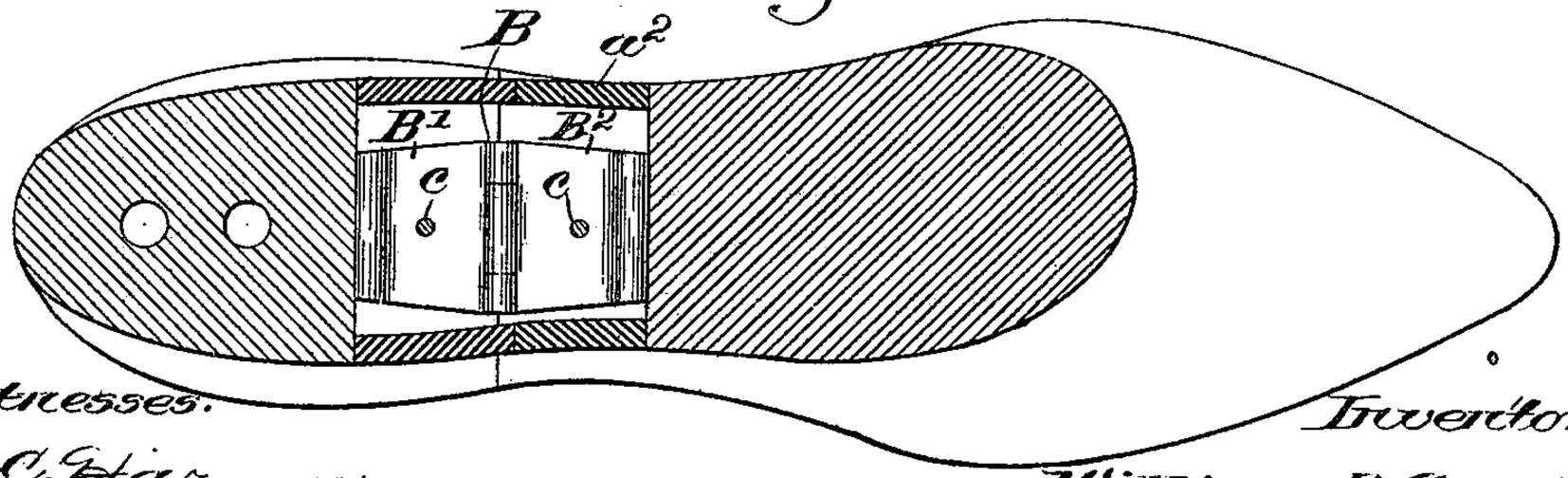


Fig. 3.

Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM B. ARNOLD, OF ABINGTON, MASSACHUSETTS.

DIVIDED LAST.

SPECIFICATION forming part of Letters Patent No. 645,906, dated March 20, 1900.

Application filed June 22, 1896. Serial No. 596,367. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM B. ARNOLD, of North Abington, county of Plymouth, State of Massachusetts, have invented an Improvement in Divided Lasts, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

It is desirable that hinge-lasts for general use shall have their parts held together by a very powerful hinge, that the parts thereof shall be hinged with absolute firmness and with no liability to become loosened and shaky, that the parts shall be weakened to the least possible extent by the hinge connection, and that the fastenings shall be concealed from view as much as possible and the last made to present a neat compact appearance.

My present invention has for its object the provision of a last satisfying all of the above requirements and possessing various other advantages, all of which will more fully appear in the course of the following detailed description.

In the accompanying drawings, Figures 1, 2, and 3 show in side elevation the details of construction of my improved last, the latter being partly broken away to show the hinge and its fastenings. Fig. 4 is a horizontal section of the finished last, taken on the line 4 4 of Fig. 3.

Referring to the drawings, A designates a last-body of any usual or preferred shape, size, or material which it is desired to divide, as into toe and heel portions A' A^2, and to connect said portions by a suitable hinge.

In general terms, viewing my invention from one standpoint, it resides in a last having means for holding the two parts of a last together by anchoring a hinge solidly into the material of said parts, so that the material of the last (usually wood) will itself constitute part of the holding means against which the hinge bears or clings under a longitudinal pull, and in effecting my object I preferably so cut and form the hinge-receiving recesses to coöperate with a hinge provided with lateral end portions that said recesses give access to the hinge from the side of the last only, the result being that the lateral end portions or ribs of the hinge are embedded or encompassed by the wood or are anchored in the integral or solid wood of the last. In carrying out this feature of my invention I prefer to employ a hinge B, such as is shown in my United States Patent No. 590,873, granted to me September 28, 1897, (said patent being a division by Patent Office requirement of the present application,) although I do not limit myself in this or in other respects otherwise than as expressed later on in the claims, and I intend certain of my claims, especially the first, to cover, broadly, a last embodying the construction as above explained irrespective of the particular kind of hinge employed or precise form of recess in the last.

I prefer the form of my patented hinges which is shown in the patent mentioned, because of the facility and economy which it enables me to take advantage of in the manufacture of the lasts. Also it is a very strong hinge, although strength is only essential in certain kinds of lasts. The free ends b^4 b^4 of the leaves B' B^2 are shown as oppositely and outwardly curved or rolled to coöperate and form laterally-extended locking enlargements or projections, preferably in cylindrical form, and are preferably of the same size as the central enlargement at the pintle b^3. In order to insert a hinge of this form sidewise into the last, I simply bore three similar horizontally-alined holes a, a, and a' transversely into or through the last A, as shown in Fig. 1, and spaced equal to the distance from the one to another of the enlargements of the hinge to be inserted, and then I saw the last into the desired number of parts—for example, the two parts A' A^2, before mentioned and as shown in the drawings on the diagonal line 2 2, also sawing off the upper front part of the heel member A^2 on the line 3 3, the saw cuts usually converging to the axis of the hole a'. Kerfs 4 4 are then formed in the opposing faces of the toe and heel portions, connecting the holes a' a, and into the recesses thus formed the hinge B is tightly driven edgewise from the side into the last.

The recesses are cut so as to be a tight fit for the leaves of the hinge, the latter, for the best results, left slightly opened before in-

sertion, being pinched tightly together and wedged immovably within the respective portions of the last as they are driven home.

If desired, suitable pins may be inserted in the enlarged ends b^4, although this is usually unnecessary when my preferred form of hinge is used, as above described.

The edges of the hinge B are preferably neatly concealed from view by means of a strip a^2 of leather or other suitable material driven in at either side, as shown in Fig. 4.

As a further strengthening feature I prefer to insert pins *c* through portions of the last and hinge at either end of the latter, holes being preferably bored diagonally for this purpose after the hinge is in place. This makes it absolutely certain that there can be no inaccuracy in fitting the parts together or adjustment of the hinge after the fitting of the same in position.

In use the last shortens by turning the heel part upwardly and forward, as usual, the broad reciprocal bearing-surfaces of the contiguous end walls between the hinge and the bottom of the last being in contact when in lengthened position, and when subjected to great breaking strain or pressure the locking ribs or enlargements in the offset parts of the recesses serve to resist withdrawal of the hinge and separation of the parts of the last in addition to the resistance usually afforded by the ordinary connecting means of multipart lasts.

In my claims at the end of this specification I have defined certain features hereinbefore mentioned, and while I prefer to employ the form of hinge shown and to retain it in the last by edgewise insertion I intend certain of the claims to cover one of said features alone irrespective of the other—as, for instance, there are many forms of hinges with locking end projections which could be used inserted edgewise into the last, thereby accomplishing the main object of my invention, one of these being, in fact, so used—namely, a butt-hinge having T-shaped ends or flanges which, instead of being continued around in semicircular or cylindrical shape, as herein shown, are short and straight, constituting end ribs or locking enlargements perpendicular to the hinge-leaves but I also intend to cover specifically in my claims the construction employing holes, as it is exceedingly accurate, strong, neat, and inexpensive, the holes when cylindrical, as shown, being bored instead of sawed, as with the T-shaped hinge mentioned.

I do not undertake to mention herein all the various embodiments of which the various features of invention are capable within the scope of my claims; but I wish to make it clear that the anchoring or edgewise-inserted interlocking construction of the hinge of whatever kind in or within the solid last is the main invention or most important feature of this application. It will be understood, however, that the hinge shown may be inserted in other ways, one practical way, especially for followers, being by employing a wooden filling and glue, as disclosed in my United States Patent No. 619,113, dated February 7, 1899, in which case the recesses or kerfs in the last would have a width equal to the end flanges and the glue-smeared fillings would bear against the end flanges and extend along the leaves so as to completely fill the said recesses.

Many other variations and modifications may be resorted to without departing from the spirit and scope of my invention.

What I claim is—

1. A divided last having its toe and heel members provided with opposed hinge-recesses, combined with a hinge connecting said members, said hinge having laterally-extended locking end portions arranged within said recesses, the latter giving entrance to said laterally-extended end portions from the side of the last only, substantially as described.

2. A multipart last, having its parts movably joined by a connection, having adjacent its ends transverse lateral flanges embedded within the solid material of the respective parts of the last, said connection and its flanges having entrance to their said positions within the parts of the last solely by an edgewise movement transverse to the length of the last, substantially as described.

3. A transversely-divided last having three holes extended therein from one side thereof, the middle hole intersecting the line of said transverse division, slits respectively connecting the two outside holes with the part of said middle hole which is in the same part of the divided last, and a hinge having laterally-extended locking portions to enter said outside holes, the leaves of said hinge being received in said slits, substantially as described.

4. A multipart last containing a fore part, a heel part and a connecting-hinge having its two leaves provided each with a laterally-extended locking portion, said fore part and heel part having each a transverse opening extended therein from one side of said part to receive one of said hinge-locking portions, said transverse openings being connected with the adjacent ends of said parts by hinge-leaf-receiving slits also extended inwardly from the same side of said part, substantially as described.

5. A divided last, having its toe and heel members provided with opposing hinge-recesses, combined with a hinge connecting said members, said hinge having enlarged end portions, and being located in said recesses, and pins inserted in the last and transversely through the hinge, substantially as described.

6. A multipart last, having its fore part and heel part connected by a hinge, one of said parts having a hinge-recess extending in from one side and one end wall, said recess terminating at its inner end parallel to said

end wall in an offset portion, and the hinge having a leaf fitting said recess and having a lateral end portion locking against or into said offset part of the recess, the other part of the hinge being fastened in the other part of the last, substantially as described.

7. A multipart last, the fore part and heel part whereof are joined by a hinge, the leaves of which are respectively inserted in the fore part and heel part and formed each with a transverse rib or flange which projects outwardly from its leaf, substantially as described.

8. A multipart last, the fore part and heel part whereof are joined by an inserted hinge extending lengthwise of the last, and each leaf of which is formed with a transverse rib projecting outwardly from its leaf, the opposed ends of the fore part and heel part being cut away above the hinge to permit the last to shorten when the heel part is moved upwardly and forward, and also being formed with broad reciprocal bearing-surfaces between the hinge and the bottom of the last, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM B. ARNOLD.

Witnesses:
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