No. 626,248. Patented June 6, 1899.

G. SAUTER.

VENEER CASK.

(Application filed Mar. 15, 1898.)

(No Model.)

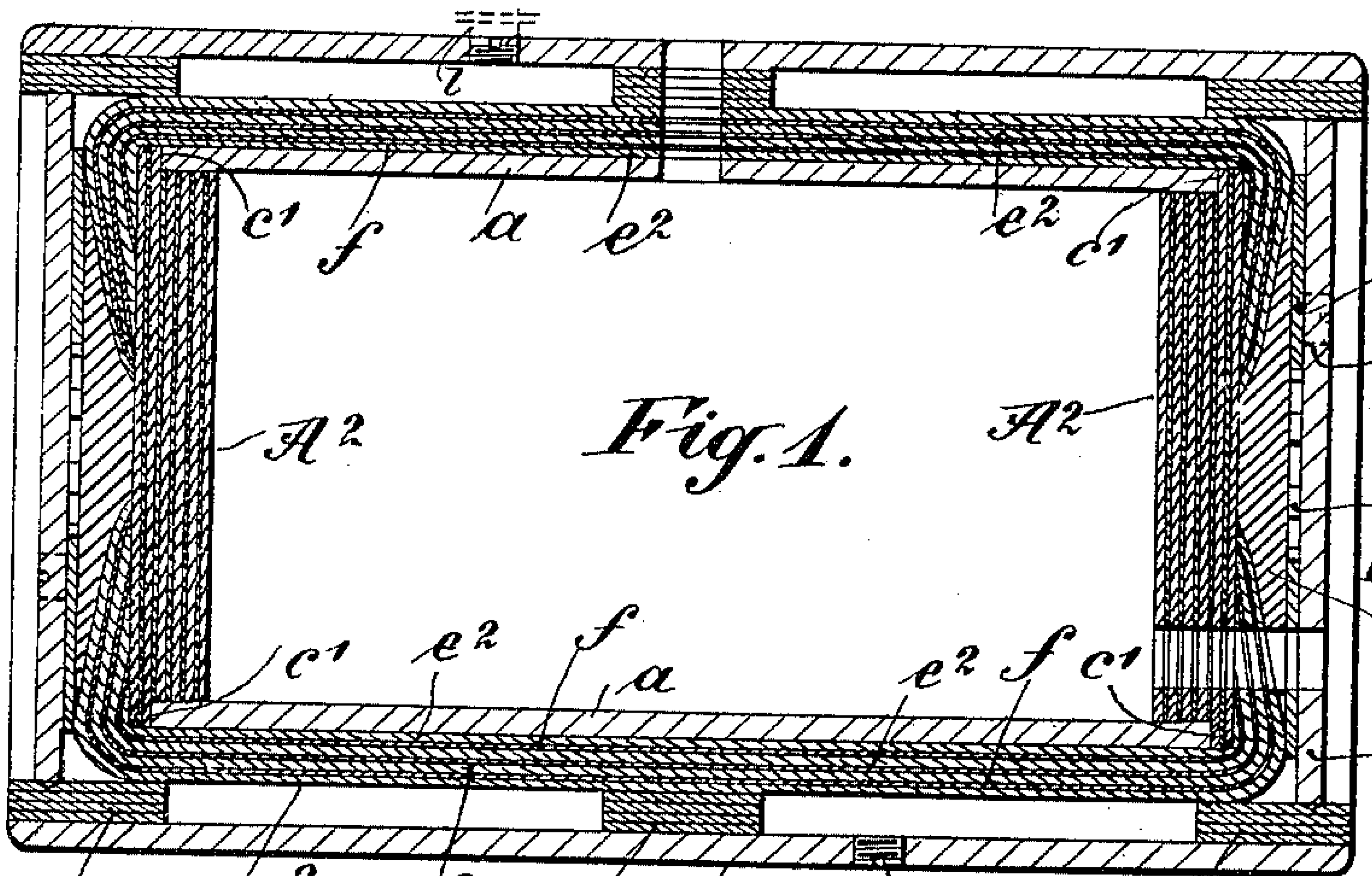
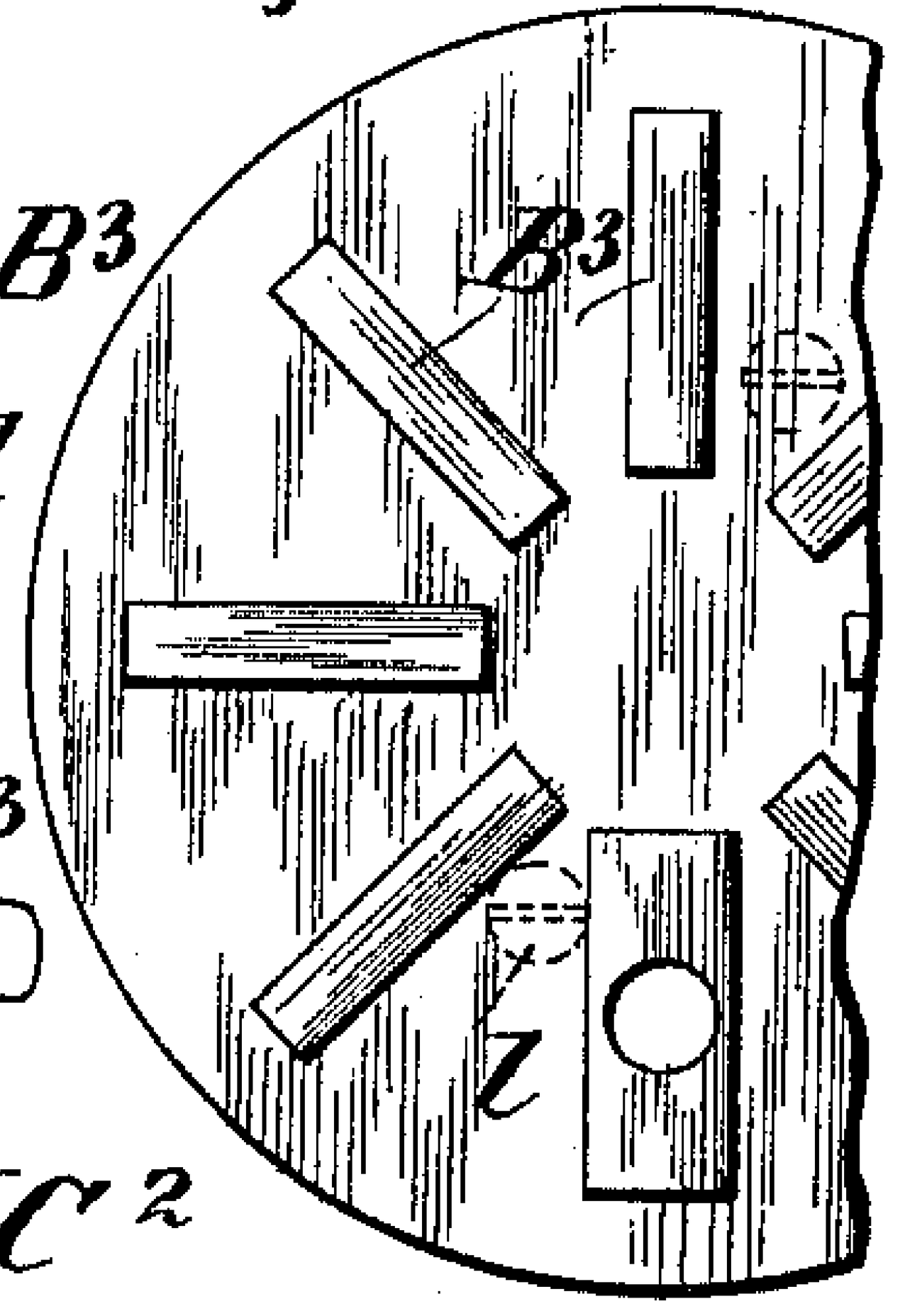


Fig. 1.

Fig. 6.



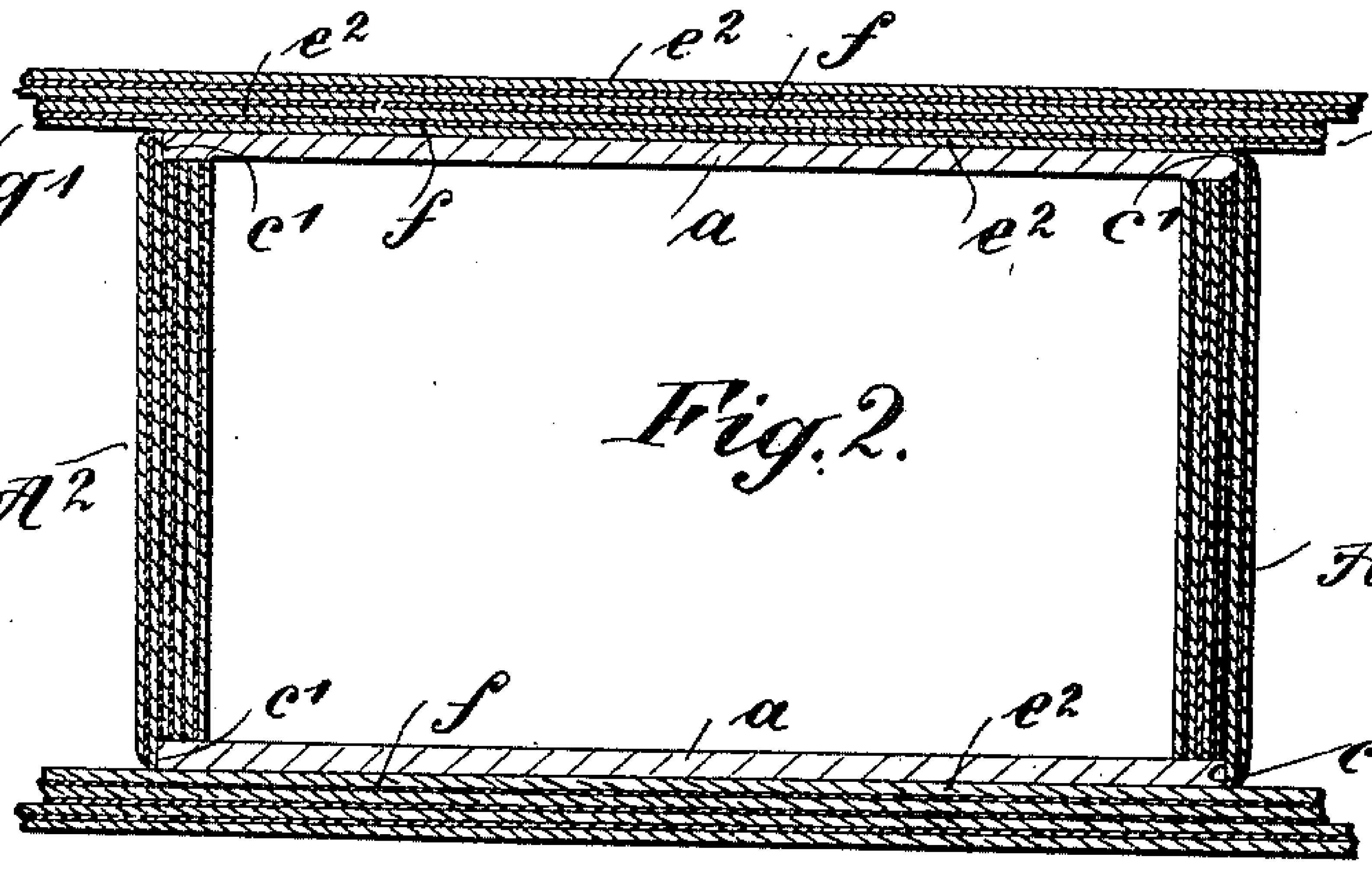


Fig. 2.

Fig. 5. U2

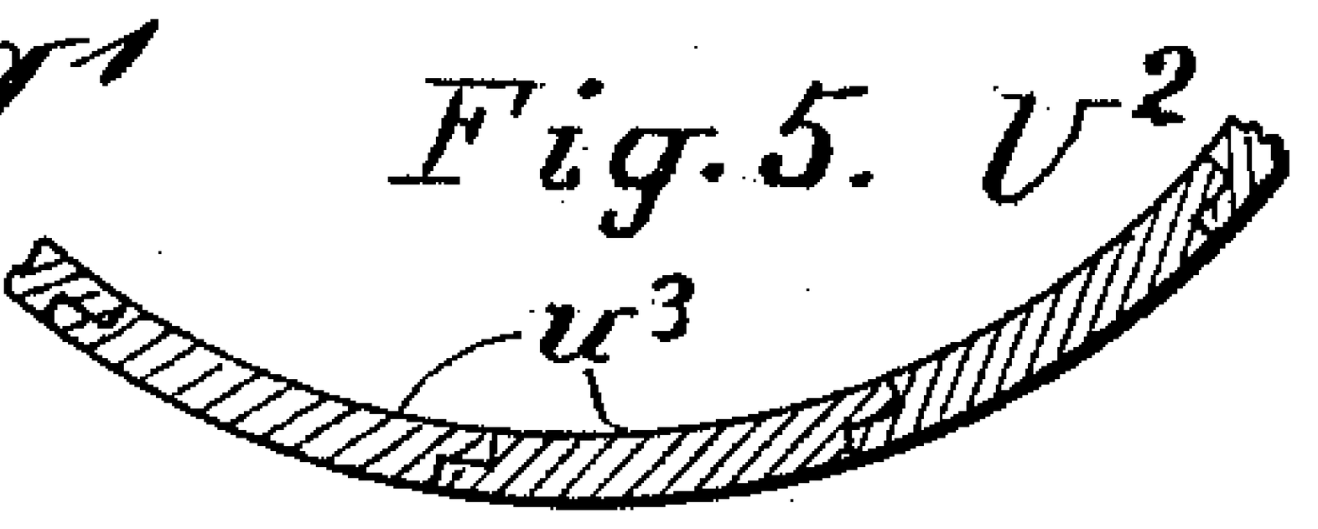


Fig. 7.

Fig. 3.

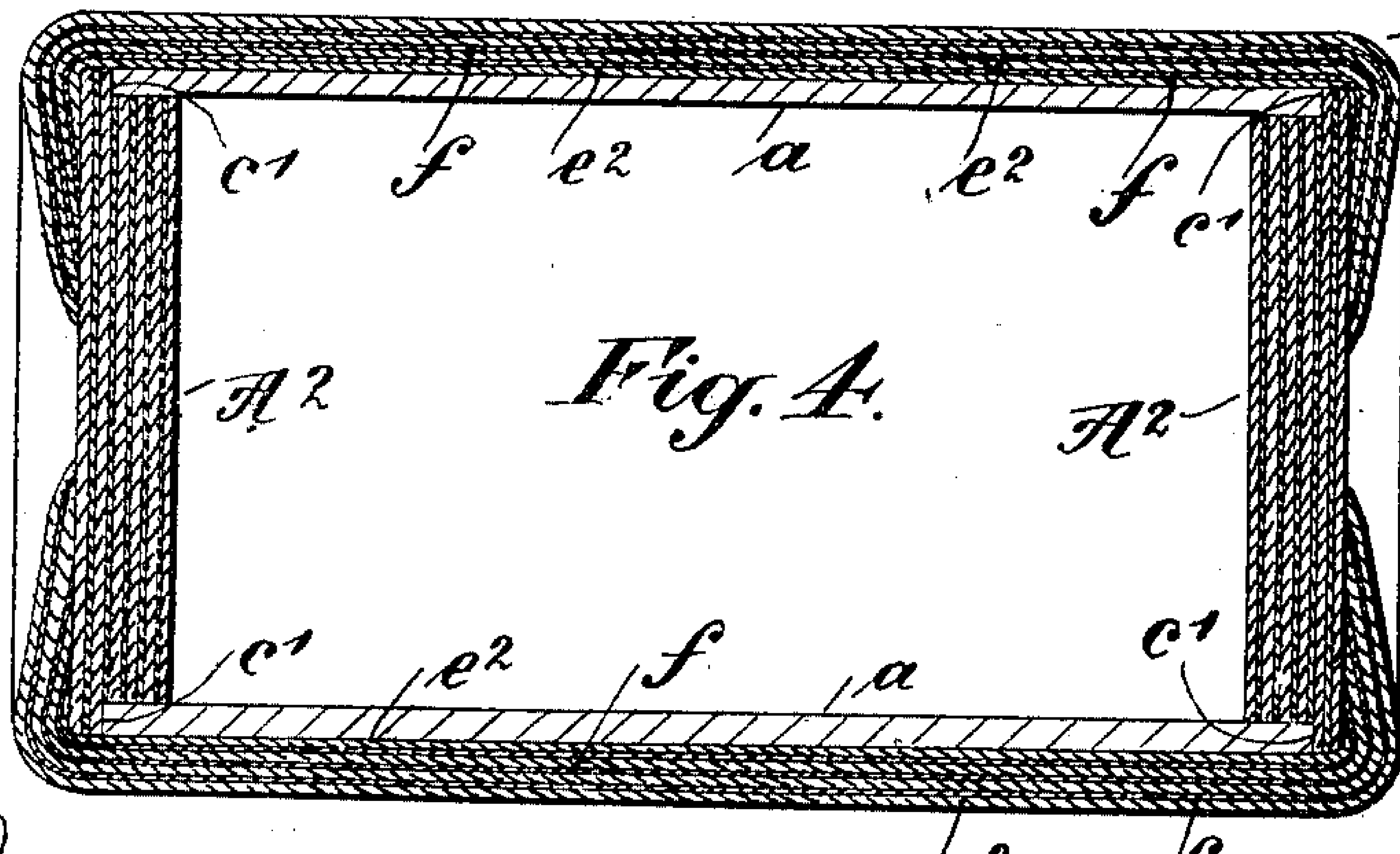
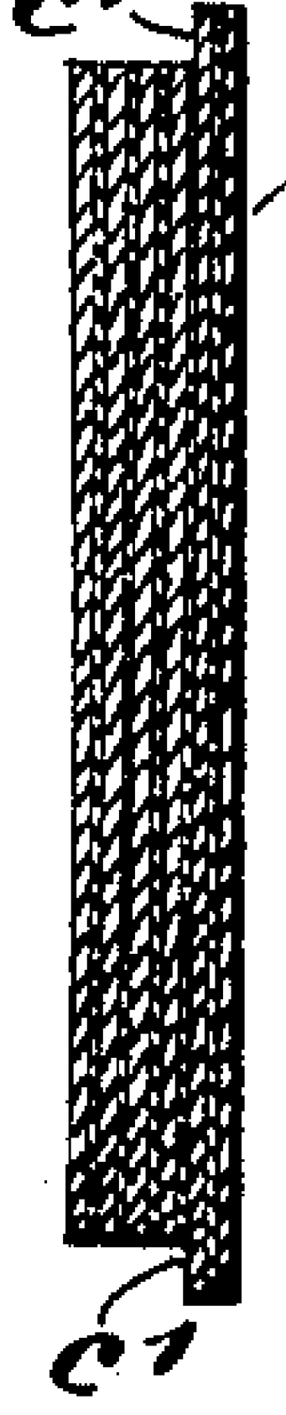
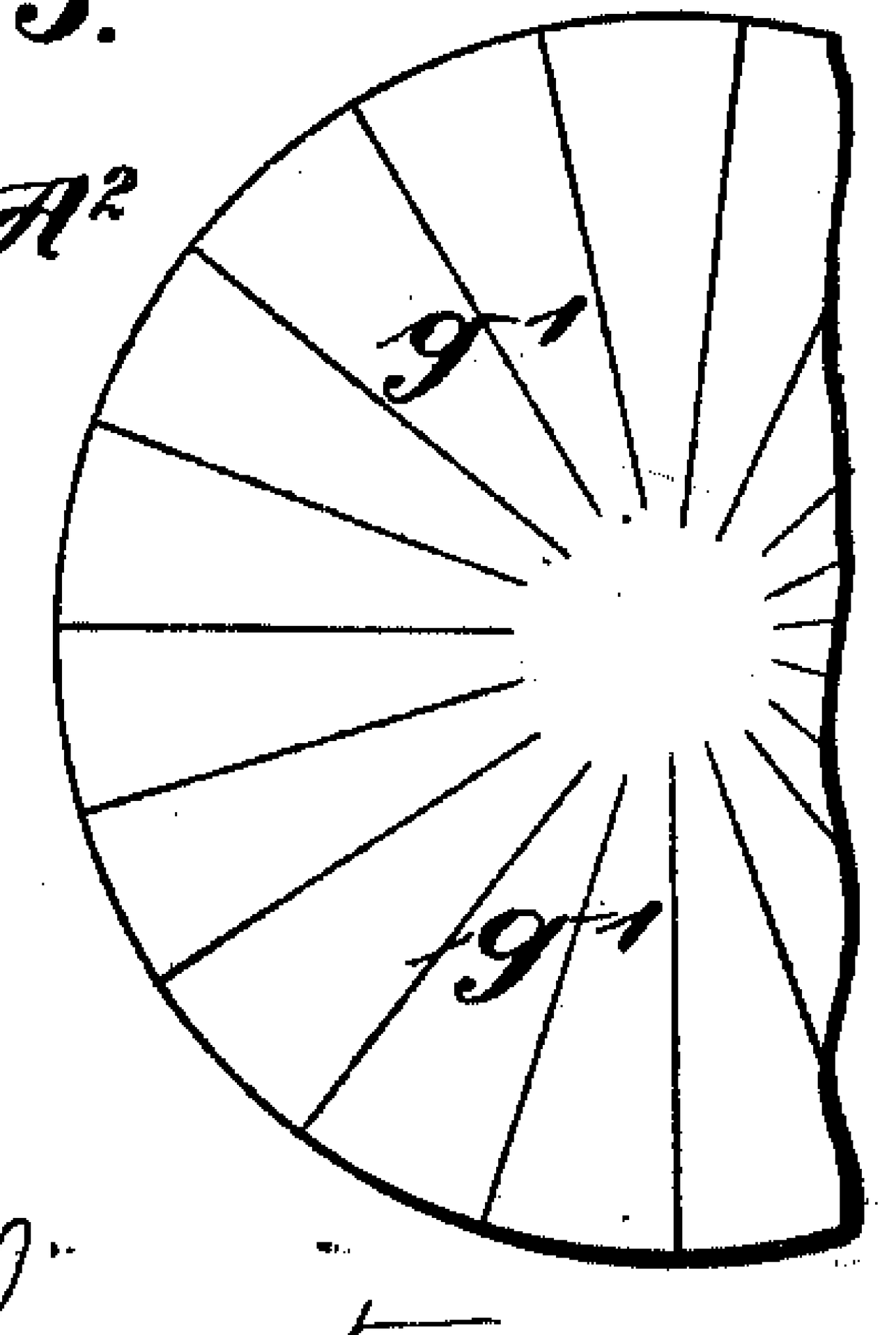


Fig. 4.





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UNITED STATES PATENT OFFICE.

GEORGE SAUTER, OF CHARLOTTENBURG, GERMANY.

VENEER CASK.

SPECIFICATION forming part of Letters Patent No. 626,248, dated June 6, 1899.

Application filed March 15, 1898. Serial No. 673,930. (No model.)

To all whom it may concern:

Be it known that I, GEORGE SAUTER, joiner-master, a subject of the Emperor of Germany, residing at Charlottenburg, near Berlin, in the Province of Brandenburg and Empire of Germany, have invented certain new and useful Improvements in Veneer Casks; 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 appertains to make and use the same.

For the transportation of beer and in general of liquids produced and stored under pressure veneer casks could not hitherto be generally used, since, in the first place, the heads and casings of the casks do not offer sufficient resistance to the great pressure, and, in the second place, the beer does not remain sufficiently cool in such casks and the stored liquor is spoiled by the influence of the external temperature. All these difficulties are avoided by bending the projecting ends of the cask against the heads and gluing them to same, so that these lapping portions hold on the heads, and by inclosing the cask with an air-tight casing, so that the inner cask-body is surrounded by a layer of air, room for receiving carbonic acid, &c., is provided, and a fluid under pressure may be introduced between the inner and outer cask-bodies.

Such a cask is represented in longitudinal section in Figure 1. Fig. 2 is a similar view of the cask-body before the laps are bent down. Fig. 3 shows the head, and Fig. 4 a finished cask without the casing. Fig. 5 shows the staves of which the casing consists. Fig. 6 is an inner side view of the casing-head. Fig. 7 is an outside view of the cask-body head, showing the downturned laps.

The inner casing of the cask consists of the veneer sheet a, which is sharpened at opposite ends and glued together to form a cylinder. The sheet a is a veneer, with its grain in the direction of the length of the cask and of a thickness of three millimeters to ten millimeters, according to the requirements of the liquid. With casks for vinegar, must, overfermented beer, and the like the inner casing must, for example, be made thicker than for casks for underfermented beer, since for the first the tannic acid of the oak wood is necessary for the preservation of the liquid, while in the latter case the cask can be glazed. On the ends of this casing are placed the rabbeted heads A^2, which are made of veneer plates glued together, with intervening layers of cloth, or such heads may consist of a layer of thick veneer or a single wooden piece, being arranged, however, in any case so that the flange c' thereof just covers the end of the cask-cylinder A. The places where the heads A^2 meet the casing a are rounded off, as shown. On the completely-closed hollow cask so formed are glued, one after the other, several layers of veneer e^2 e^2 alternately with layers of fabric f, of suitable material, such as linen, in such manner that successive layers break joint. Moreover, these veneer layers are made somewhat wider than the length of the cask to be made, so that they project somewhat beyond the heads. The projecting ends are cut or notched, so that the laps g' are formed as shown in Fig. 7. The laps g' are then bent over and held against the heads by means of clamping devices. The laps g' are warmed, so that they become flexible and may be pressed against the heads A^2. In the above manner I produce a cask as shown in Fig. 4.

It is not necessary that the projecting ends should be notched, as a single impervious membrane may be used, which may be suitably folded over and the ends pressed against the heads.

For the formation of the outer casing veneer bands F' F^2 are first wound around the cask shown in Fig. 4 in the manner indicated in Fig. 1.

If barrel-shaped casks are desired, it is only necessary to make the middle band thicker than the end bands. When all three bands are wound around, the outer casing-cylinder is glued to same.

The heads A^2 of the casks are provided with supporting-plates B^3, on which the second or outer heads c^2 rest, the space between these plates and the downturned laps g' being occupied by blocks D. The cask-body $a\,a''$ has also at the center and at the ends veneer bands F' F'', rolled around the same. The end bands F'' form at the same time at their outer edges the chimes of the cask and are rolled sufficiently tight to hold the heads C^2 in place. Over these bands is placed the

outer casing V''. The cask proper is thus always surrounded by a layer of air, which regulates and maintains uniform the temperature in the inside of the cask. The outer walls and the outer casing are provided with air-holes *l*. Cold air or a fluid-pressure agent, such as compressed air, can be introduced through these openings from any suitable source, so that a counter-pressure is exerted inwardly on the inner cask, which balances the pressure of the fermenting liquid on the inside, which conduces to the durability of the cask proper, as the latter has to sustain no pressure; or the space between the outer and inner casings can be filled with carbonic-acid gas, so that a transportable cask with a carbonic-acid receptacle is provided. Such a cask is of value in that it enables the sale of beer in the keg for household purposes.

The outer casing V'' can consist of separate rabbeted staves u^3, Fig. 5, that overlap one another to permit such movements of the parts as may occur by the expansion and contraction due to rapidly-changing temperatures.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

A veneer cask comprising heads, a cask-body formed of rolled veneer sheets, whose ends are bent over said heads and glued veneer bands F', F'', around said cask-body, and an outer casing around said bands, the end bands F'' forming at their outer edges the chimes of the cask, and a space being left between the cask-body and outer casing suitable for the reception of carbonic acid or fluid-pressure agent.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE SAUTER.

Witnesses:
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HENRY HASPER.