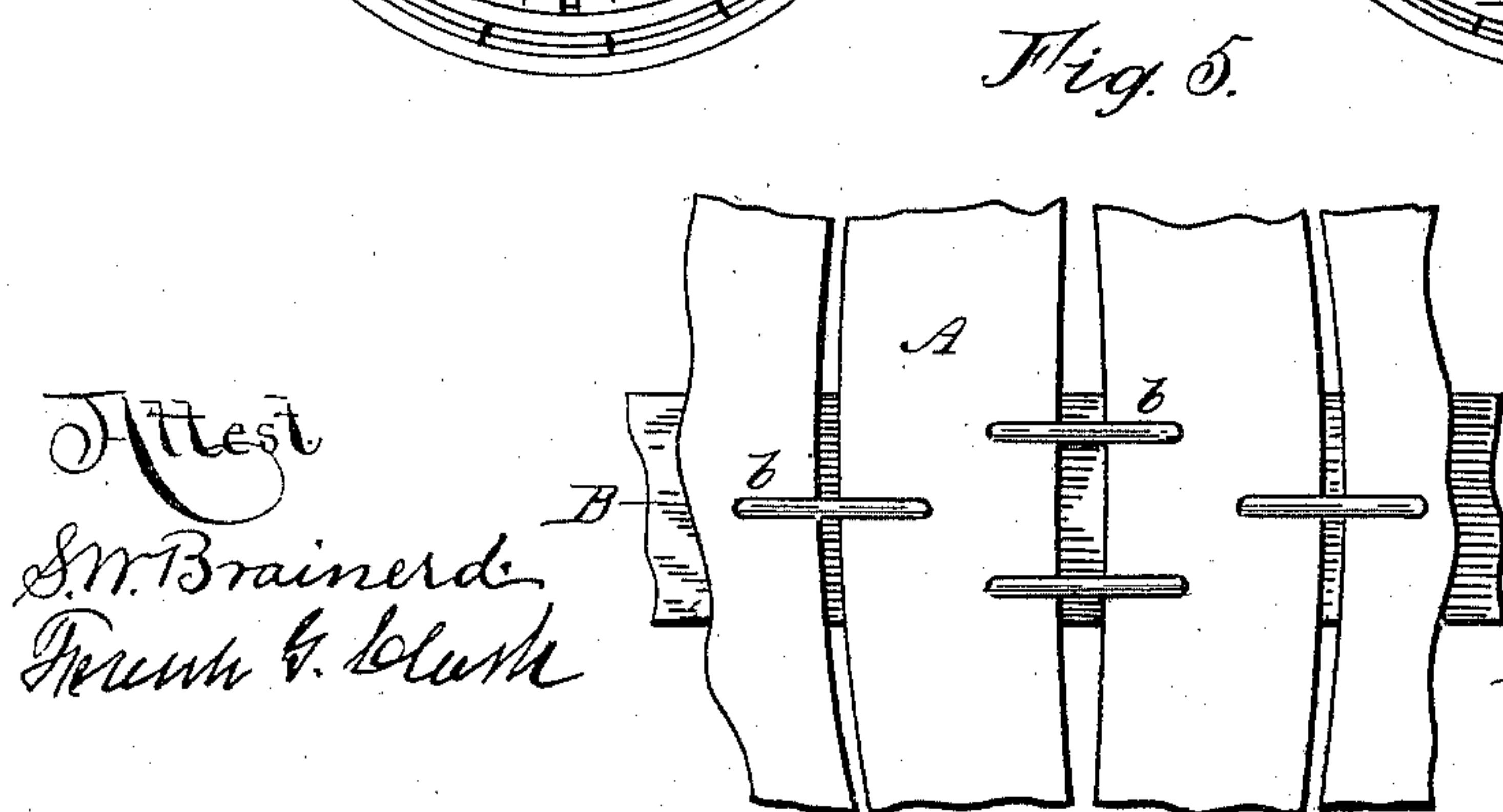
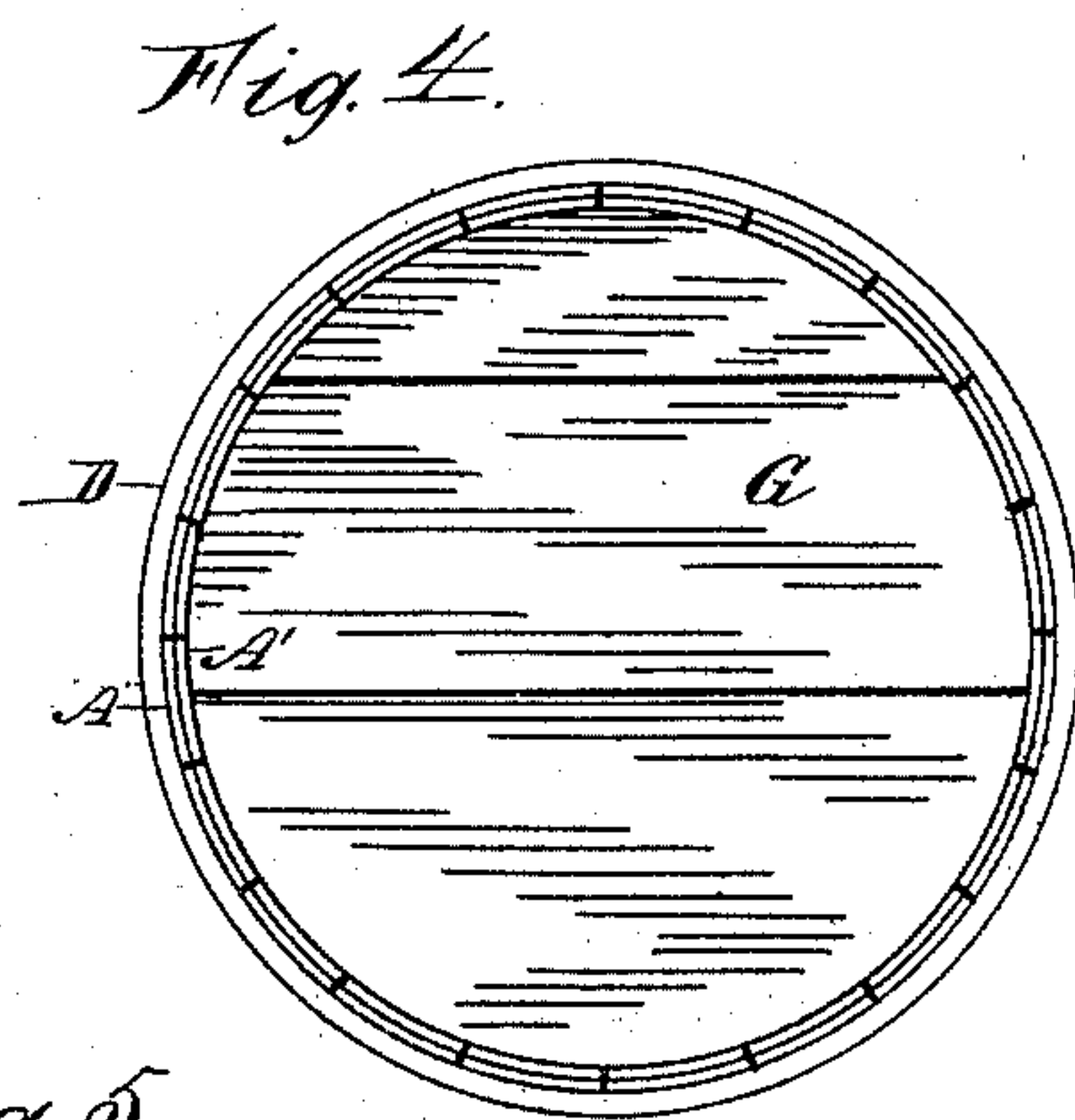
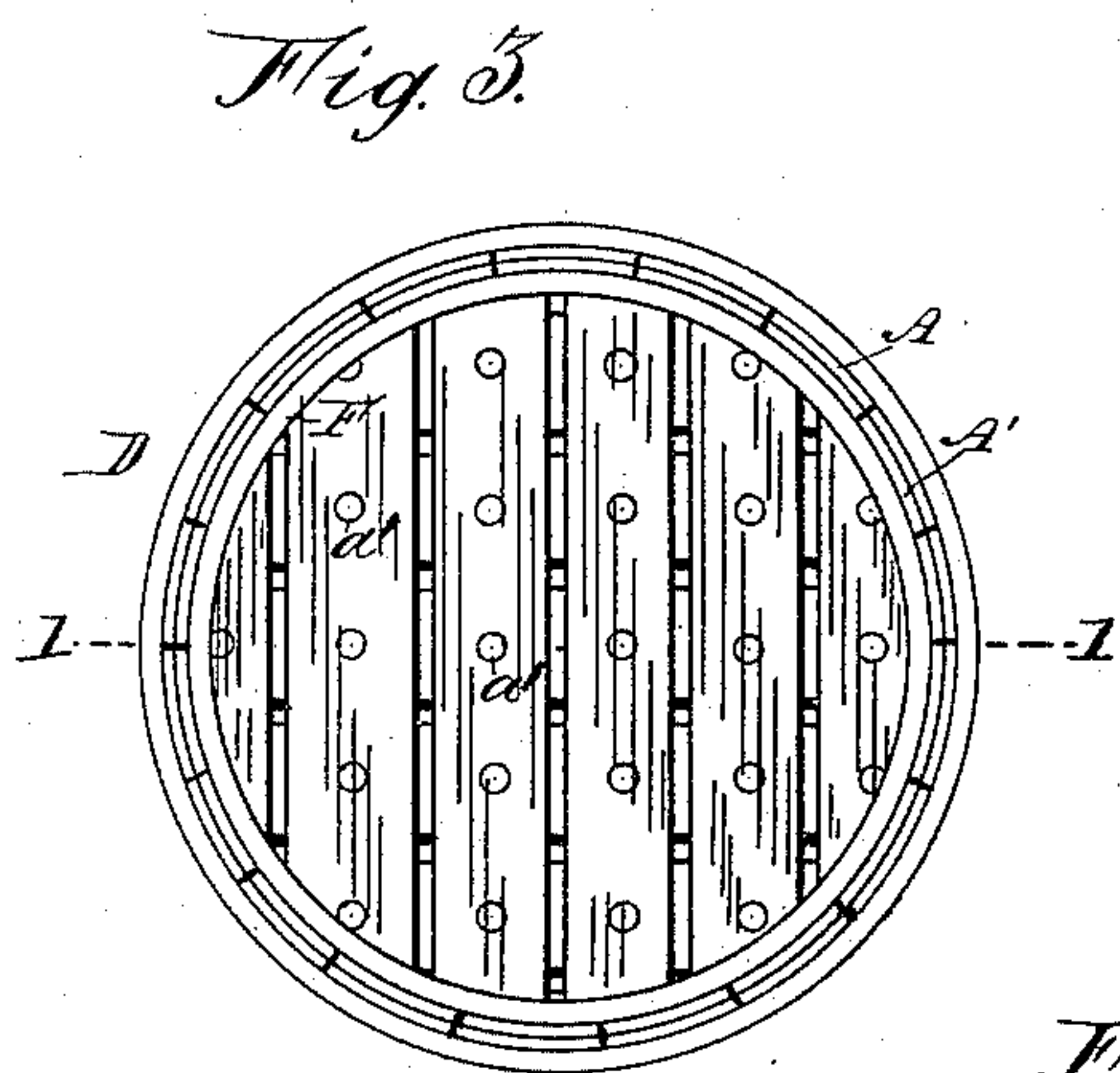
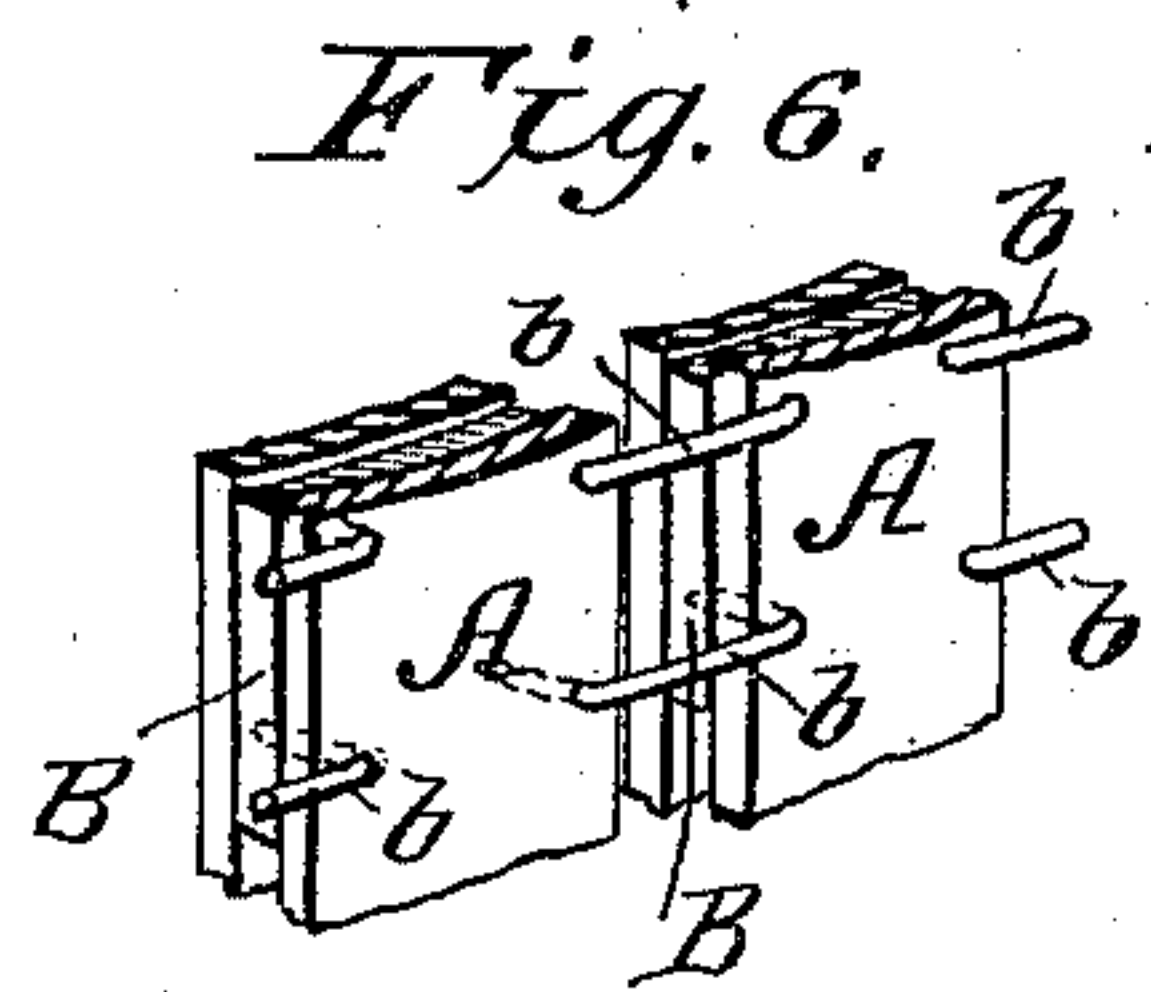
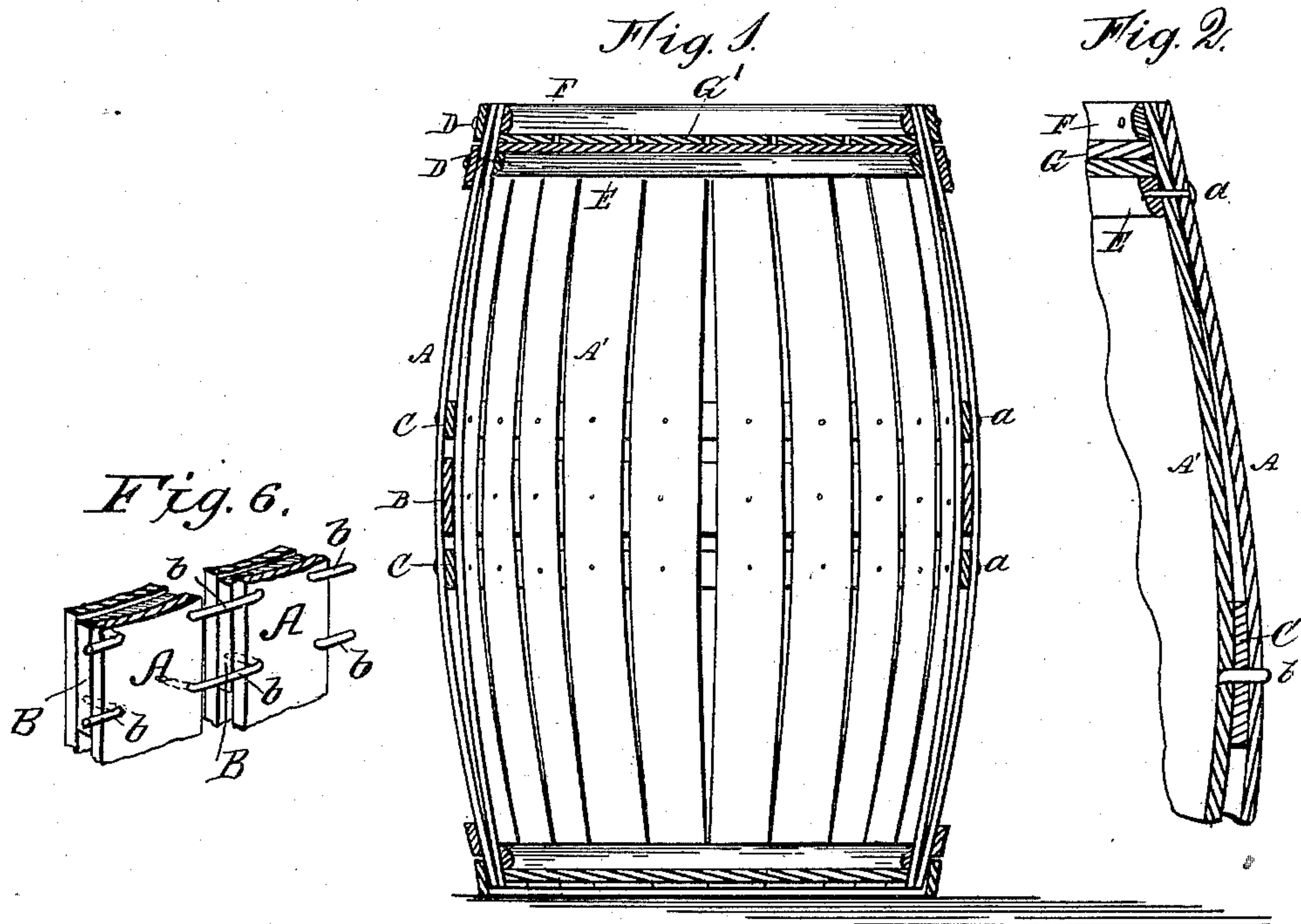


(No Model.)

J. P. COWDEN.  
BARREL.

No. 474,723.

Patented May 10, 1892.



Attest  
S. W. Brainerd  
Friend & Clerk

Inventor  
James P. Cowden,  
By J. M. St. John,  
Atty.



# UNITED STATES PATENT OFFICE.

JAMES P. COWDEN, OF CEDAR RAPIDS, IOWA.

## BARREL.

SPECIFICATION forming part of Letters Patent No. 474,723, dated May 10, 1892.

Application filed April 30, 1891. Serial No. 391,041. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES P. COWDEN, a citizen of the United States, residing at Cedar Rapids, in the county of Linn and State of Iowa, have invented certain new and useful Improvements in Barrels; 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.

My invention relates more particularly to ventilated barrels, such as are usually employed for transporting fruits and other commodities not injuriously affected by exposure to the air; and it has for its object to provide a barrel of this character which will be light, of great strength, cheap in its cost of manufacture, and which will present a neat and workmanlike appearance.

Furthermore, it has for its object to provide a barrel without internal hoops, so as not to interfere with the packing or to mar the contents of the barrel and which when the upper hoops are removed to take out the head will still retain its original shape.

My invention consists in the peculiar combination and construction of parts, all of which will hereinafter be fully described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical section of a barrel embodying my invention, taken on the line 1 1 Fig. 3. Fig. 2 is a detail longitudinal section, on an enlarged scale, of a portion of one of the staves and its connected hoops. Fig. 3 is a top plan view of the barrel, with a ventilated head in place. Fig. 4 is a similar view showing a solid head. Fig. 5 is a fragmentary elevation of a portion of the middle of the barrel and means for connecting and securing the edges of the staves, and Fig. 6 is a detail view of a modification hereinafter referred to.

The staves of the barrel, which may be of very thin material—such as veneer—are formed double, being composed of an outer and inner member A A', the ends of which abut and are secured together by the nails *a*, but are separated in the middle by a hoop B or hoops C C, (see Fig. 1,) or both, as may be desired. By forming the staves A double and connecting them as shown has the effect of trussing them, thus adding to the strength

its natural curved form imparts, and though from the nature of the material used it is light and easy to handle, its structure gives it much greater elasticity than if the stave were composed of a single piece. This elasticity serves to some extent to protect the stave itself from breakage and is also a protection to the contents since the outer portion of the stave will yield when rolled over an obstacle or jostled against any other body without disturbing the position of the inner part of the stave, a valuable feature in connection with the shipping of fruit and the like perishable property. It is to be understood that this elasticity does not necessarily extend throughout the entire stave, there being little or none at the ends or the middle.

Instead of employing a continuous hoop or hoops to separate the several members of each stave, I may provide a separate block B', which blocks are interposed between the stave members, in the manner clearly shown in Fig. 6 of the drawings.

Near each end of the barrel is an internal hoop E, to which the ends of the staves are connected by the nails *a*, such nails serving not only to secure the ends of the stave members together, but also to secure such joined members to the hoops E. These hoops E serve as the inner support for the barrel-head G, which may be the ordinary solid one, as shown in Fig. 4, or a slotted one, as shown at G' in Fig. 3.

The solid head G, in the case of a ventilated barrel, is desirable for the bottom head, so that the contents of the barrel standing on a wet floor or the like are not injuriously affected thereby.

The ventilated head G' consists of two layers of thin material set crosswise and fastened by the nails *a'* *a'*, such construction serving to secure the proper ventilation and to make the head cheap and strong, it not being easily split. Outside the head is placed the usual hoop F in the ordinary manner, and to give the barrel the same appearance as other barrels it may be provided with intermediate hoops. These are, however, not specially required, as they add but little to the strength of the barrel.

In the process of constructing my improved barrel the staves are first secured to the mid-



dle hoop or hoops laid out flat, which may be done by the ordinary nails, but preferably by means of the metallic staples *b b*, in a manner shown in Fig. 5, as such fastenings give a better security to the outer edges of the stave. 5 The hoop or hoops B or C C are then connected at the ends, rounding up the barrel thereby. The ends of the component parts of the staves are then secured to each other 10 and to the internal hoops E E, the barrel being then in its final form ready for the heads.

From the foregoing it will be evident that the removal of the end hoops, though it loosens up the staves a little, does not permit the barrel to spread at the end, and the barrel is in 15 practically the same form with them off as on. This construction, it will be seen, provides a sufficient internal support for the barrel in the middle to prevent collapse; but 20 without putting a hoop or hoops inside the barrel, which is objectionable, because in the operation of packing it is in the way, is liable to get knocked loose, and more than all else, tends to greatly mar the contents of the barrel, such as fruit and the like. 25

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

1. A barrel-stave composed of two similar pieces having their ends abutting and connected together and held spaced apart between such ends, whereby the stave is trussed and strengthened, substantially as and for the purpose described. 30

2. A barrel formed of staves composed each of an inner and an outer member, having their ends abutting and held together and interposed spacing members at or near the middle thereof, substantially as and for the purpose described. 35 40

3. A ventilated barrel formed of a series of staves held spaced apart, each stave formed of an outer and an inner member, the ends of which abut and are secured together, and one or more hoops interposed between the inner and outer members of the staves, whereby each stave is trussed and strengthened and whereby an outer elastic covering is provided to protect the contents of the barrel from shocks, substantially as shown and described. 45 50

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

JAMES P. COWDEN.

Witnesses:

S. B. COWDEN,  
W. H. MEYERS.