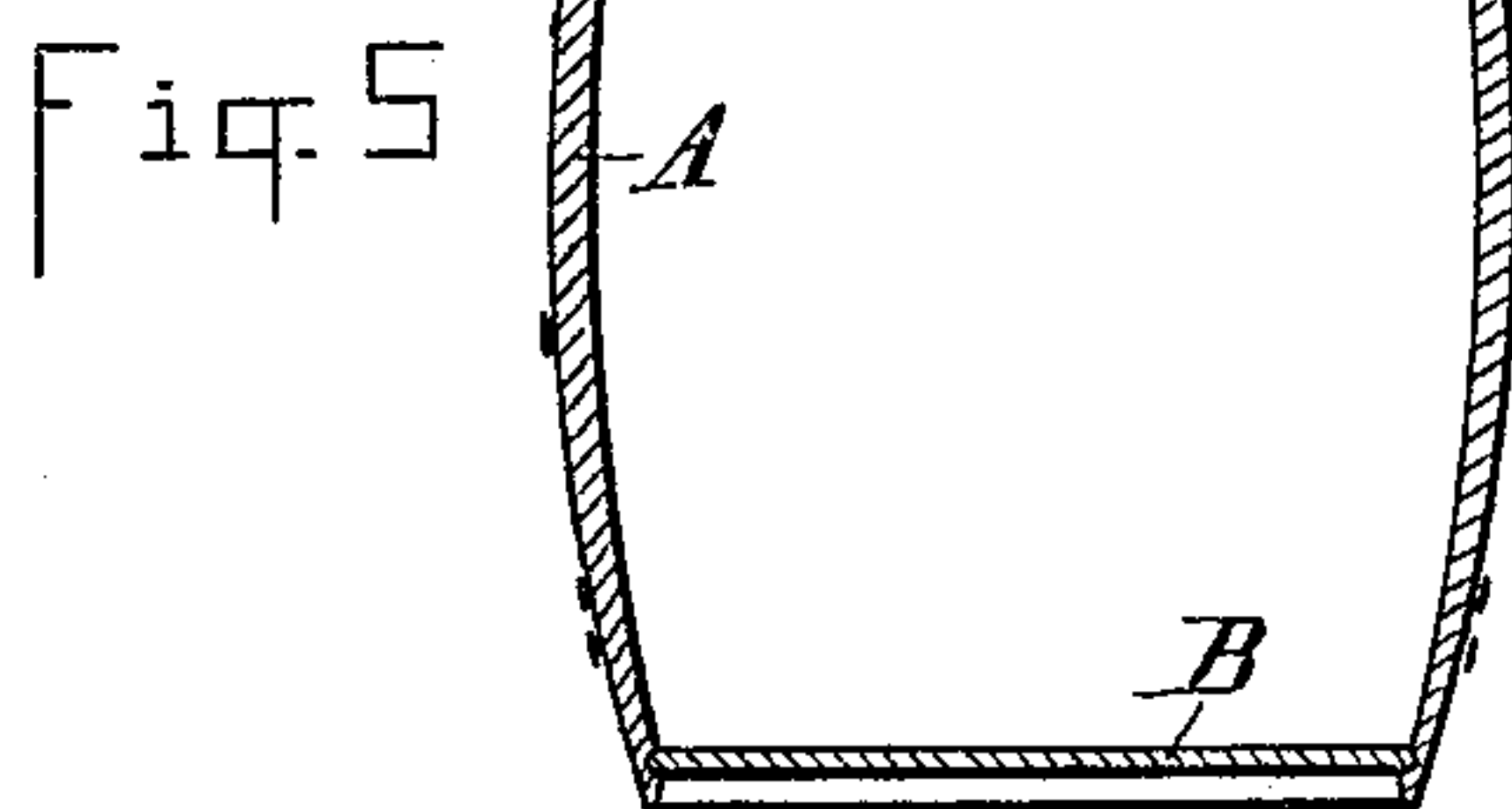
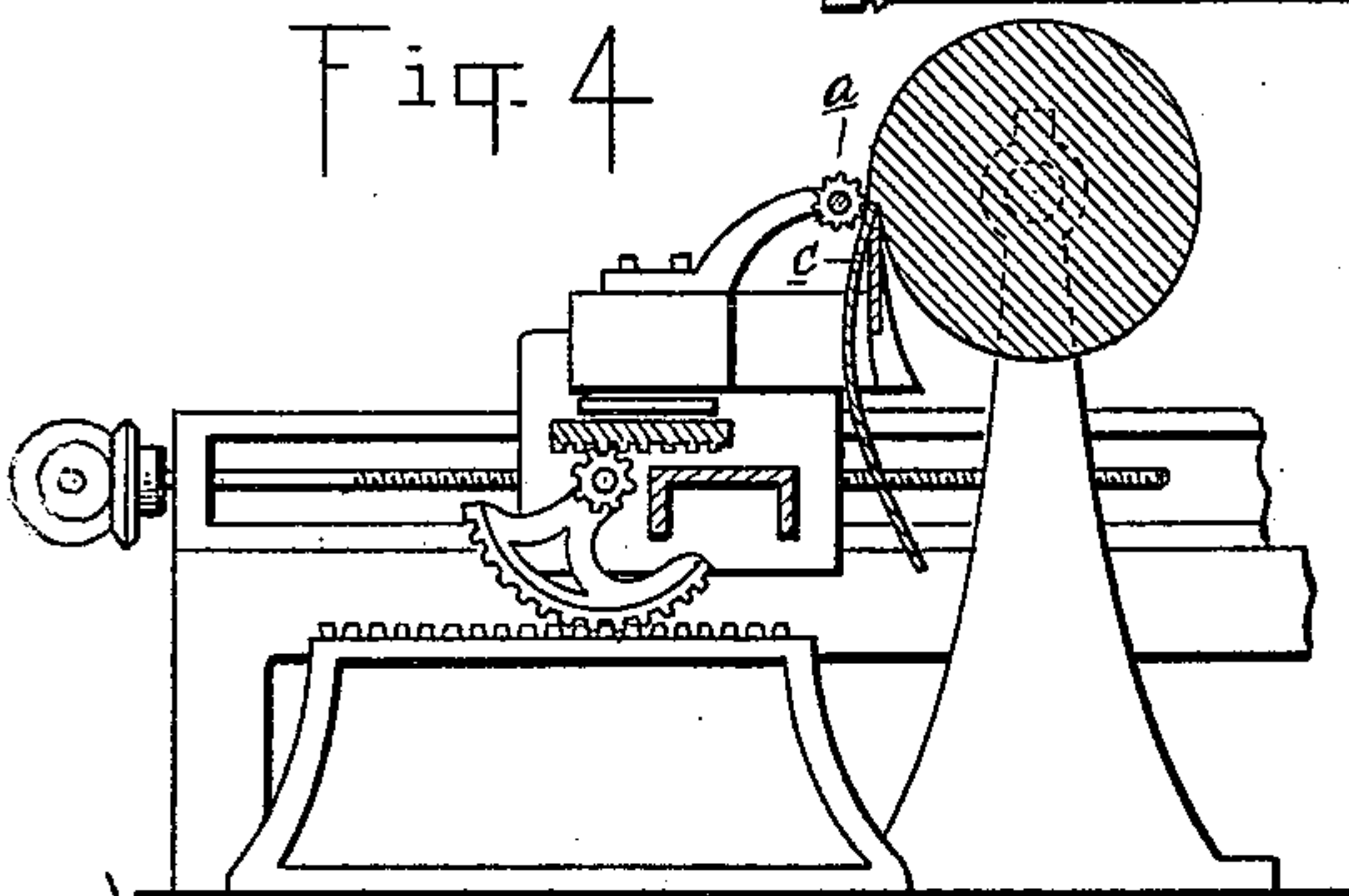
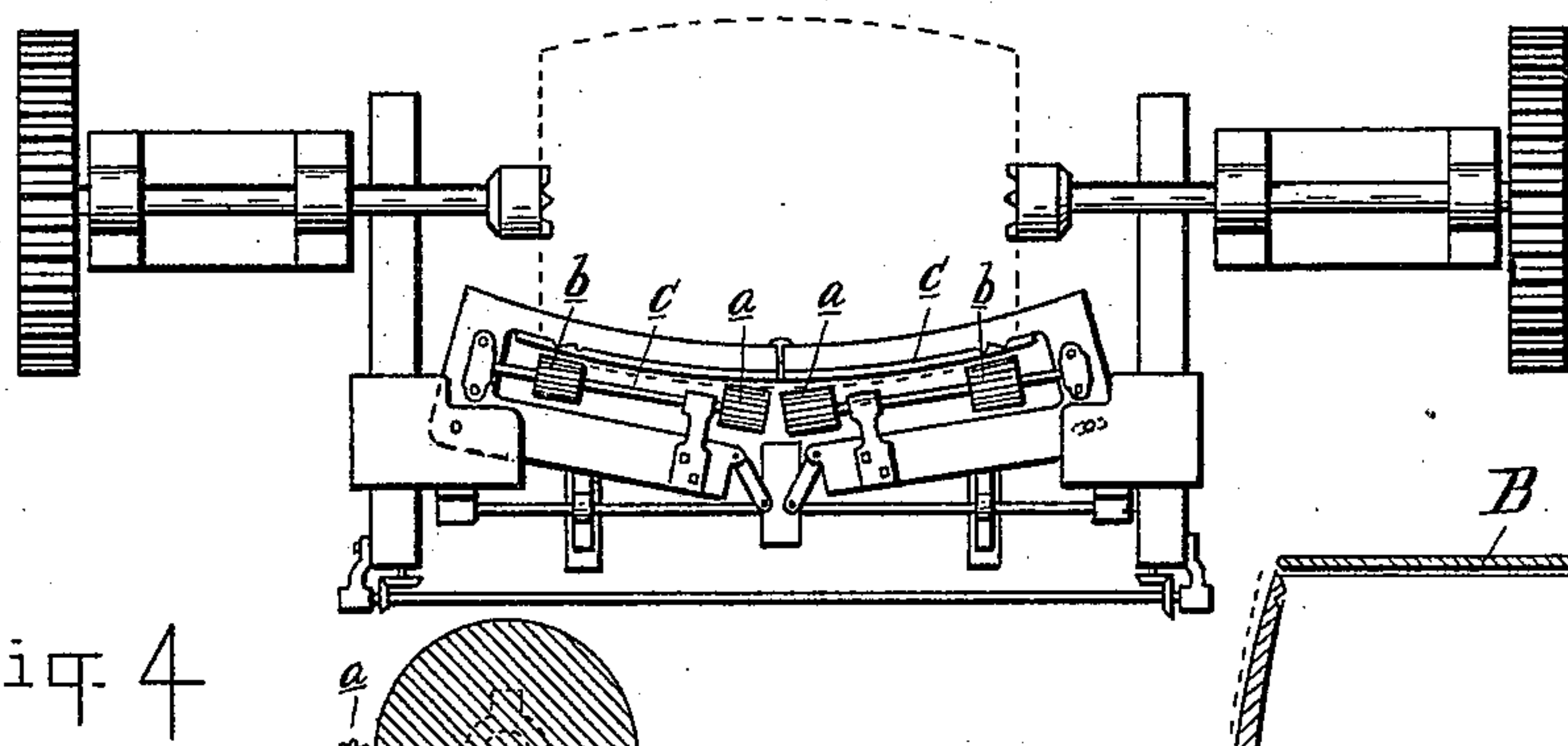
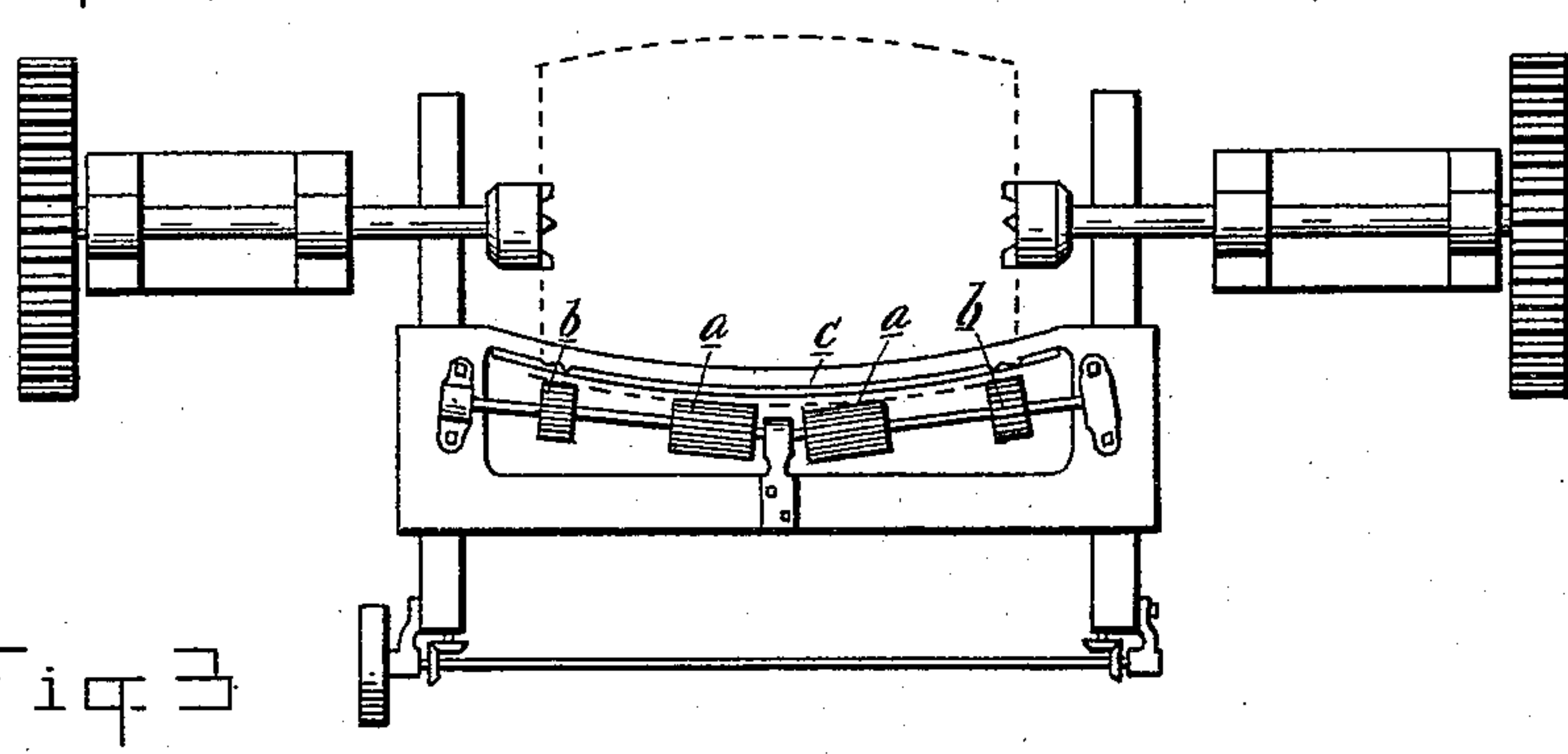
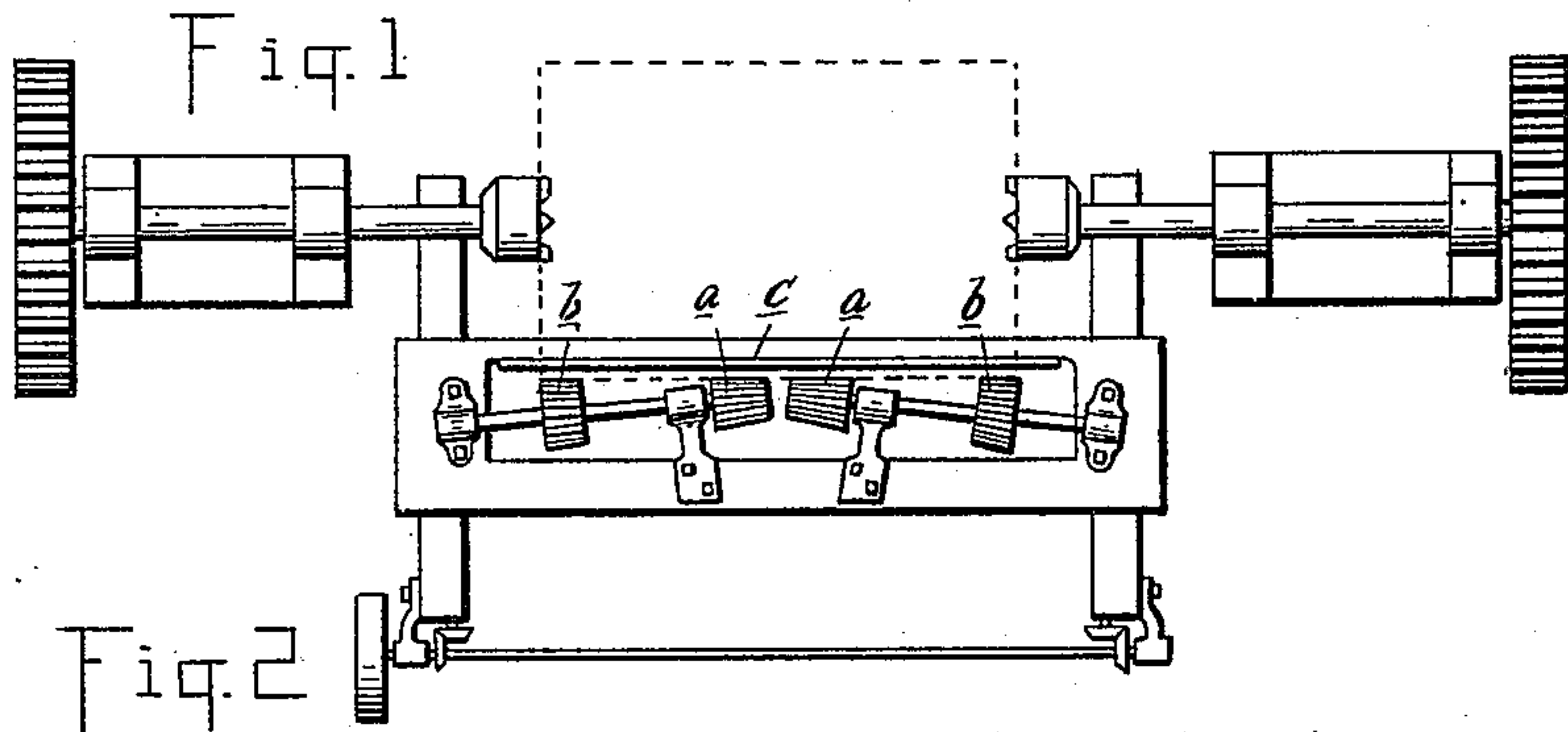


(No Model.)

J. W. CHAPMAN.
PROCESS OF CUTTING VENEERS.

No. 463,888.

Patented Nov. 24, 1891.



Witnesses:
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UNITED STATES PATENT OFFICE.

JAY W. CHAPMAN, OF DETROIT, MICHIGAN.

PROCESS OF CUTTING VENEERS.

SPECIFICATION forming part of Letters Patent No. 463,888, dated November 24, 1891.

Application filed January 2, 1890. Serial No. 335,710. (No model.)

To all whom it may concern:

Be it known that I, JAY W. CHAPMAN, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Processes of Cutting Veneer, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to new and useful improvements in processes for cutting veneer intended for making barrels or packages.

My invention relates more specifically to that kind of veneer which is cut from a barrel-shaped bolt or log, and whereby such veneer when forming the staves of a barrel naturally imparts to the barrel its peculiar bilge-shaped form.

20 The advantage of barrel-stave veneer cut from a barrel-shaped log or bolt is that barrels can be built therefrom with a minimum number of staves, if desired, even of a single stave, and it is obvious that this forms a great advantage over the ordinary barrel formed of many staves in being not only stronger and of handsomer appearance, but also in being more tight on account of the fewer joints. However one serious difficulty has been met with in the use of such veneer staves, and 30 that is the difficulty of securing or removing the heads from such barrels. This difficulty arises from the fact that the ends of the barrel formed only of one, two, or three such staves cannot be expanded or contracted as readily as in the ordinary barrel formed of many staves or in the barrel formed of ordinary veneer divided at its ends into a number of separate staves. A certain degree of expansibility or "give" is required to secure the head into the barrel or to remove it, and to obtain this with the same facility as in the barrels composed of many staves is the object of my invention.

45 To this end my invention consists in the process of straining or expanding the marginal edges of the veneer in cutting it just enough to separate the fibers without actually splitting the wood. Veneer stretched or expanded by my process will, in making a barrel of it composed of one, two, or more of such staves, have at its ends enough give or spring to allow of forcing the head in or removing it without

splitting the wood, all as more fully herein-after described, and shown in the accompanying drawings, in which—

55 Figure 1 is an end elevation of a veneer-cutting machine having my improvement attached thereto adapted for cutting straight veneer. Fig. 2 is a similar view in which the machine is adapted for cutting bilged veneer. 60 Fig. 3 is a similar view showing the machine equipped with adjustable knives. Fig. 4 is a vertical central section thereof. Fig. 5 is a vertical section through a barrel constructed of my veneer and with the head yet unsecured. 65

A is a barrel of ordinary form and construction, and B is the head adapted to fit into the top of the barrel. In the act of heading the barrel, as in the ordinary manner, it is clear that in forcing the head down into 70 the croze of the barrel the top of the barrel must be able to expand. With a barrel constructed of many staves the staves readily bend outwardly without trouble, and either spring back into place after the head is forced 75 in or are drawn back in securing the top hoops around. With a veneer barrel constructed of one or more staves only this would not be so easy and would result generally in injuring the head by splitting off the head or 80 producing several cracks in the wood, which although they would be closed again by the top hoops after securing the head in, nevertheless the cracks remain, and by subsequent shrinkage of the wood deprive the barrel of 85 its intrinsic value of having a minimum of joints. To overcome this I stretch or strain the veneer, or at least a marginal portion, along its edges, preferably in the act of cutting it, as the wood is then in a soft condition 90 and can be considerably stretched. In the subsequent drying of the veneer this stretching is lost or partly lost by the wood contracting again; but if a barrel is built of such veneer the head may be forced into place 95 without any liability of injuring the head or splitting or cracking the veneer forming the stave or staves on account of the inherent facility of the veneer to again expand all around after the fibers of the wood have been previously opened or separated in a large number 100 of places.

The stretching or straining of the fibers of the wood, as above described, I preferably ac-

comply while cutting the veneer, as the wood being rendered soft by steaming is then in the most favorable condition; but other advantages are derived from doing so—viz., the operation of stretching makes the veneer more pliable and less liable to break off or crack, so that it can be taken off with less damage or waste than where the veneer is cut in the ordinary way. This is especially the case in cutting bilged veneer, which is more difficult to take off than a straight veneer. The preferable way in which I accomplish the stretching is by means of corrugated, fluted, or serrated rollers, which I use instead of the ordinary compression-rollers. The central roller or rollers *a*, by being pressed against the wood and having suitable serrations, are forced to revolve and to communicate their motion through a common shaft to the end rollers *b*. These are made of suitable size to have a greater peripheral speed than the peripheral speed of the log at the point at which they travel. The result is that the veneer at these points is pulled off or stretched, the degree of stretching depending on the relative difference of peripheral speed between the rollers on the log at their points of contact. By making these relative differences comparatively small the stretching is accomplished without splitting the veneer.

My device does not theoretically accomplish the stretching of the veneer, as it will be easily seen that the result is rather a separation of the fibers at small distances apart—that is, where the serrations of the rollers make their deepest indentations into the wood; but for practical purposes this is sufficient, as but little stretching is needed to accomplish the object of my invention—that is, to impart a certain degree of expansibility to the ends of the barrels made from veneer staves.

It is obvious that the stretching of a portion of the marginal ends of the veneer may be accomplished in different ways and by means which furnish a more perfect result; but I prefer the way described as being the most simple and practicable and dispensing with extra labor and machinery, and which I have made the subject of a separate application, upon which Patent No. 435,480, of September 2, 1890, was issued.

The devices may be applied to any kind of veneer-cutting machine—as, for instance, as shown in Fig. 1, which shows a machine designed for cutting straight veneer. In this

the end rollers *b* are made of larger size than the central roller and they may be all fastened upon shafts journaled in bearings back of the knife *c*.

Although the packages made from straight veneer have the heads nailed in and on that account do not present any difficulties, still the stretching of the veneer will make better packages, as the heads may be fitted in more tightly.

Fig. 2 shows a machine in which the knife is curved or made on an obtuse angle and in which the veneer is cut from a barrel-shaped log with a croze and a chamfer formed thereon at the same time. Here each half of the knife has a separate roller. The central portion *a* revolves with the same speed as the log and imparts its movement to the outer one, which, even if it is of the same size, revolves faster peripherally than the portion of the log with which it is in contact on account of the contracted end of the log.

In Fig. 3 I show a veneer-cutting machine in which the knife has a hinge in the center for the purpose of varying the angle in the center of the knife, as in cutting veneer adapted to form staves of a uniform bilge. In this type of machine the rollers may be arranged the same as in Fig. 2.

Fig. 4 is a diagram cross-section of the latter machine and shows the relative position of the stretching-rollers and knife.

What I claim as my invention is—

1. The herein-described method of manufacturing barrel-veneer, consisting of cutting the veneer from the log and in stretching the fibers apart at intervals on the outer or end portions, substantially as described.

2. The herein-described method of manufacturing barrel-veneer, consisting of cutting the veneer from the log with a bilge and in stretching the fibers apart at intervals on the outer or end portions, substantially as described.

3. As a new article of manufacture, a veneer stave for packages or barrels, the fibers of which are stretched or strained at the ends, substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses, this 9th day of November, 1889.

JAY W. CHAPMAN.

Witnesses:

M. B. O'DOHERTY,
C. C. ALTON.