

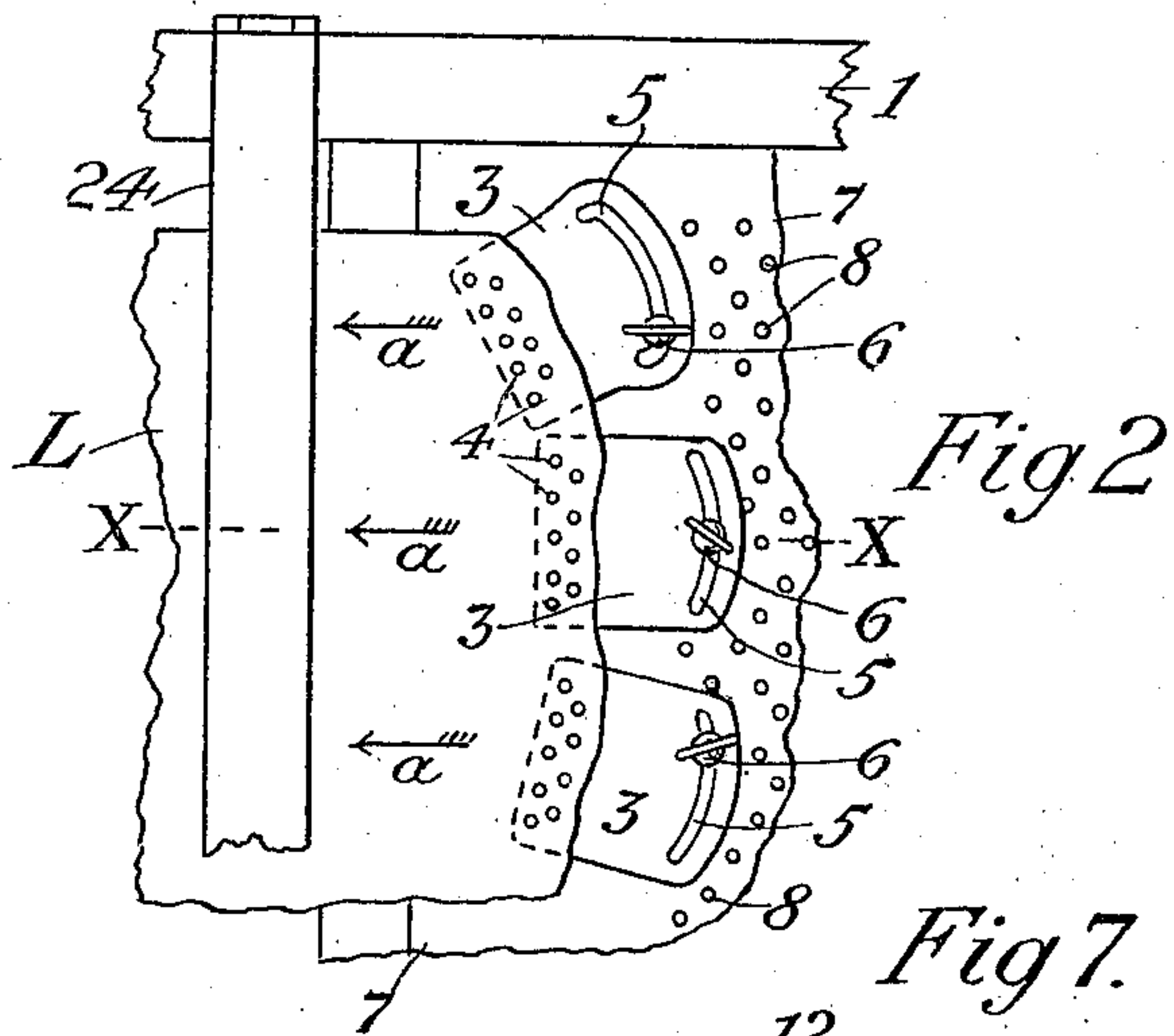
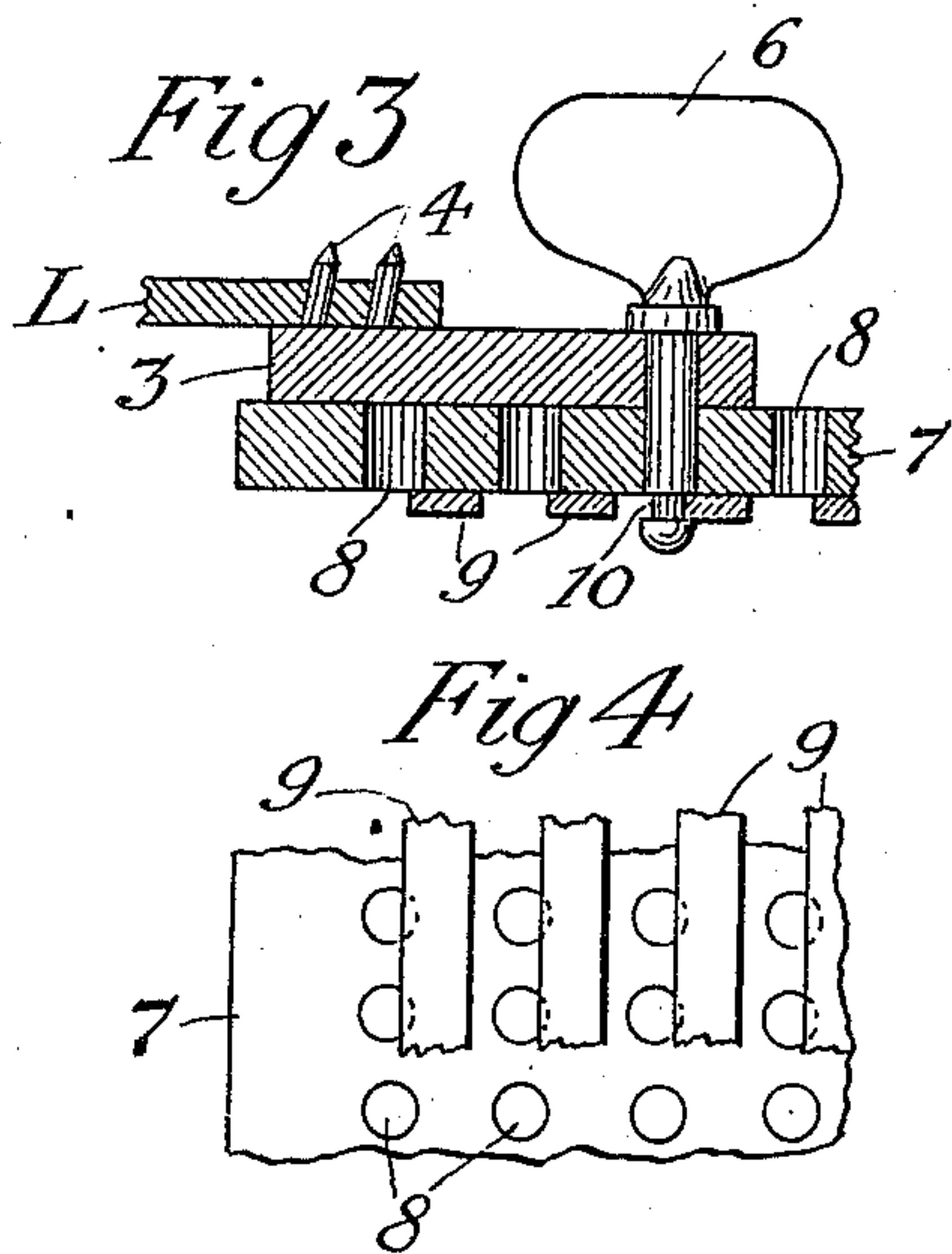
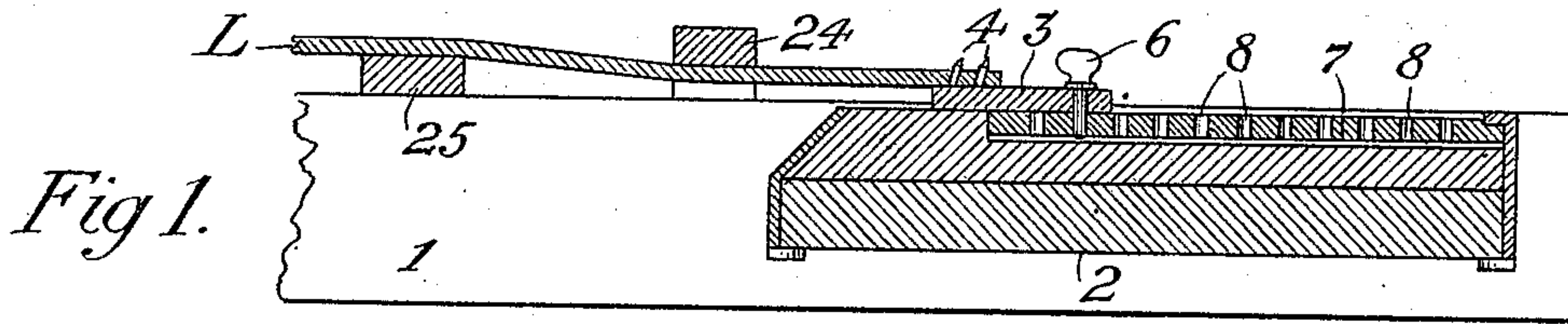
No. 687,001.

Patented Nov. 19, 1901.

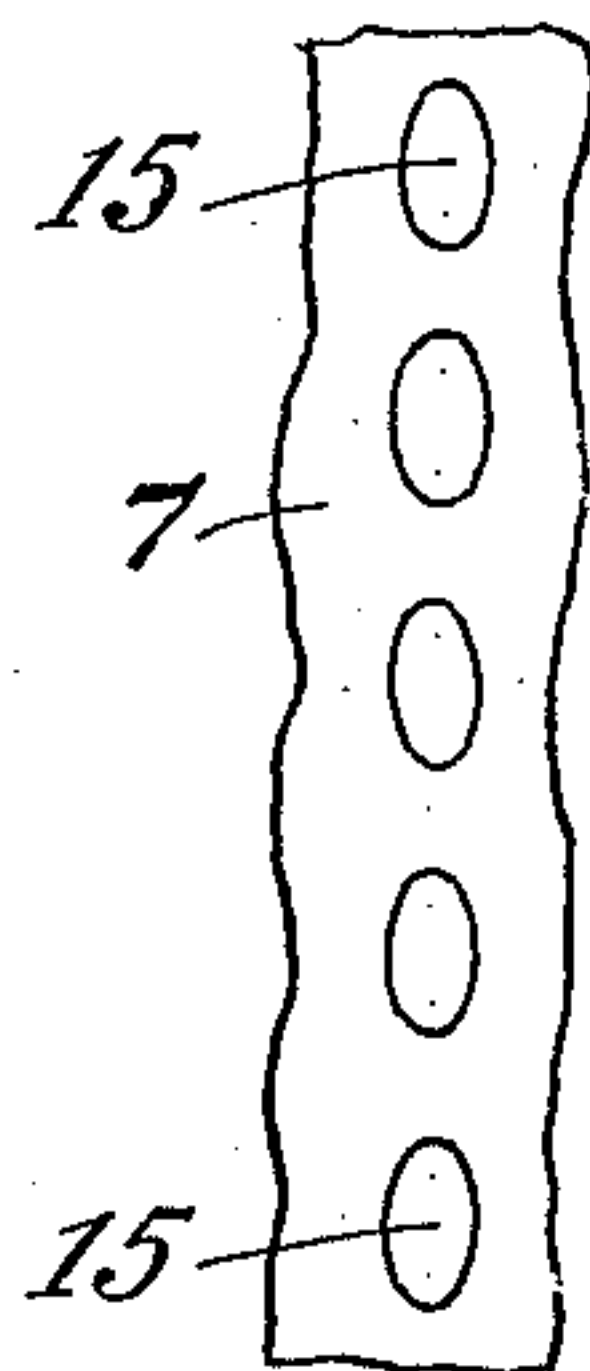
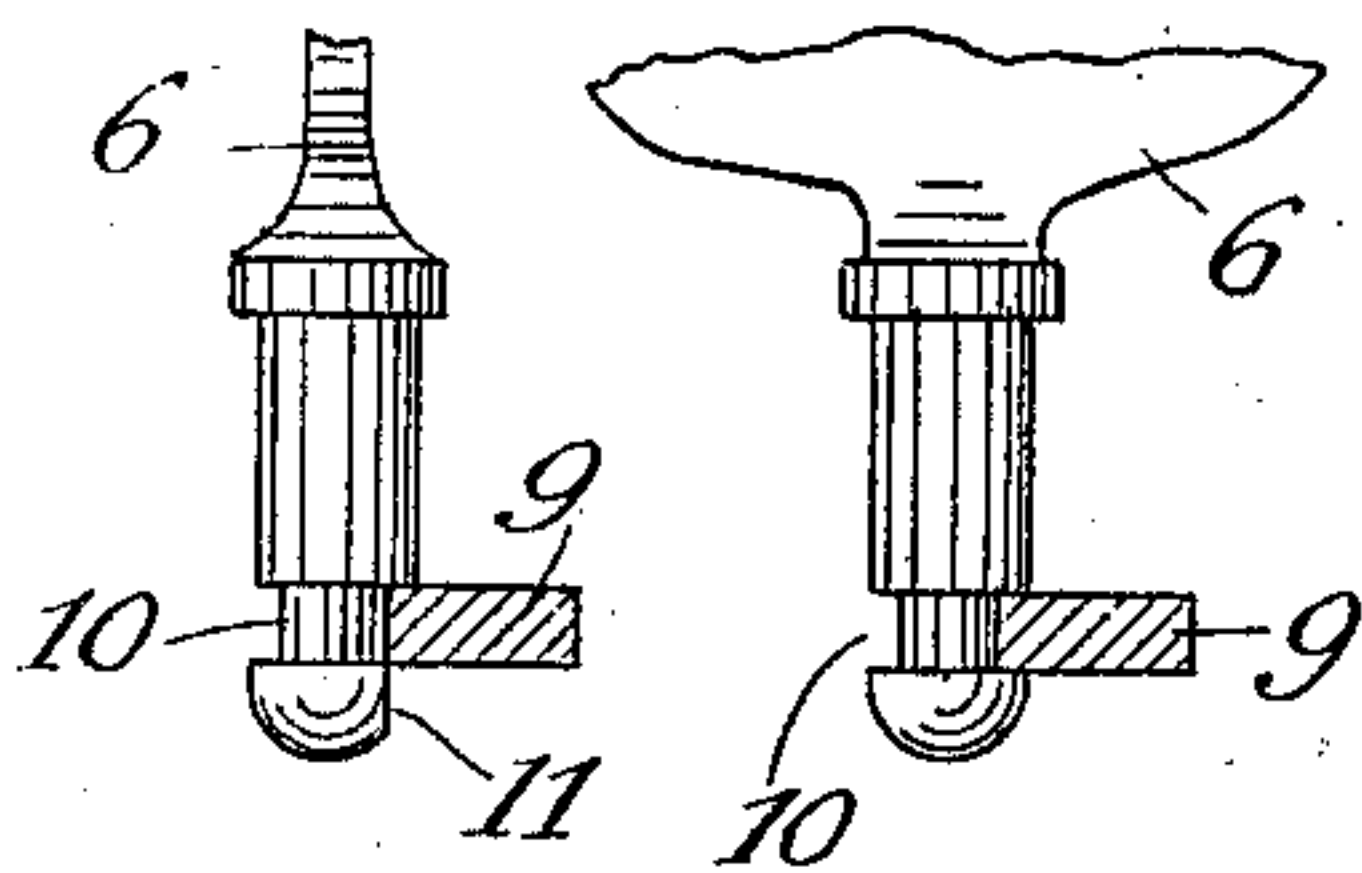
J. CALDWELL.  
LEATHER STRETCHING DEVICE.

(Application filed Mar. 26, 1900. Renewed Dec. 17, 1900.)

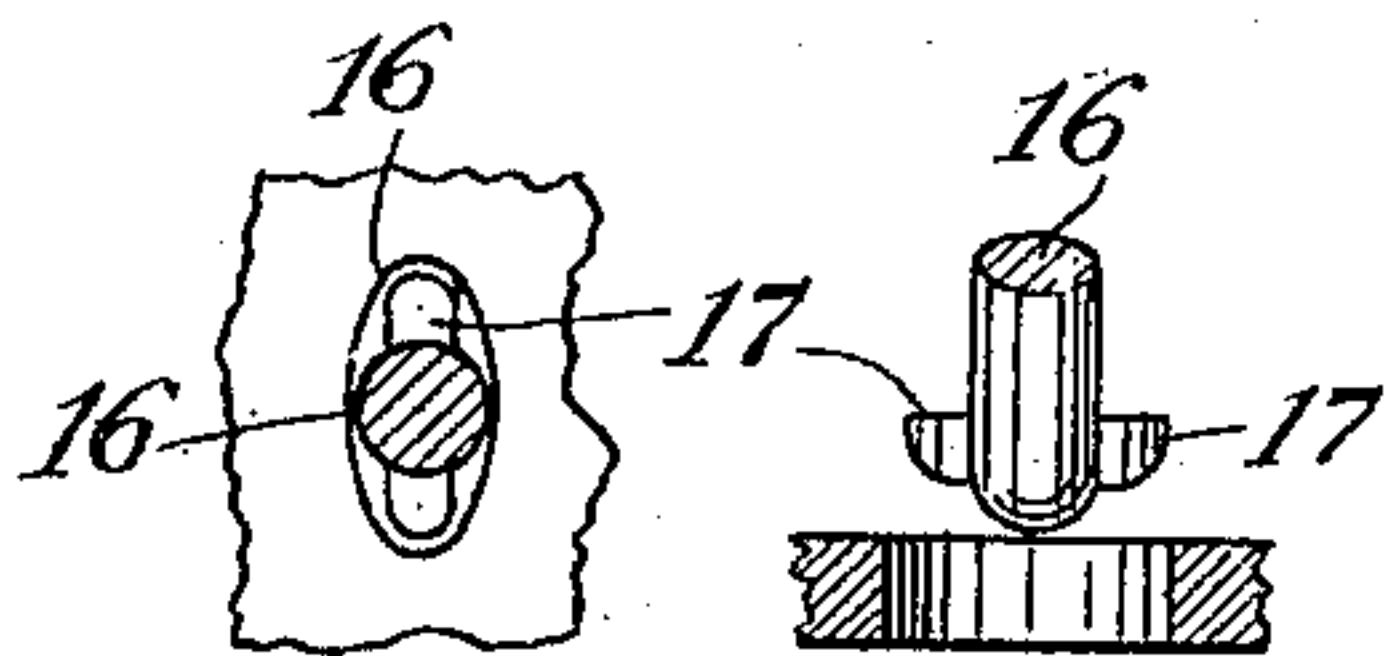
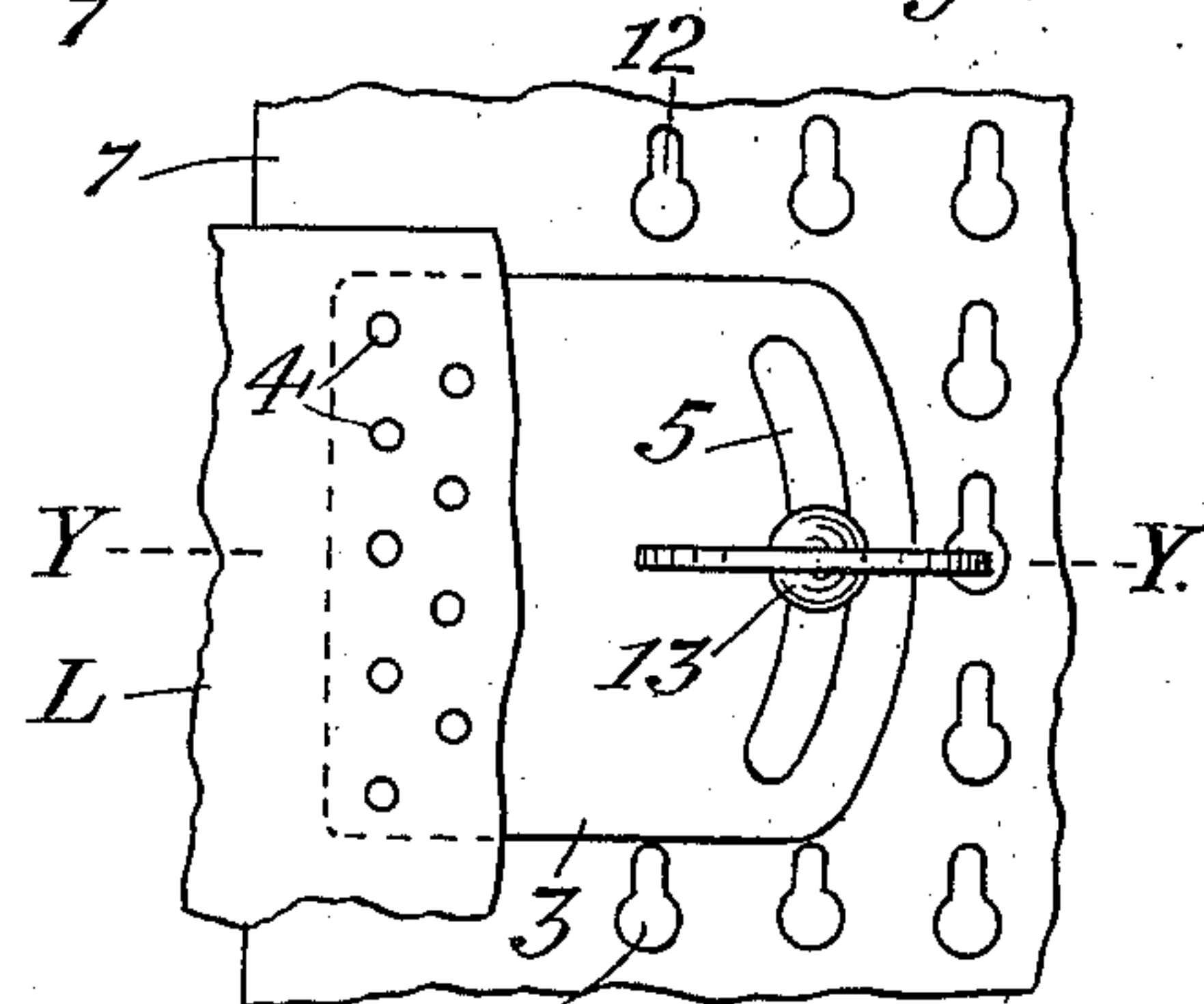
(No Model.)



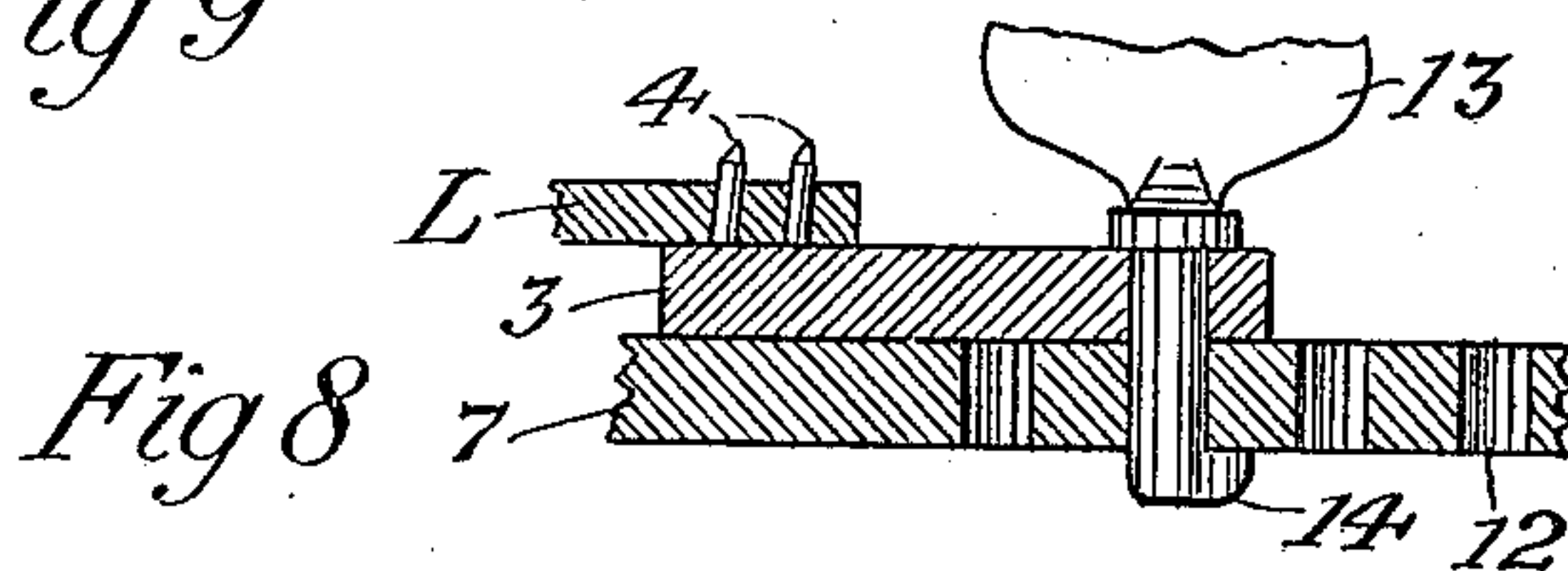
*Fig 5 Fig 6*



*Fig 9*



*Fig 10*



Witnesses  
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# UNITED STATES PATENT OFFICE.

JOHN CALDWELL, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR TO THE W. S. NOTT COMPANY, OF MINNEAPOLIS, MINNESOTA, A CORPORATION.

## LEATHER-STRETCHING DEVICE.

SPECIFICATION forming part of Letters Patent No. 687,001, dated November 19, 1901.

Application filed March 26, 1900. Renewed December 17, 1900. Serial No. 40,215. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN CALDWELL, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Leather-Stretching Devices, of which the following is a specification.

My invention relates to leather-stretching machines, and particularly to the devices employed in such machines for holding the leather by engaging marginal portions of it, such devices having suitable connections with the stretcher-heads or other proper part of the machine; and the object of the present invention is to provide convenient means for pivotally connecting such holders to the appropriate parts of the machine.

My improvements are illustrated in the accompanying drawings, in which—

Figure 1 is a vertical longitudinal section of a portion of a stretching-machine, showing one form of the improved holders in operative connection with the machine. Fig. 2 is a plan view showing several of the leather-holders in operative positions. Fig. 3 is an enlarged sectional view on the line  $x x$  of Fig. 2. Fig. 4 is a view of the under side of the bottom plate shown in Fig. 3. Figs. 5 and 6 are detail views of the form of locking device shown in the preceding figures. Fig. 7 is a plan view of one of the holders and a portion of the perforated plate on which it rests and to which it may be locked. Fig. 8 is a sectional view on the line  $y y$  of Fig. 7. Fig. 9 shows a similar plate with perforations of a different shape, and Fig. 10 shows a form of key or locking device used therewith.

In the drawings, 1 designates one of the side pieces of an ordinary stretcher-frame, which is so constructed as to support a side, back, or other division of leather during the operation of stretching it and afterward and until the leather is dried, set, and ready for use. To this frame is secured a fixed head or member 2 for supporting one end of the leather and the holders which are to connect it to the frame, and a sliding head (not shown) is also to be provided for supporting the other end of the leather and suitably arranged for connection with a cross-head or other moving

part of a stretching-machine. My holding devices are adapted for use either with such fixed or movable head or in connection with both heads.

The device for holding the leather consists of a plate or body 3, the front portion of which is provided with suitable means for engaging the leather, the means shown in the drawings being rows of tines or sharp pins 4, adapted to be driven or forced through the leather. The rear portion or tailpiece of the body 3 is provided with a curved or other suitable slot 5 or a corresponding series of separate holes, by means of which it is adapted to be connected to the head 2 or other proper part of a stretcher apparatus. The purpose of such slot or holes is to enable the connection to be made at such point as will bring the line of draft (indicated by the arrows  $a$ ) approximately coincident with the median line of the resistance offered by the engagement of the tines with the margin of leather whether the row of tines be at a right angle or at an inclination to such line of draft.

The means shown in Fig. 1 for connecting the holder to the stretcher-head is a pin, and the means shown in Figs. 2 to 6 is a locking pin or key 6, the pin or key passing loosely through the opening in the tailpiece. On the surface of the head 2 is a plate 7, which may have numerous perforations 8 and having secured at its under side a series of strips 9, that are so placed as to cover small portions of the perforations of the plate. The key 6 has a notched or annular groove 10 near its lower end, and below the grooved portion the stem is cut away at one side, as shown at 11, so that the lower end of the stem may be passed through the plate 7 and below the strip 9 and then turned to position to lock, as indicated in Figs. 5 and 6. The advantage and the principal object in providing for the locking of the holder to the head by means of such key are to secure the holder in place at all times, and particularly when it is desired to remove the leather from the stretcher. By having the holders locked down to the plate upon which they rest the leather after it has been stretched and dried may be pulled off, and thus more conveniently and readily freed from the holders than by pulling the latter from the leather,



as would be necessary if the holders were not locked to the head; but obviously the pins or keys need not have lugs or locking devices to enable them to connect the holders to the head for resisting the strain of tension during the stretching operation. It is to be understood that in thus connecting the holders to the stretcher-head they are not prevented from horizontal swinging movement, for the pins or keys serve as pivots whereon the holders may turn laterally to adjust themselves to the direction of the tension of the leather.

In the modified arrangement shown in Figs. 7 and 8 the perforations are of ordinary key-hole shape—that is, circular holes with narrower elongations at one side, as shown at 12—to receive a key 13, having lateral lugs 14 near its end, which by engaging the under surface of the plate 7 will lock the holder in place. In Figs. 9 and 10 the plate-perforations 15 are of oval or oblong shape adapted to receive a key 16, having lugs 17 at both sides, to be operated in the same way as the key 13.

In putting such devices to use the leather-engaging means on the holder-bodies 3 are caused to engage the margin of the strip L of leather, preferably on lines approximately parallel with the edges of the portions engaged, and the holders after being made to thus engage the leather are connected to the stretcher-head by inserting the pins or keys through the openings 5 into the appropriate holes in the plate 7. To prevent the leather from rising under the tension of stretching, a transverse bar 24 may be locked from side to side of the frame over the surface of the leather. The sagging of the leather may be prevented by loose transverse bars 25 resting on the upper edges of the side pieces. The parts being thus arranged, power may be applied to the movable head and the leather stretched to the required degree, the movable head being locked by a dog engaging ratchet-teeth in the usual manner, and when the operation is completed the stretcher-frame, together with the leather and its holders, may be removed from the machine and set aside.

I do not herein claim the adjustable connection of a leather-holder to a stretcher-head by means which enable the holder to swing laterally on its connection, such sub-

ject-matter of invention being reserved to be claimed in an earlier application, Serial No. 1,424, filed January 15, 1900, and the provision of means for varying the point of pivotal connection of the holder to the coupling device conformably to the direction of tension of the leather is reserved to be claimed in my pending application, Serial No. 10,128, filed March 26, 1900.

What I claim herein, and desire to secure by Letters Patent, is—

1. A leather-holder, consisting of a body provided with leather-engaging means on its front portion and having in its rear portion a curved slot concaved toward the leather-engaging means, for permitting the insertion and lateral adjustment of a pin, or key, in combination with a stretcher-head on which the holder is supported and is laterally and longitudinally adjustable, the stretcher-head having numerous perforations in its surface, and an independent pin, key, or like device, for entering the opening in the holder and a selected perforation in the head to pivotally connect the holder to the head and permit it to swing freely thereon under tension, substantially as set forth.

2. The combination with a stretcher-head having numerous perforations in its surface, of a series of independent leather-holders, consisting of bodies provided with leather-engaging means on their forward portions and in their rear portions curved slots concaved toward the leather-engaging means, for permitting the insertion and lateral adjustment of pins or keys, and supported and laterally and longitudinally adjustable upon said head, and independent pins, keys, or like devices, for entering the openings in the holders and selected perforations in the stretcher-head to pivotally connect the holders to the head and permit them severally to swing freely thereon under tension, substantially as set forth.

In testimony whereof I have hereunto set my hand this 20th day of March, 1900.

JOHN CALDWELL.

In presence of—

P. H. GUNCKEL,  
M. F. HARRISON.