

No. 685,255.

Patented Oct. 29, 1901.

J. CALDWELL.
LEATHER STRETCHING DEVICE.

(Application filed Jan. 8, 1901.)

(No Model.)

Fig. 1.

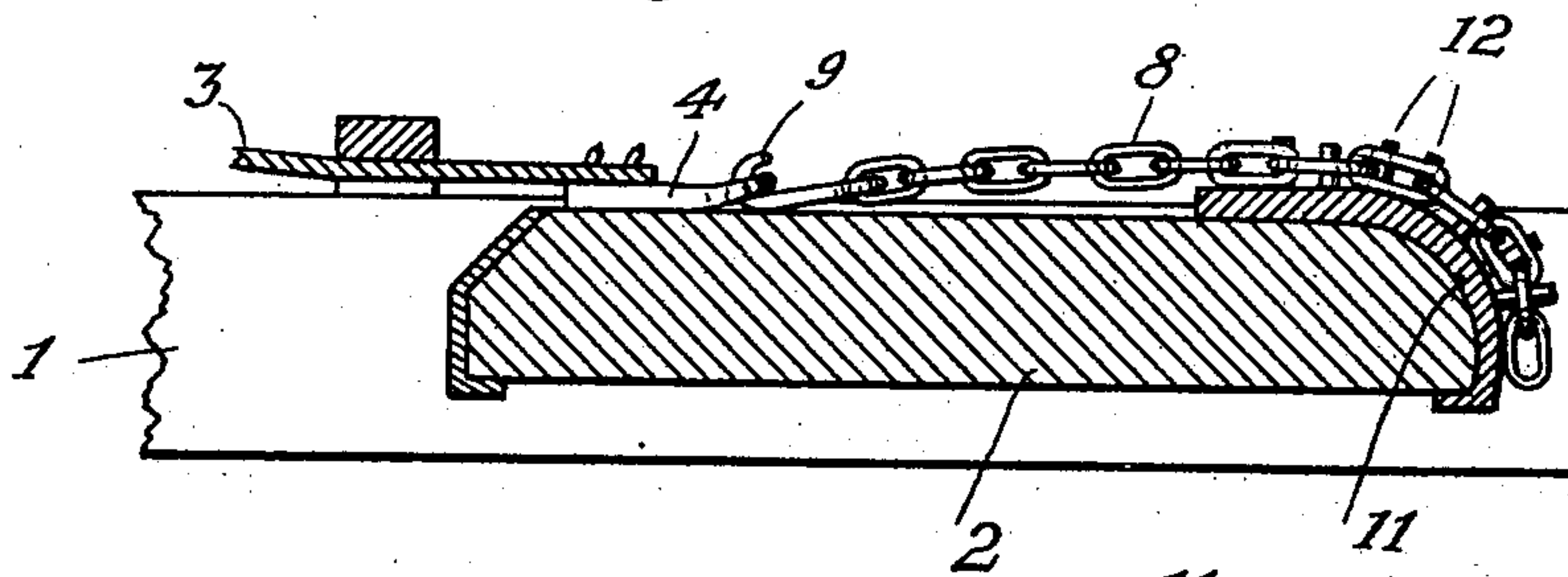


Fig. 2.

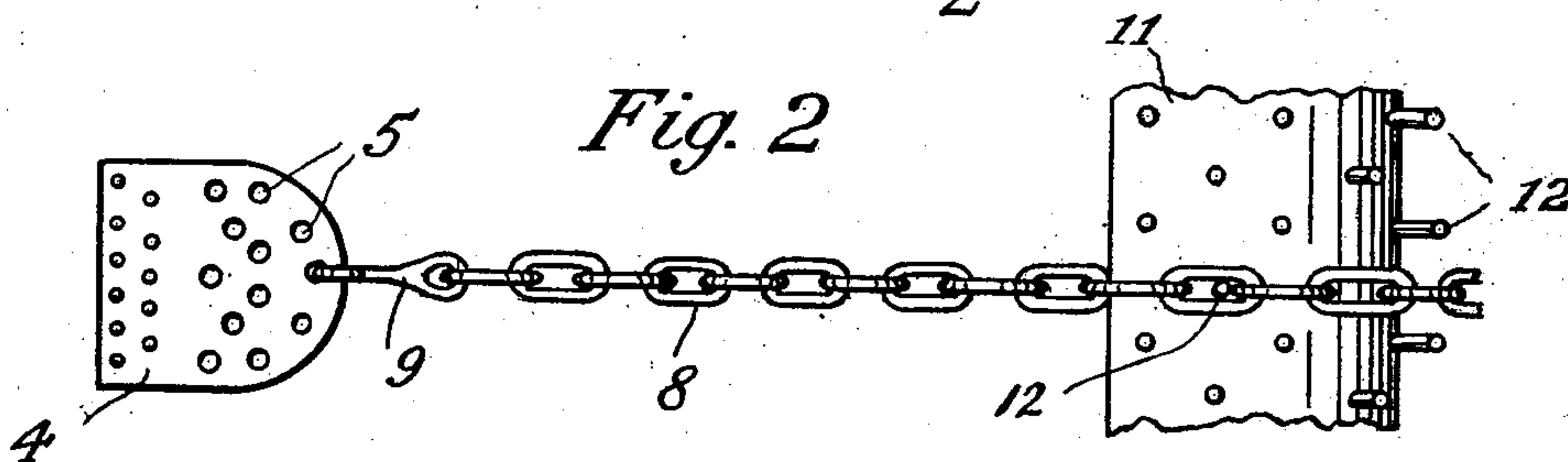


Fig. 3.

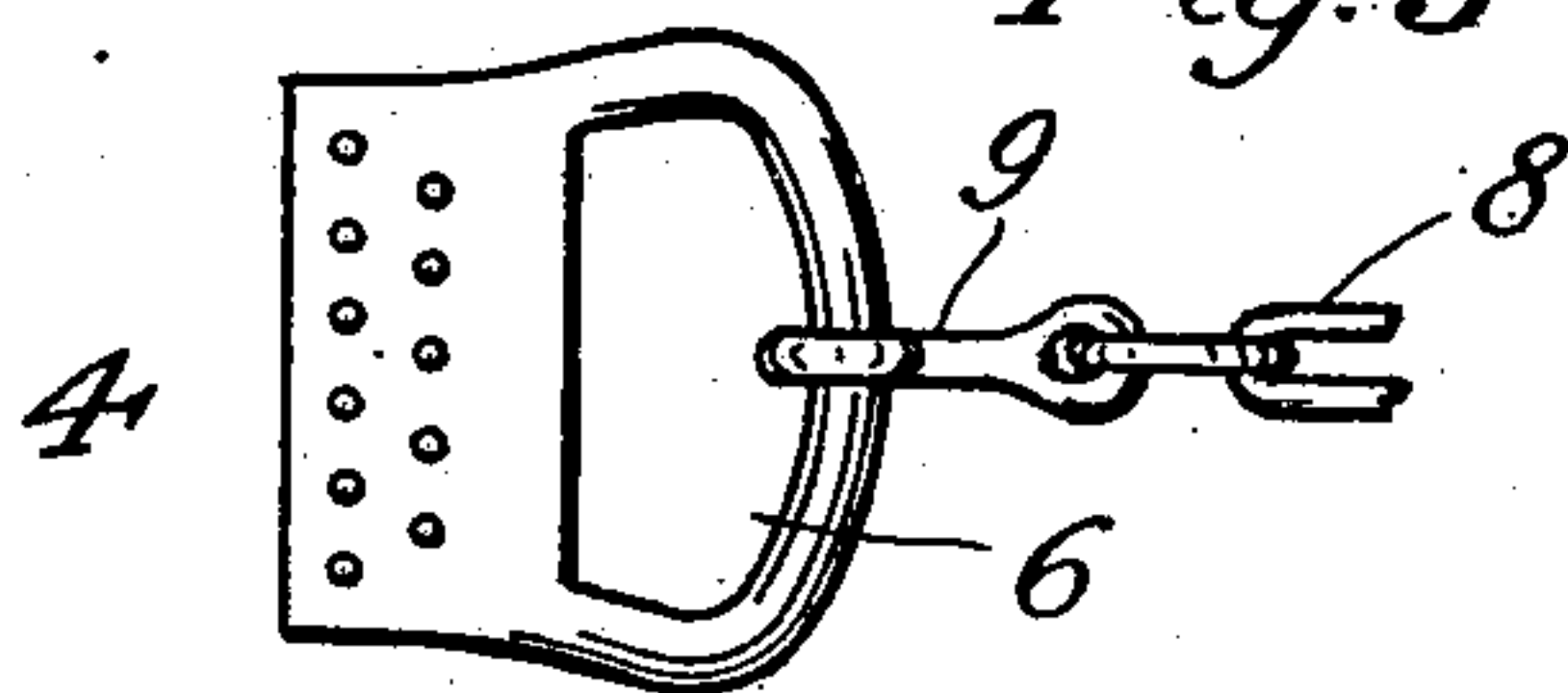


Fig. 4.

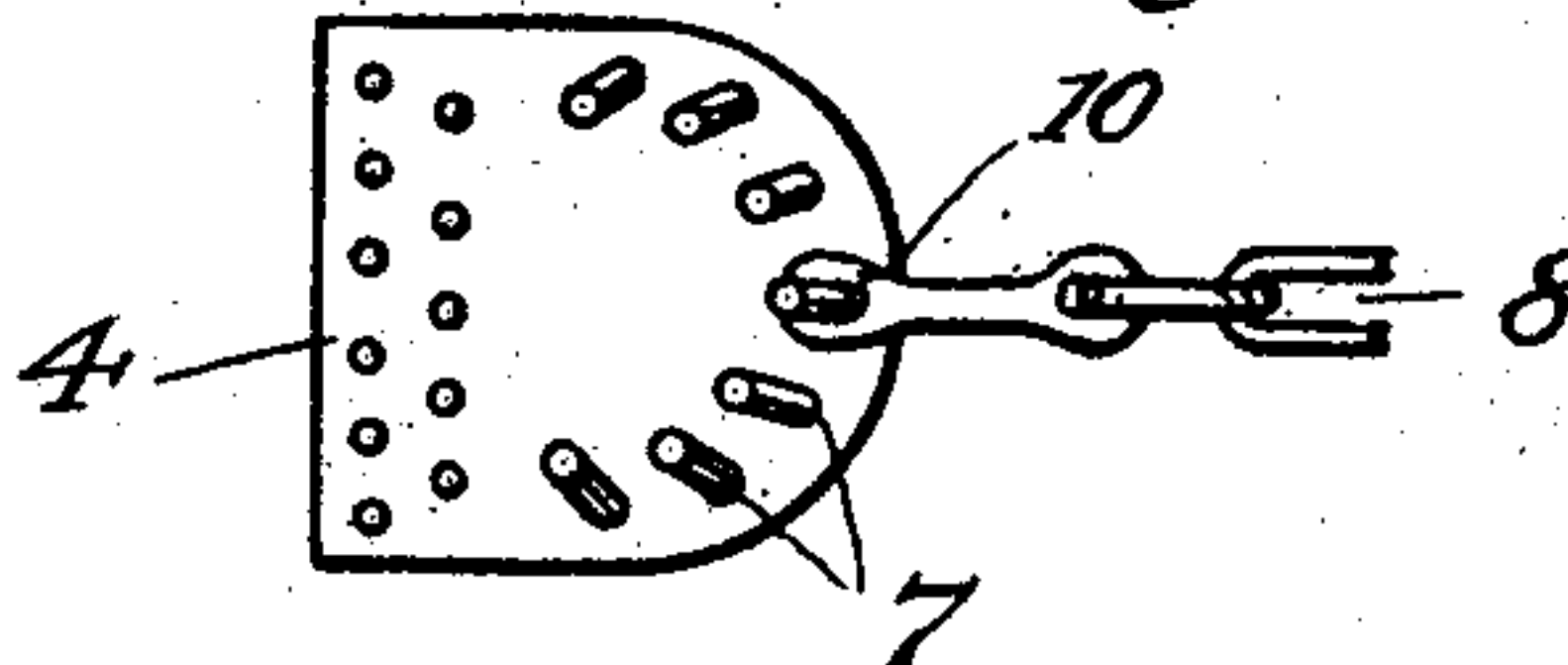
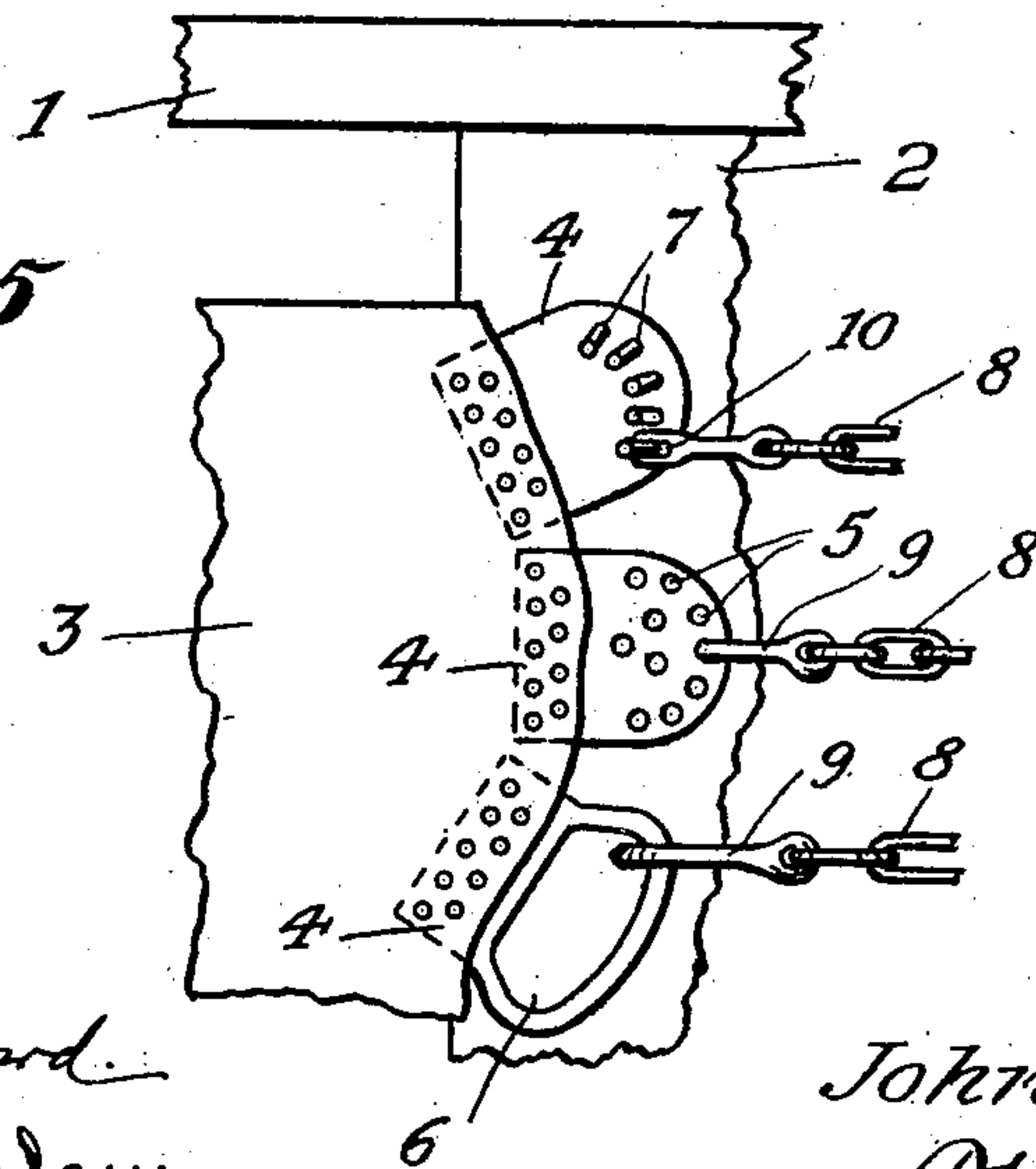


Fig. 5.



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. 685,255, dated October 29, 1901.

Original application filed March 26, 1900, Serial No. 10,128. Divided and this application filed January 8, 1901. Serial No. 42,468. (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 the means for coupling the leather-engaging devices to the stretcher-heads in a stretching-machine; and its object is the substitution of chains or like flexible couplers for the bars and other means commonly employed for such purpose.

The devices of my improvements, stated in a general way, consist of a series of separate bodies, each of which is provided with tines or other suitable means for engaging the leather on lines practically parallel with the edge of the portion of leather it engages, and a series of coupling devices, each of which is adapted to be detachably and pivotally connected to one of the holders, preferably at points thereon varying correspondingly with the inclination of the holder to the direction of tension of the leather, and means for adjusting and successively connecting the holders on a member of the stretching-machine.

Stated more specifically, the improvements consist in providing the rear portion of the holder-plate that carries the tines or clamping-jaws for engaging the leather with an opening or series of openings or with a series of studs, a chain having a hook for engaging in such openings or an eye for engaging such studs, and providing a number of pins on a convex portion of the stretcher-head for engaging the chain, and thereby connecting the leather-holder to the stretcher-head.

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

Figure 1 is a longitudinal section of a portion of a stretcher-frame containing the improvements. Fig. 2 is a plan view of a portion of the same. Fig. 3 is a detached view of a holder having a relatively large opening in its rear portion in place of the series of small openings shown in Fig. 2. Fig. 4 is a similar view showing studs instead of the

holes shown in Fig. 3, and Fig. 5 is a plan view of several of the holders in operative positions.

In such drawings, 1 designates a side of a stretcher-frame, and 2 one of the heads, (either the fixed or the slidable head.) The end of a strip of leather 3 is held in place in the frame by a series of holders 4. The holders shown have their forward portions provided with numerous tines or pins for penetrating the leather; but instead of the tines or pins the holder-plate may constitute a part of or support clamping devices for engaging the leather, for the specific means for engaging the leather to hold it is not a necessary part of the present improvements. The rear portions of the holder-plate may be provided with a series of holes 5, as shown in Fig. 2, or a relatively wide opening 6, as shown in Fig. 3, or a series of pins 7, as shown in Fig. 4. The object of such curved slot or series of holes or pins is to enable the connection of a coupling device with the holder to be made at such point as will bring the line of draft as near as practicable to the center of resistance offered by the holder when engaging a margin of leather at an inclination to the direction of tension of the machine. For making such connection the coupling device provided in the present instance is a chain 8, that has a hook 9 on its end adapted to enter any of the holes 5 or the openings 6, or it may have an eye 10, adapted to receive one of the pins 7, or its links may be utilized for the same purpose. The outer portion of the stretcher-head is preferably composed of a curved plate 11, provided with numerous studs or pins 12 for engaging in the links of the chain. Its convex shape causes the chain to more readily engage the studs and to be drawn toward their bases while under tension.

In practice in securing an irregular end of a strip of leather 3, that is placed in the frame, each holder 4 is independently applied with its row of tines on a line approximately parallel with the edge of the portion of leather engaged, the result of which is that the bodies of the series of holders employed project at different inclinations from the middle line of

the leather, as illustrated in Fig. 5. All of the holders may be thus secured to the leather before any of the coupling devices are connected to them, and the latter may then be
 5 connected at any point in the curved openings 6 or in the proper holes 5 or on the appropriate pins 7 and the chains or coupling devices then connected to the proper studs 12 to cause the tension upon each holder to be
 10 actually or approximately equal at both sides of the point of connection and the connecting-chain to lie in line with the direction of the tension. A simple, efficient, and readily-applied means of coupling the holders to the
 15 stretcher-head is thus provided.

This application is a division of my pending application, Serial No. 10,128, filed March 26, 1900, and the patentable features herein set forth and not claimed are reserved to be
 20 claimed in said earlier application, and the subject-matter of invention herein disclosed and not claimed relative to the means for varying the point of pivotal connection of the holder to the coupling device conformably to
 25 the direction of tension of the leather is reserved to be claimed in my pending application, Serial No. 10,128, filed March 26, 1900.

Having described my invention, what I claim is—

30 1. The combination with a stretcher-head, of a leather-holder having means for the laterally-variable connection of a coupling device, an independent chain, and means for adjustably and detachably connecting the chain
 35 to the leather-holder and stretcher-head, substantially as set forth.

2. In a leather-stretching apparatus, a series of leather-holders consisting of bodies having means provided on their front portions
 40 for engaging the leather and means provided on their rear portions for the laterally-adjustable engagement of a chain, a correspond-

ing series of independent chains for coupling the holders to the stretching apparatus, and means for suitably connecting the chains to
 45 the holders and stretching apparatus, substantially as set forth.

3. In a leather-stretching apparatus, a series of leather-holders consisting of bodies having means provided on their front portions
 50 for engaging the leather and means provided on their rear portions for the laterally-adjustable engagement of a chain, a corresponding series of independent chains, and studs or projections provided on a stretcher-head
 55 for engaging the chains, substantially as set forth.

4. In a leather-stretching apparatus, a series of leather-holders consisting of bodies having means provided on their front portions
 60 for engaging the leather and openings or projections provided on their rear portions for the laterally-adjustable engagement of a chain, a corresponding series of independent chains,
 65 and studs or projections provided on a stretcher-head for engaging the chains, substantially as set forth.

5. In a leather-stretching mechanism, the combination with a stretcher-head having a portion of its surface curved and provided
 70 with studs, of a series of leather-holders consisting of bodies having means for the adjustable attachment of a chain, and a corresponding series of chains for engaging such holders and connecting them to the stretcher-
 75 head by engagement with its studs, substantially as set forth.

In testimony whereof I have hereunto set my hand this 4th day of January, 1901.

JOHN CALDWELL.

In presence of—

P. H. GUNCKEL,
 A. L. WHELAN.