

No. 682,785.

Patented Sept. 17, 1901.

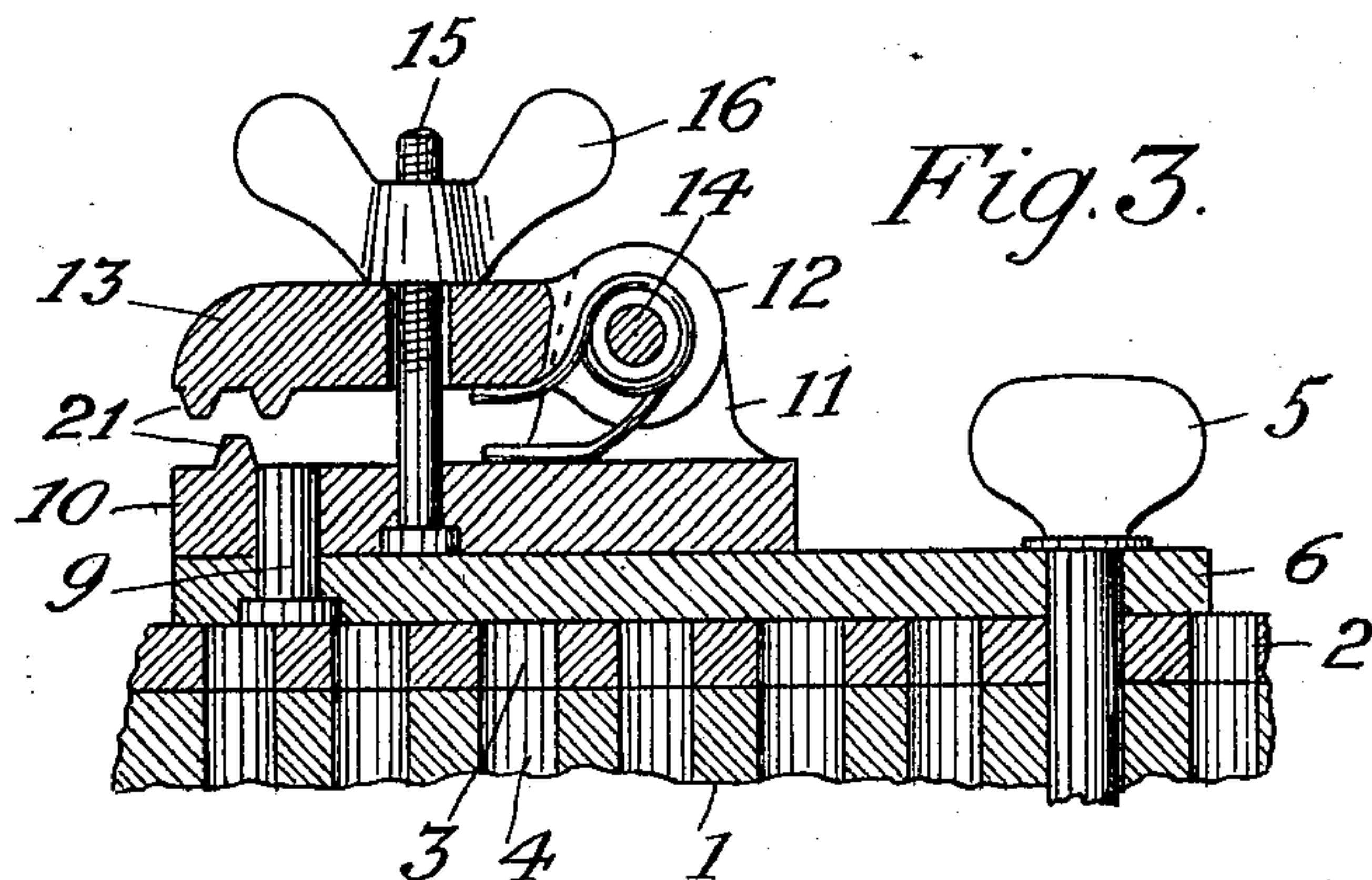
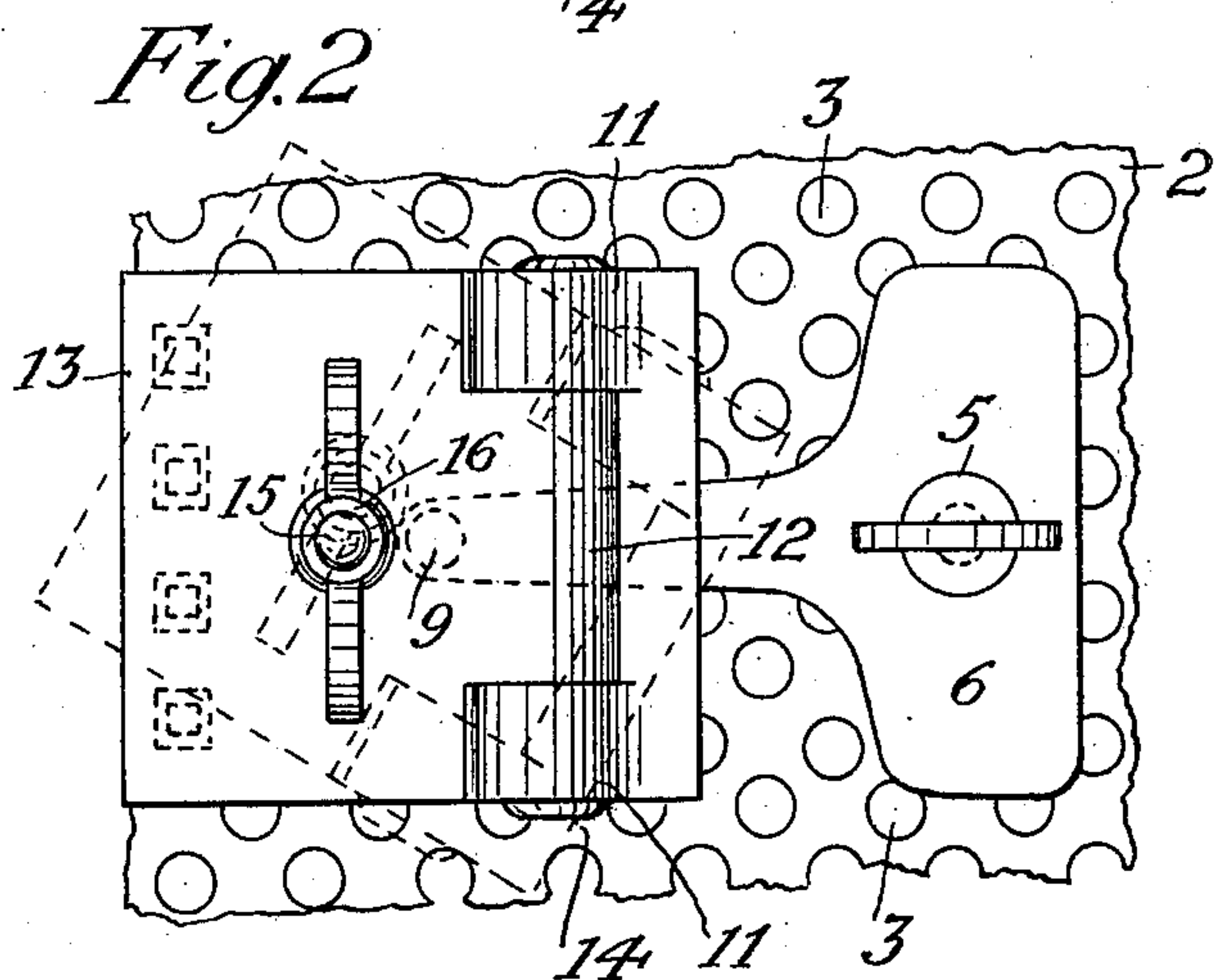
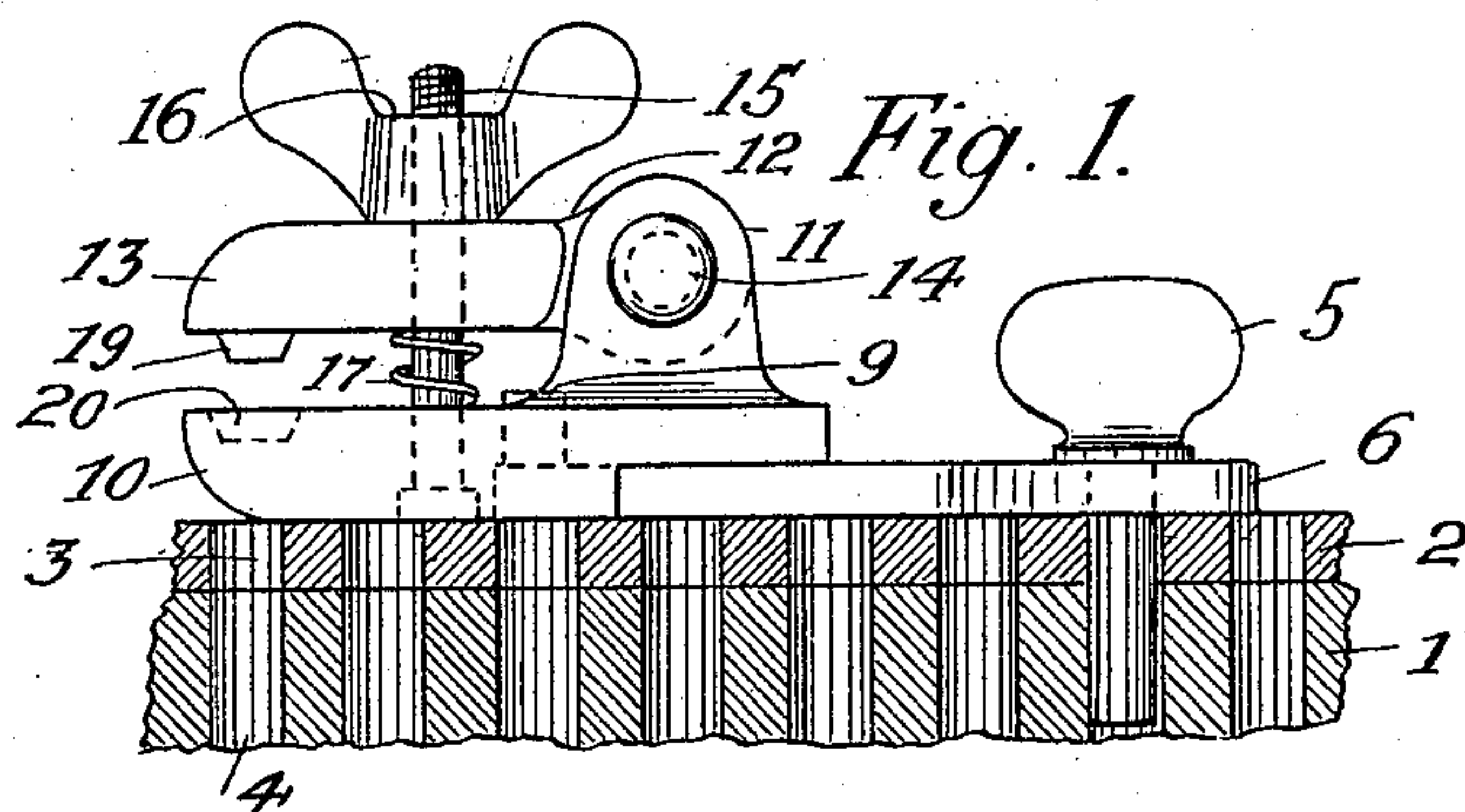
J. CALDWELL.

LEATHER STRETCHING DEVICE.

(Application filed June 21, 1900.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses

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R. W. Smith

Inventor

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By P. H. Gunkel
his Attorney.

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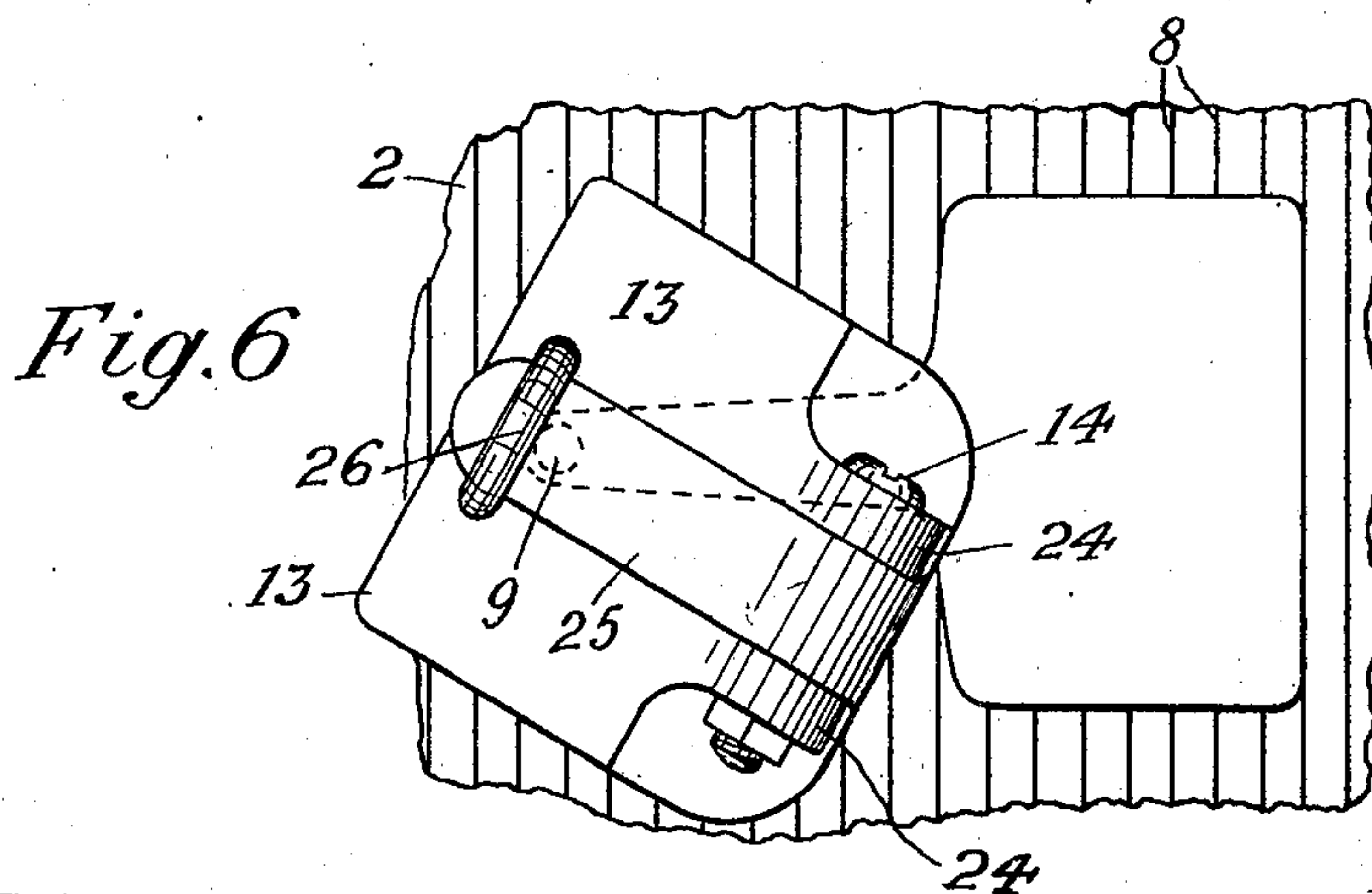
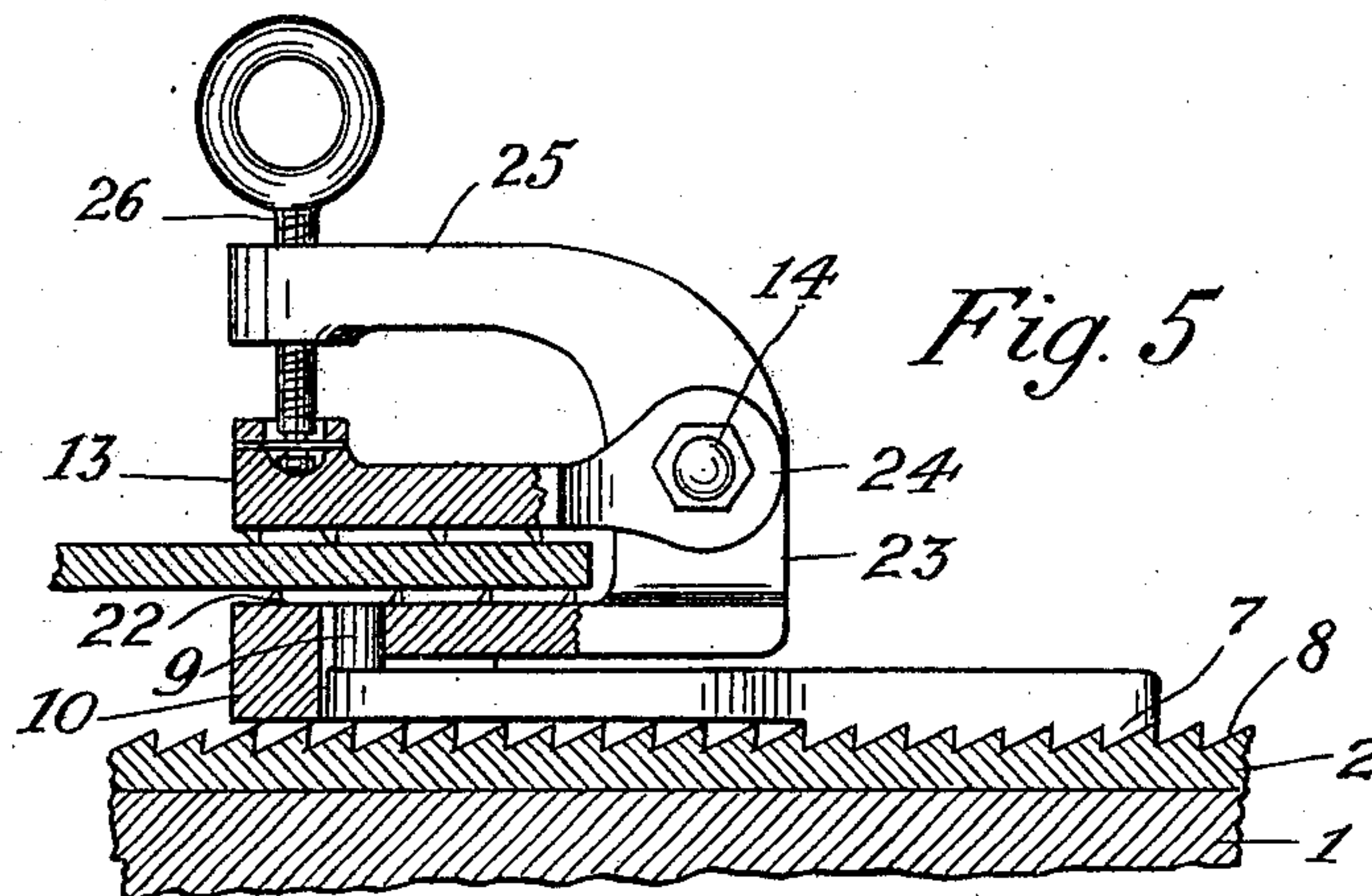
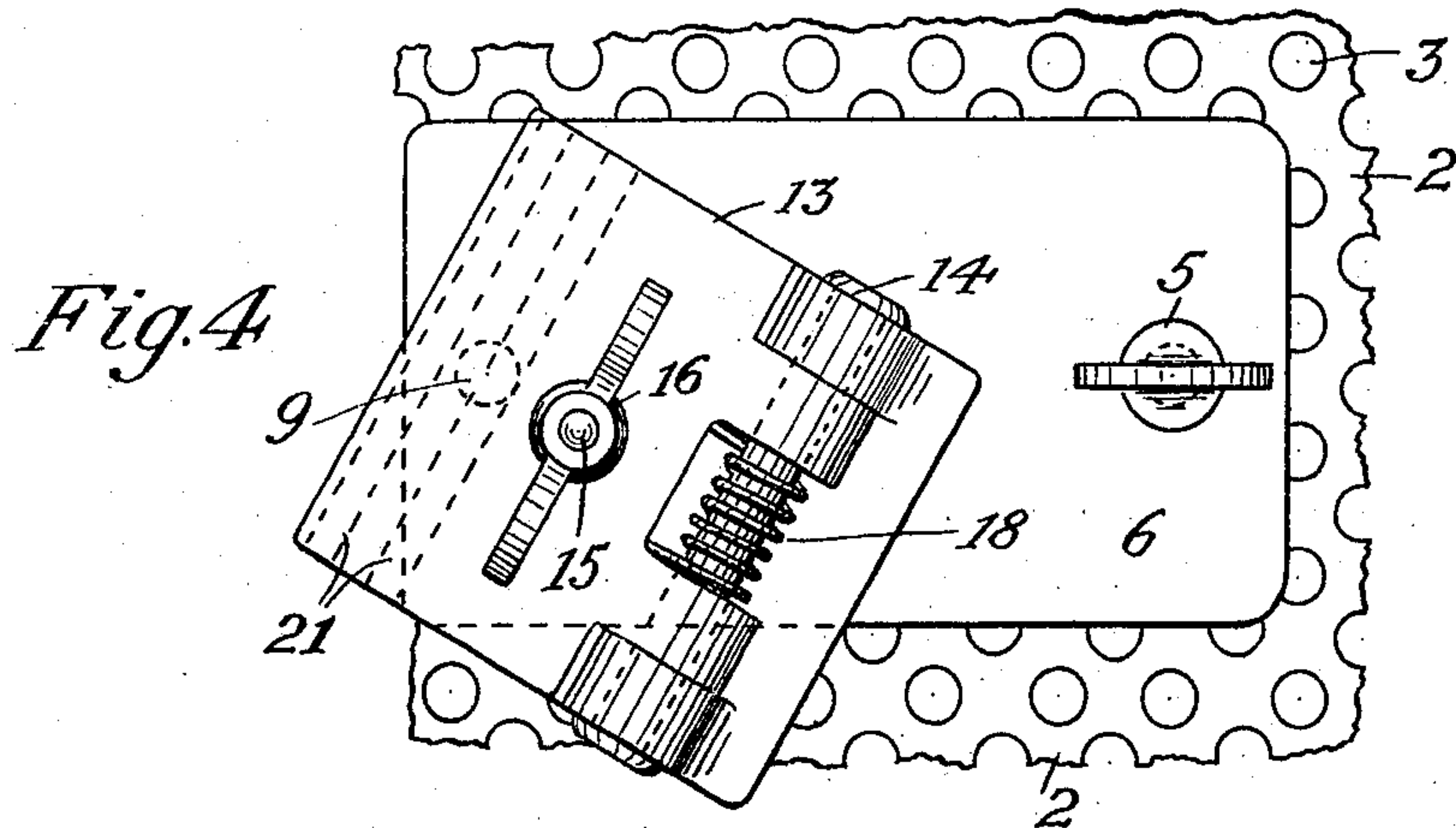
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UNITED STATES PATENT OFFICE.

JOHN CALDWELL, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR TO THE W. S. NOTT COMPANY, OF SAME PLACE.

LEATHER-STRETCHING DEVICE.

SPECIFICATION forming part of Letters Patent No. 682,785, dated September 17, 1901.

Application filed June 21, 1900. Serial No. 21,061. (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 devices employed for holding leather while it is being stretched to adapt it for use in the manufacture of belting; and the object of the invention is improvement of the clamping devices for engaging successive marginal portions of the leather and of the means for adjustably and pivotally connecting the holders to a stretching-machine.

The devices of my improvement, generally stated, consist of clamps, each capable of grasping only a few inches of the margin of the leather and having coupling devices loosely pivoted to them, so as to permit free swinging movement under tension, and adapted to independently and adjustably connect them to a proper part of the stretching-machine.

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

Figure 1 is a side elevation of one of the improved clamps with a portion of the stretcher-head shown in vertical section. Fig. 2 is a plan view of the same. Figs. 3 and 4 are views similar to Figs. 1 and 2, showing a variation of the arrangement of the spring for lifting the upper clamp-jaw and of the pivoting of the coupling device to the clamp; and Figs. 5 and 6 are similar views of a modified construction of the clamp and of the means for attaching it to the stretcher-head.

In the drawings, 1 designates a portion of the body of either a fixed or sliding head of a stretching apparatus, and 2 a metal plate secured on the surface of the body 1. As shown in Figs. 1 to 4, the plate has numerous perforations 3, and its supporting-body 1, which may be of wood, has corresponding holes 4, the purpose of which is to receive a pin, key, or like device 5 for locking the leather-clamp coupling-bar or connection 6 to the stretcher-head. The pin 5 serves not only as a connecting device, but also as a pivot on which the

bar may turn to accommodate itself to any variation in the direction of tension of the leather upon the clamp during the operation of stretching. Another way of connecting the coupling-bar to the head is to provide the plate 2 and the bar 6 with intermeshing teeth 7 and 8, respectively, as shown in Figs. 5 and 6; but such arrangement obviously will not permit lateral swinging of the forward end of the bar 6. The forward end of the coupling-bar is connected by a pivot 9 to the body or lower jaw portion 10 of the clamp, so that the latter may turn freely in horizontal direction on the former. The hole in the plate 10 for receiving the pivot or stud 9 is preferably located at a point coincident with or relatively close in rear of the middle of the leather-engaging portion of the plate, as illustrated in Figs. 3 to 6, in order that whatever may be the angle of the holder to the coupling device in operation the point of their pivotal connection will be actually or practically coincident with the median line of the stress exerted upon the holder. On the rear portion of the jaw-body are standards 11, between which the rear portion 12 of the upper clamp-jaw 13 is hinged by a pintle 14, passed through the parts. The lower or base portion 10 of the clamp is thus arranged to remain in relatively-fixed horizontal position, while the upper jaw may be raised or lowered, as desired. To operate the latter for clamping or freeing the leather, a screw 15 is secured to the lower jaw and projected through an opening in the upper jaw, and provided above the latter with a nut 16, that bears upon the jaw. By turning the nut the leather can be clamped as tightly as required between the jaws. A coil-spring 17 around the screw between the jaws is provided to lift the upper member when the nut is screwed upward. The same end may be accomplished by a coil-spring 18 on the pintle 14, a sufficient space being provided in the hinged portion of the upper jaw to receive the spring, as shown in Figs. 3 and 4, or the nut may have a swiveled connection with the upper jaw to accomplish the same purpose. The object in thus lifting the upper jaw is to provide a free opening between the jaws to re-

ceive the leather and for its removal when stretched and dried.

To prevent the leather from slipping in the jaws, the latter should be provided with suitably-roughened or irregular contact-surfaces, which, as shown in Figs. 1 and 2, may be separate projections 19 on one jaw arranged to register with suitable recesses 20 in the other, or, as shown in Figs. 3 and 4, intermeshing transverse ridges 21, or independent teeth or projections 22, as shown in Fig. 5.

In the modified form of the clamp (shown in Figs. 5 and 6) a single standard 23 is provided at the middle of the rear portion of the lower jaw, and to the sides of this the upper jaw is hinged by a pintle through the ears 24. The standard has a forward extension 25, in which there is a threaded hole to receive a screw 26, the lower end of which has a swiveled connection with the outer portion of the upper jaw. The screw may have a ring, wings, or other device by which it can be conveniently turned to raise or lower the upper jaw.

In use either of the forms of clamps shown may be applied to the margin of an irregular end of leather at such varying inclinations as may be required to have each clamp engage on a line practically parallel with the edge of the portion of leather it grasps, and each clamp may be connected by its coupling-bar to the stretcher-head at such point as will cause the connections of the bar with both the clamp and stretcher-head to fall approximately if not actually in line with the direction of the tension in stretching the leather.

I do not herein claim the subject-matter of invention relating to the means disclosed for the independent and adjustable connection of the coupling devices to the stretcher-head, the same being reserved to be claimed in my earlier applications, Serial No. 1,424, filed January 15, 1900, and Serial No. 9,199, filed March 19, 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.

Having described my invention, what I claim is—

1. A leather-clamp for a stretching-machine, comprising a pair of jaws hinged together, means for operating them to grip the leather, in combination with a coupling device pivotally connected to one of the jaws close to its gripping-surface so that the clamp may swing freely on its pivot under tension, and means for detachably connecting such coupling device to a stretcher-head, substantially as set forth.

2. A leather-clamp, comprising a pair of jaws hinged together, means for operating the upper jaw, and a coupling device pivoted to the lower jaw and permitting free lateral movement of the clamp under tension; in combination with a stretcher-head provided with means for the lateral and longitudinal

adjustment of the coupling device thereon and its detachable connection therewith, substantially as set forth.

3. A leather-clamp for a stretching-machine, comprising a pair of jaws hinged together, means for operating them to grip the leather, a coupling device pivotally connected to one of the jaws close to its gripping-surface and permitting free lateral movement of the clamp under tension, and means for pivotally connecting such coupling device to a stretcher-head, substantially as set forth.

4. A leather-clamp, comprising a pair of jaws and means for operating the upper jaw toward the lower, a coupling-bar pivoted to the lower jaw, and means for pivotally connecting and supporting said bar upon a stretcher-head, substantially as set forth.

5. A clamp for leather-stretching machines, comprising, in combination, a suitable bar, a head mounted upon said bar and adapted to swing laterally in the plane of the same and provided with a fixed jaw, a movable jaw pivotally supported upon said head and having a vertical movement only on its pivots and adapted to engage said fixed jaw when depressed, and means engaging said movable jaw to lock it in engagement with said fixed jaw, substantially as described.

6. A clamp for leather-stretching machines, comprising, in combination, a suitable bar, a head pivotally mounted upon said bar and adapted to swing laterally in the plane of the same, and having a fixed jaw, a movable jaw pivotally supported upon said head above said fixed jaw and having a vertical movement with respect to the same, and a locking device provided on said head above said movable jaw and adapted to engage the same and force it into engagement with and lock it against said fixed jaw, substantially as described.

7. A clamp for leather-stretching machines, comprising, in combination, a plate or bed-piece, a pivoted head supported thereon and provided with a fixed jaw, and a movable jaw having a face overlapping the face of said fixed jaw and adapted to clamp the material inserted between said fixed and movable jaws, substantially as described.

8. A clamp for leather-stretching machines, comprising, in combination, a plate or bed-piece, a pivoted head mounted thereon adapted to swing laterally and provided with a fixed jaw, and a movable jaw pivoted above said head and overlapping the face of the same and adapted to clamp the material between its face and the face of said fixed jaw, substantially as described.

9. A clamp for leather-stretching machines, comprising, in combination, a pivot or stud adapted to be arranged upon a plate or other substantially horizontal support, a swinging head mounted on said pivot and provided with a fixed jaw, and a movable jaw mounted on said head and having a face overlapping the face of said fixed jaw and adapted to

swing vertically over the same and to clamp the material between its face and the face of said fixed jaw, substantially as described.

10. A clamp for leather-stretching machines, comprising, in combination, a suitable bed-piece or plate, a head pivotally supported thereon and provided with a fixed jaw, a movable jaw mounted on said head and having a face overlapping the face of said fixed jaw, and means for operating said movable jaw to clamp the material between its face and the face of said fixed jaw, substantially as described.

11. A clamp for leather-stretching machines, comprising, in combination, a suit-

able bed-piece or plate, a head pivotally supported thereon and adapted to swing laterally and provided with a fixed jaw having a grooved face, a movable jaw pivoted on said head above said fixed jaw and means for operating said movable jaw to clamp the material between its face and the face of said fixed jaw, substantially as described.

In testimony whereof I have hereunto set my hand this 15th day of June, 1900.

JOHN CALDWELL.

In presence of—

ANNIE L. WHELAN,
P. H. GUNCKEL.