

No. 780,302.

PATENTED JAN. 17, 1905.

J. K. P. PINE.
COLLAR STRETCHER.

APPLICATION FILED MAY 27, 1904.

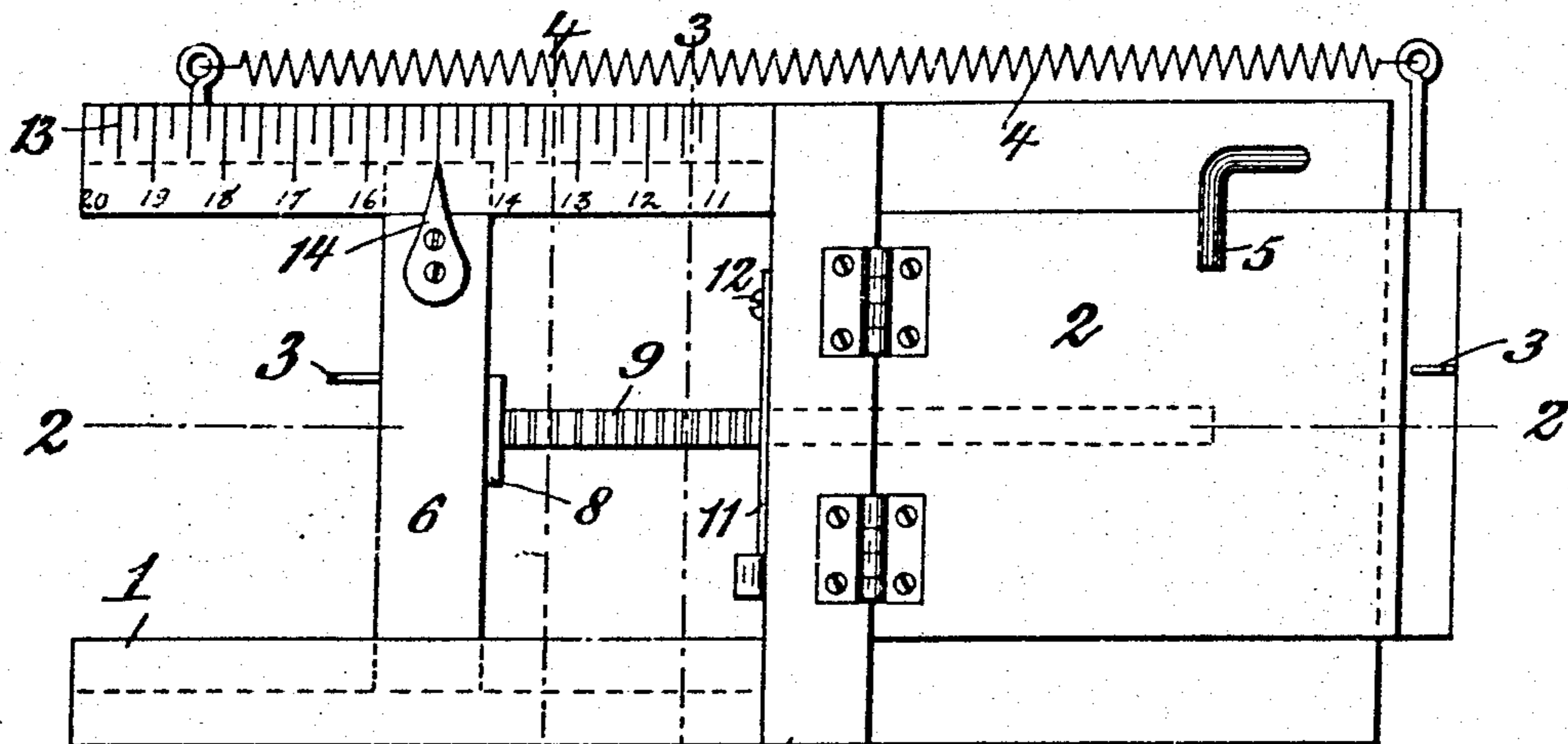


FIG. 1,

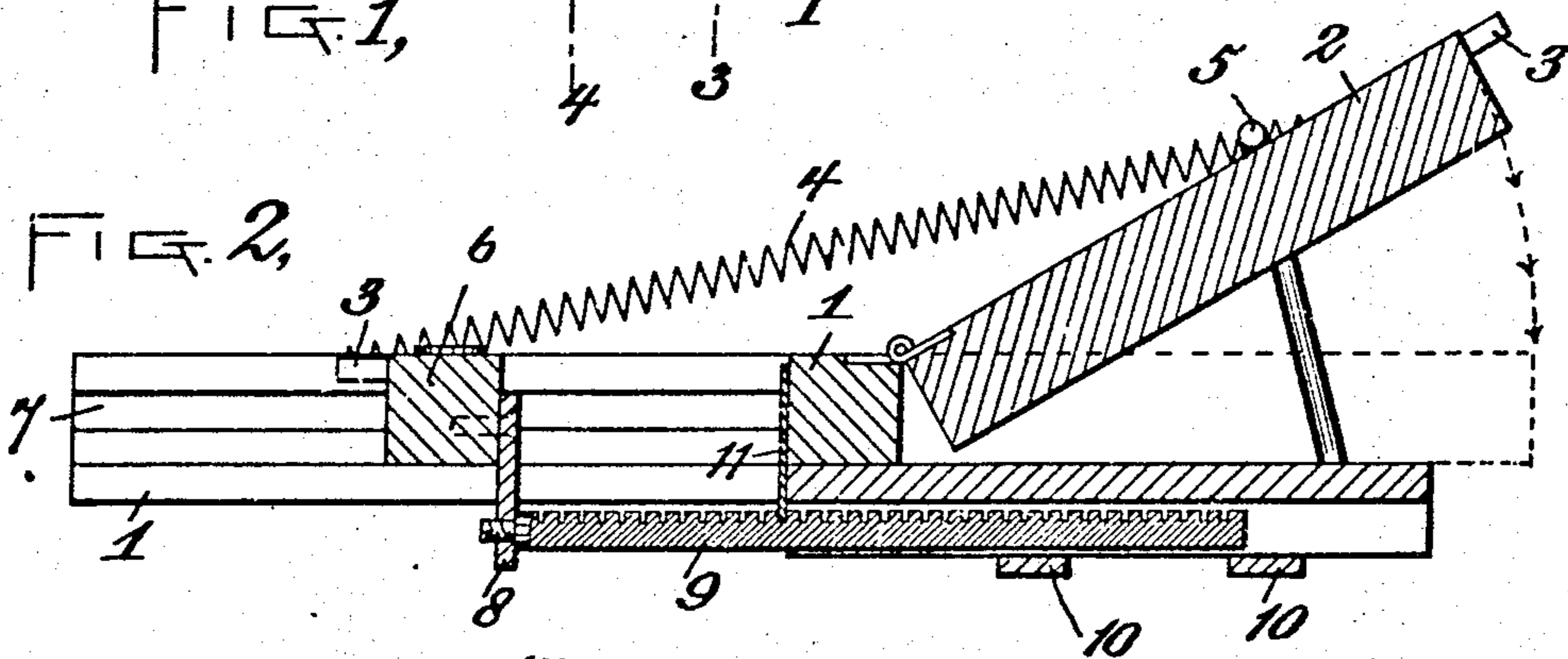


FIG. 2,

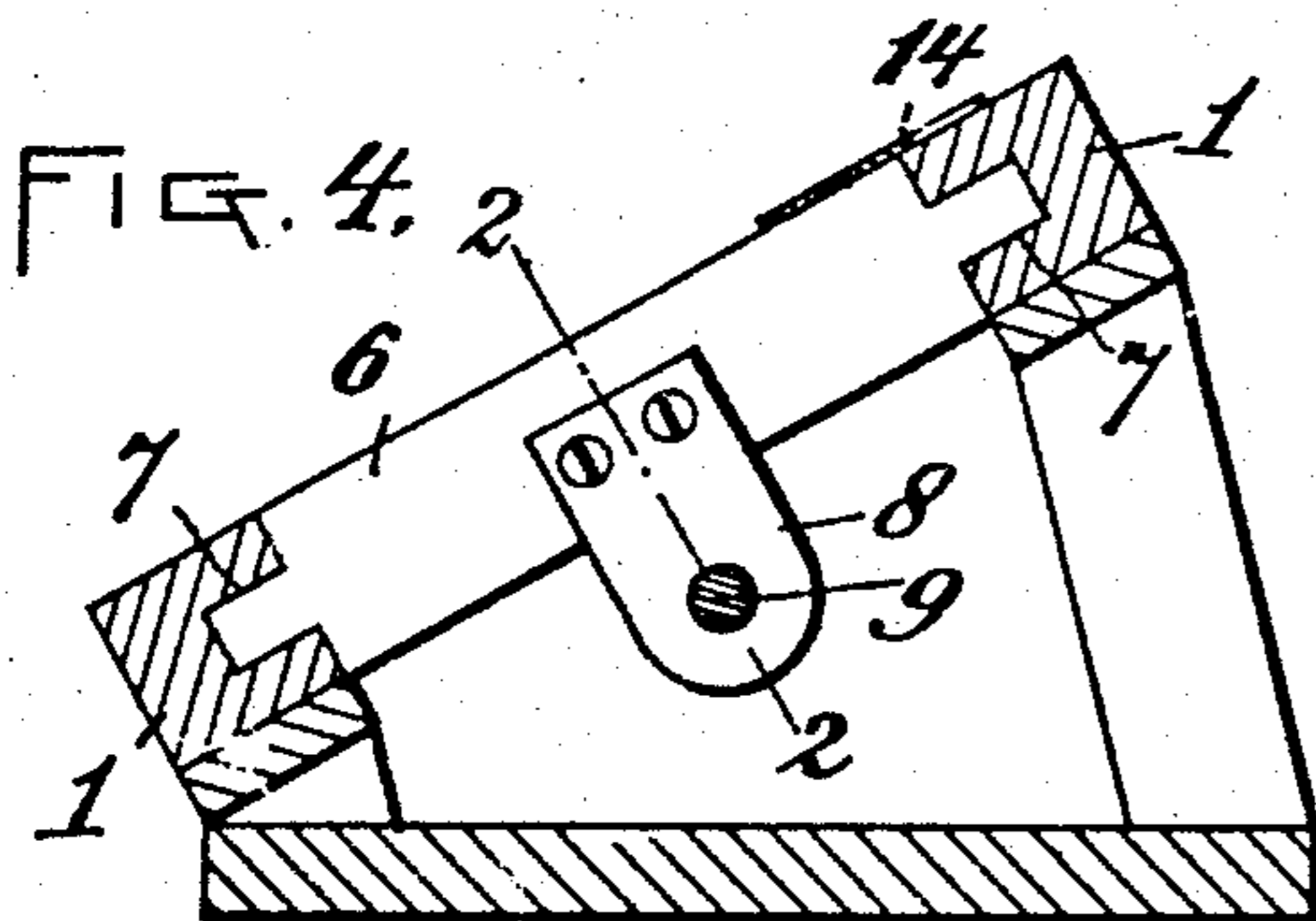
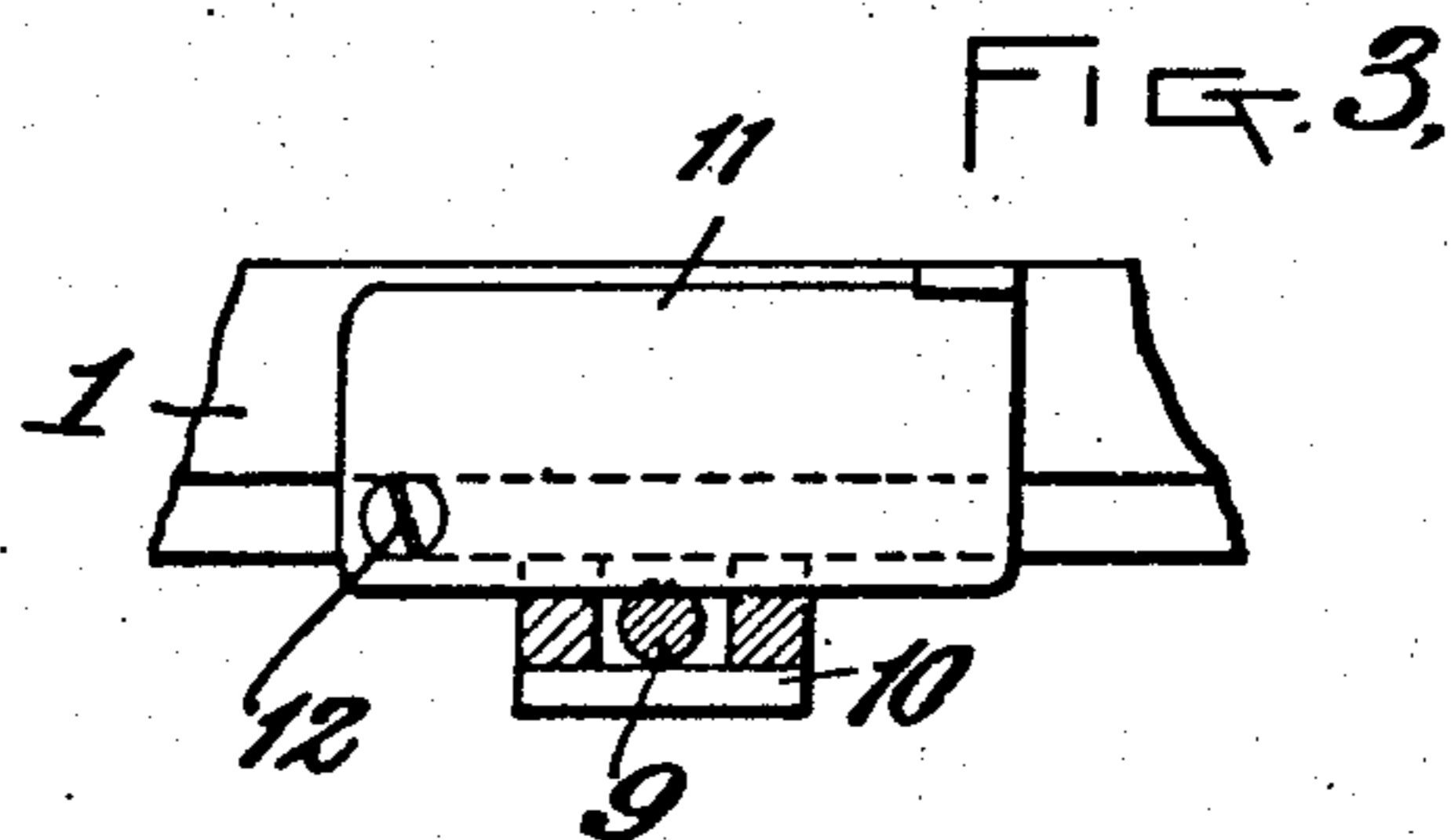


FIG. 3,



WITNESSES

Harry Goss.
H. Crocker

INVENTOR

James K. P. Pine
by his attorneys
Chapin Raymond & Maile

UNITED STATES PATENT OFFICE.

JAMES K. P. PINE, OF TROY, NEW YORK, ASSIGNOR TO UNITED SHIRT AND COLLAR COMPANY, OF TROY, NEW YORK, A CORPORATION OF NEW YORK.

COLLAR-STRETCHER.

SPECIFICATION forming part of Letters Patent No. 780,302, dated January 17, 1905.

Application filed May 27, 1904. Serial No. 210,128.

To all whom it may concern:

Be it known that I, JAMES K. P. PINE, a citizen of the United States of America, and a resident of Troy, county of Rensselaer, State of New York, have invented certain new and useful Improvements in Apparatus for Measuring and Stretching Collars and Like Articles, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to improvements in apparatus for stretching collars and like articles; and it consists in certain improved means whereby collars or similar articles to be stretched may be positively stretched to a predetermined size, the apparatus being arranged to stretch the articles to any predetermined length and retain them in the stretched condition until positively released.

My invention also consists in certain improved means for initially adjusting the apparatus for stretching the articles to various lengths, as may be desired, and in certain improved details of construction and combination of parts, as will presently appear.

Collars and similar articles composed of woven fabric stretch unequally in the laundering process, and it often happens that collars cut to a uniform size will vary after they are washed and starched. For this reason means are employed for stretching such articles before ironing, so that they may be made to correspond with certain uniform predetermined sizes. The employment of an apparatus of this character, in which the amount of stretching depends upon the tension applied by the operator and in which there is no positive means for determining the extent of movement of the stretching elements employed, often results in still further variation, as through carelessness the articles may be easily overstretched or may not be stretched sufficiently, and, again, it is sometimes advisable to hold the articles when stretched in their stretched condition for a few moments, and if such holding depends upon a steady tension applied by an operator it will be readily understood that either a very expert and careful

operator is needed or the results obtained will not be of the best.

The main objects of my invention are to prevent the possibility of overstretching by the carelessness of the operator, to insure the proper amount of stretching, to conveniently retain the article in its stretched condition so long as it may be desired, to provide such adjustments as shall enable the operator to positively stretch the article to any of several predetermined selected lengths, and generally to simplify and improve apparatus of this character.

I will now proceed to describe an apparatus embodying my invention and will then point out the novel features in claims.

In the drawings, Figure 1 is a face view of an apparatus embodying my invention. Fig. 2 is a central longitudinal section therethrough, the plane of section being taken substantially upon the plane of the line 2 2 of Figs. 1 and 4. Fig. 3 is a detail transverse section of certain parts, the plane of section being substantially upon the line 3 3 of Fig. 1. Fig. 4 is a view in transverse section through the apparatus, the plane of section being substantially upon the line 4 4 of Fig. 1.

The machine shown is specially adapted for stretching collars, and in the following specification I will describe it as so employed, it being of course understood that the apparatus may be employed for stretching other articles and is in no way to be considered as limited in its use to collar-stretching.

The apparatus comprises generally a supporting-frame 1 and a member 2, hinged thereto. The frame 1 and hinged member 2 constitute, in effect, toggle elements, and each said element carries a device for engaging and holding one end of an article to be stretched. In the present instance these devices are studs 3, projecting laterally from the members carrying them and arranged to engage the end buttonholes of collars. A spring 4 connects the two said elements, while a stop 5 limits the relative movement thereof. The spring 4 is so located and arranged that when the toggle elements are in their extended position

its tendency will be to retain them in such position, owing to the fact that the line of strain thereof has passed through the pivotal axis of the said elements. A collar to be stretched is set in the apparatus by having one end buttonhole caused to engage one of the studs 3 and the other end buttonhole caused to engage the other stud 3, the apparatus at such time being in the position in which it is shown in full lines in Figs. 1 and 2. When the collar is so positioned, the operator will depress the hinged member 2, so as to straighten out the toggle elements to a position shown in dotted lines in Fig. 2 of the drawings. The collar by this movement will be exactly stretched to a predetermined length and will be retained in such a position for so long a time as the toggle elements are retained in their straightened-out position. The spring 4 will, as above stated, hold the parts in this position until they are released by a slight raising of the hinge member 2 sufficient to carry the spring across the pivotal axis thereof. It will thus be seen that the amount of stretching given to the collar is determined by the apparatus itself and does not depend upon the skill of the operator and, further, that the collar once stretched may be retained in its stretched position without any trouble or without the requirement of any skill. It will also be seen that in operating the device the operator will naturally place one hand against the end of the collar engaging the stud on the frame 1 and the other hand resting upon the hinged member and pressing downward thereon to depress same will naturally rest upon the other end of the collar, so that undue strain upon the buttonholes while the collar is being stretched will be avoided. The stop 5 limits the relative movement of the toggle elements in a direction opposite to the direction of movement during a stretching operation, and hence will prevent an operator from mounting therein a collar of a size too small, the movement of the toggle elements between this stop and the limit of outward movement being the amount of stretch it is possible to give to an article at any time. This will prevent a careless operator from overstretching a small article. Further, by turning the stop slightly a slight adjustment may be made, so that within certain limits the extent of stretching movement permitted may be controlled.

So far as I have at present described this apparatus articles will be stretched to one size only, and it is of course desirable that articles may be stretched to various predetermined sizes. I have therefore provided means whereby the apparatus may be initially adjusted to stretch articles to any one of various predetermined sizes, so that different-size collars, for instance, may all be taken care of in the one apparatus. For this purpose I have mounted the stud 3, supported

upon the framework 1, upon an adjustable bar 6, such bar extending transversely of the apparatus and sliding in ways 7 in the framework 1. The bar 6 is provided with a hanger 8, to which is attached a toothed rack 9, extending longitudinally of the machine and suitably guided at its free end, as by guides 10. I have then provided a pivoted latch 11, pivotally connected to the framework at 12, which latch is arranged to engage the teeth of the rack 9, so as to retain same in any position to which it may be adjusted. Along one portion of the framework I have arranged a scale 13, and a pointer 14, carried by the adjustable bar 6, is arranged to register therewith. In this instance the graduations of scale are arranged to correspond with the different sizes of collars as ordinarily made, and the teeth of the rack 9 are so positioned as to cause the pointer to register with one of the graduations thereof whenever engaged by the latch 11. When, therefore, it is desired to employ an apparatus for the purpose of stretching the collar, the latch 11 may be lifted out of engagement with the teeth of the rack 9 and the adjustable bar 6 adjusted until the pointer 14 corresponds with the graduation corresponding to the size of collar to be operated upon. The latch is then adjusted to engage the rack, so as to lock the adjustable bar against further movement, and the operation of stretching the collar is carried out as above described. Thus it will be seen that means are provided for initially adjusting the apparatus for stretching the article to any predetermined selected length within the limits of the machine and for then operating the machine so adjusted, whereby the article therein will be exactly stretched to the desired length.

It will be obvious that the foregoing is but an embodiment of my invention and that the same is capable of many and varied modifications within the spirit and scope of my invention and, further, that certain parts may be employed in connection with other parts of different construction. Hence I do not desire to be limited only to the precise details of construction and combination of parts herein.

What I claim is—

1. In an apparatus of the class described, the combination with means for initially adjusting the apparatus for stretching an article to any one of a series of predetermined lengths, and indicating means including a graduated scale for indicating the selected length to which the machine is adjusted, of stretching means which operates between fixed limits during a stretching operation, after the machine has been so initially adjusted, whereby the article operated upon will be stretched only to the predetermined selected length.

2. In an apparatus of the class described, the combination with a supporting-frame, a holding device thereon, means for adjusting said holding device with respect to said frame, and

indicating means including a graduated scale for indicating the extent of such adjustment, of a member hinged to said supporting-frame, and another holding device on said hinged member.

3. In an apparatus of the class described, the combination with a supporting-frame having a graduated scale, a member mounted to slide thereon and having a pointer arranged to register with said scale, a holding device carried by said member, a rack-bar carried by said member, and a latch on said frame arranged to engage the teeth of said rack-bar, of a member hinged to said supporting-frame, and a holding device carried by said hinged member.

4. In an apparatus of the class described, the combination with two members, each provided with means for supporting and holding one end of an article to be stretched, said members movable with respect to each other to a limited extent, to effect a stretching operation, of means for adjusting one of said holding means with respect to the member carrying it, and indicating means including a graduated scale for indicating the extent of such adjustment.

5. In an apparatus of the class described, the combination with hinged toggle members comprising stretching means, and each provided with means for supporting and holding one end of an article to be stretched, of means for adjusting one of said holding means with respect to the member carrying it, and indicating means including a graduated scale for indicating the extent of such adjustment.

6. In an apparatus of the class described, the combination with toggle elements, of means carried thereby for supporting the ends of an article to be stretched, the means carried by one of said toggle elements adjustable there-

on, and a spring for holding the toggle members in their extended position.

7. In an apparatus of the class described, the combination with toggle elements, of means carried thereby for supporting the ends of an article to be stretched, the means carried by one of said toggle elements adjustable thereon, and a tension-spring connecting the two toggle elements together, said spring arranged to cross the pivotal axis of the toggle elements, said toggle elements having means for limiting their movements in either direction.

8. In an apparatus of the class described, the combination with hinged toggle members comprising stretching means, and each provided with means for supporting and holding one end of an article to be stretched, of means for adjusting one of said holding means with respect to the member carrying it, and means limiting the movement of said hinged toggle members in a direction opposite to the direction of movement during a stretching operation.

9. In an apparatus of the class described, the combination with hinged toggle members comprising stretching means, and each provided with means for supporting and holding one end of an article to be stretched, of means for adjusting one of said holding means with respect to the member carrying it, and adjustable means limiting the movement of said hinged toggle members in a direction opposite to the direction of movement during a stretching operation.

In witness whereof I have hereunto set my hand this 23d day of May, 1904.

JAMES K. P. PINE.

Witnesses:

E. O. HOUSE,
H. L. BRYANT.