

L. KRUG.
ATTACHMENT HOLDER FOR SEWING MACHINES.
APPLICATION FILED JULY 5, 1906.

960,345.

Patented June 7, 1910.

2 SHEETS—SHEET 1.

Fig 1.

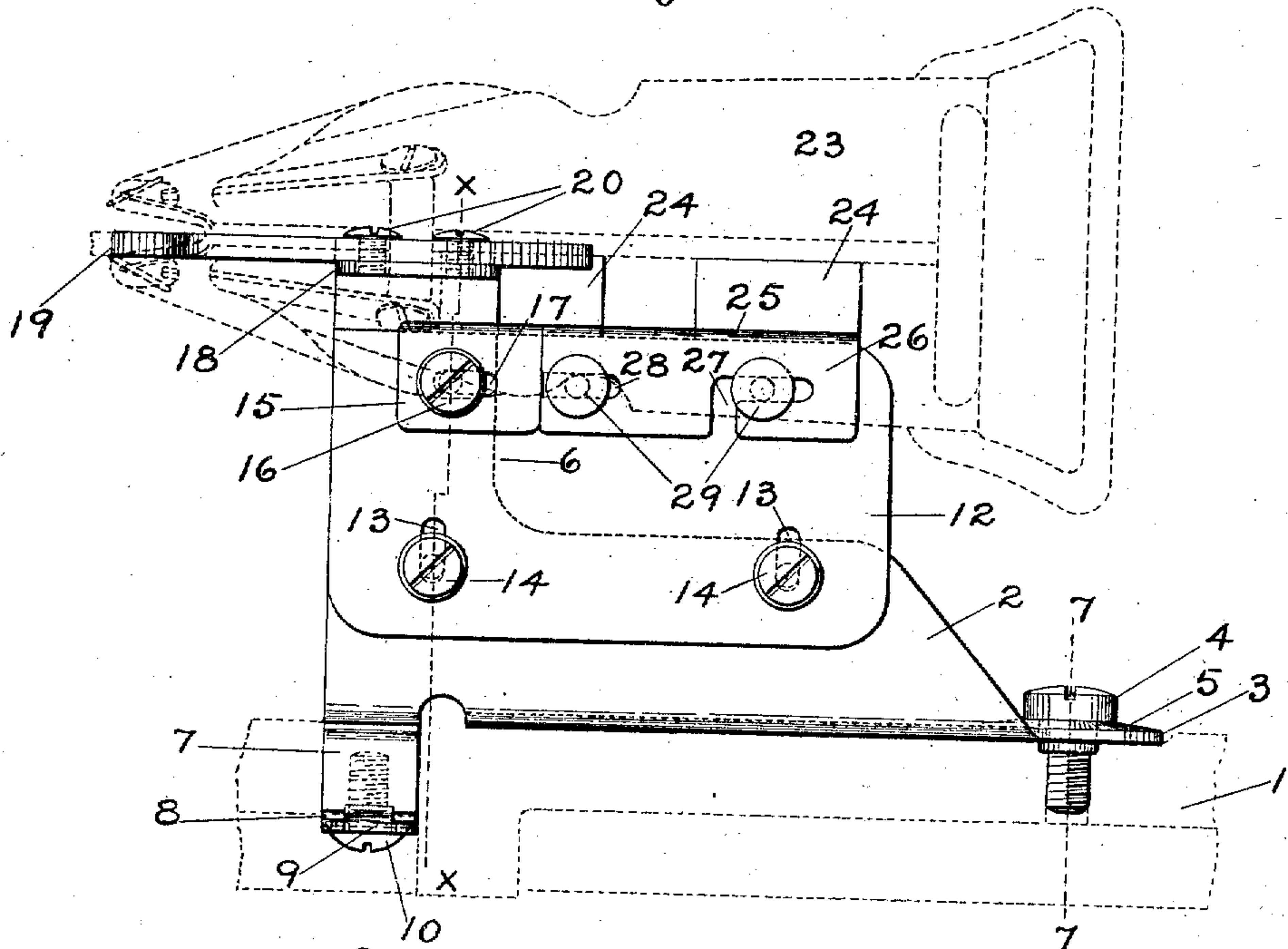


Fig 2.

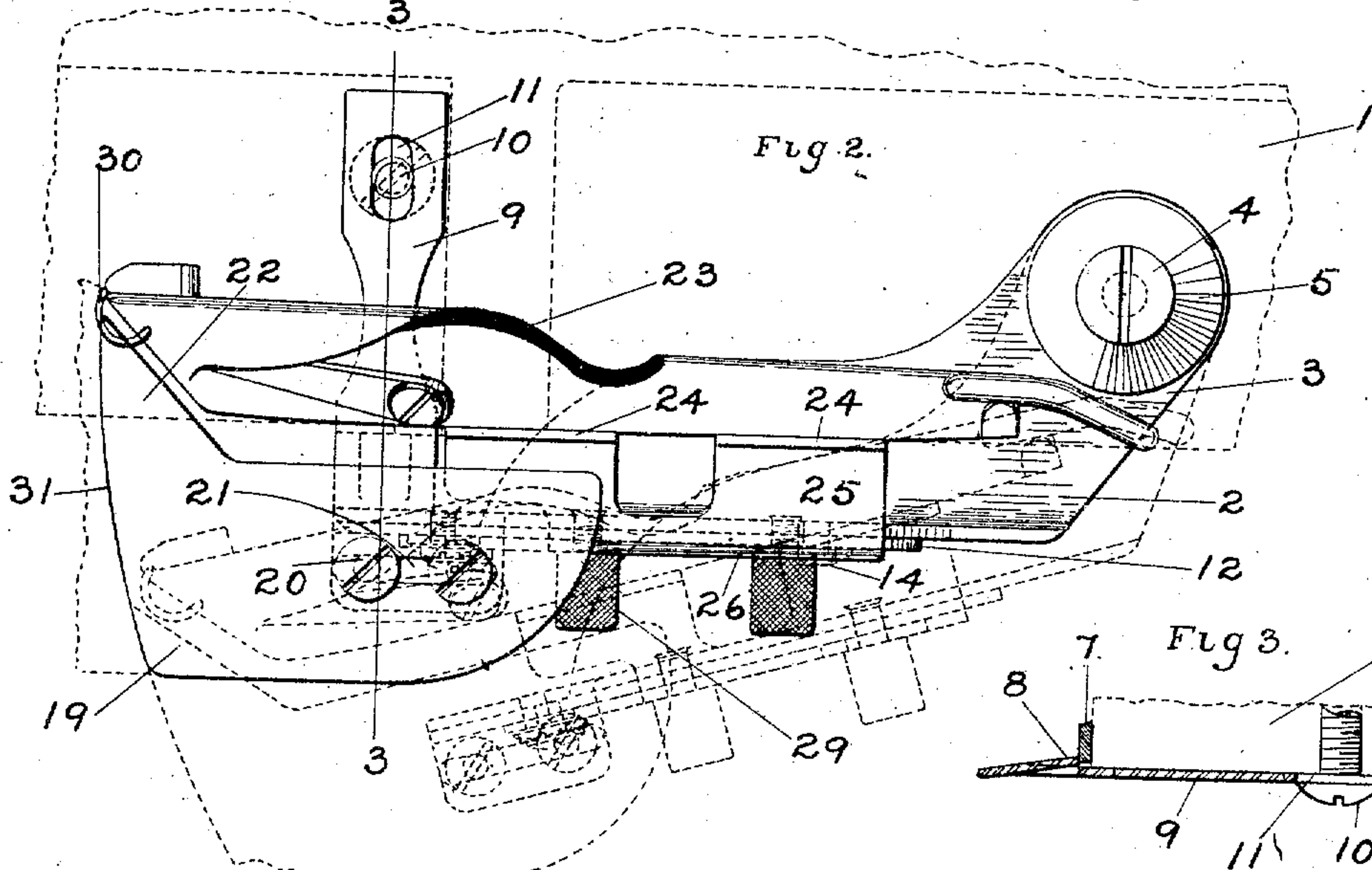
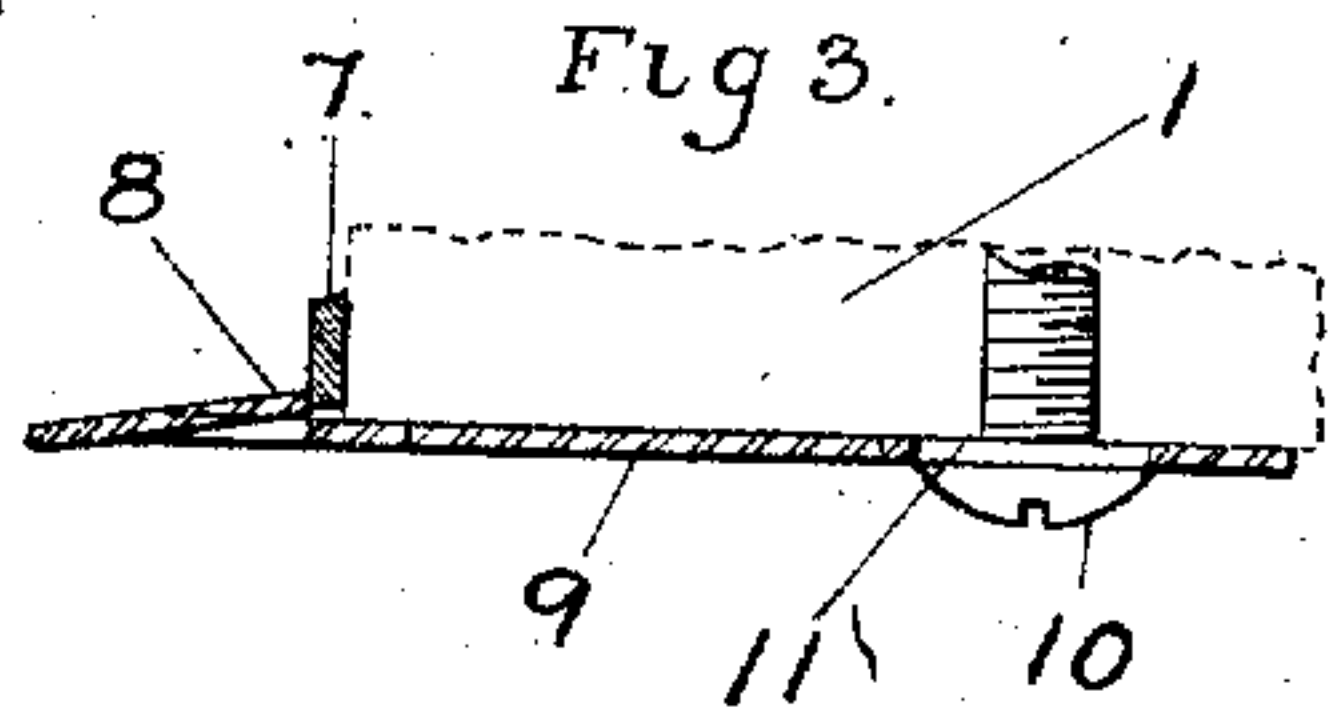


Fig 3.



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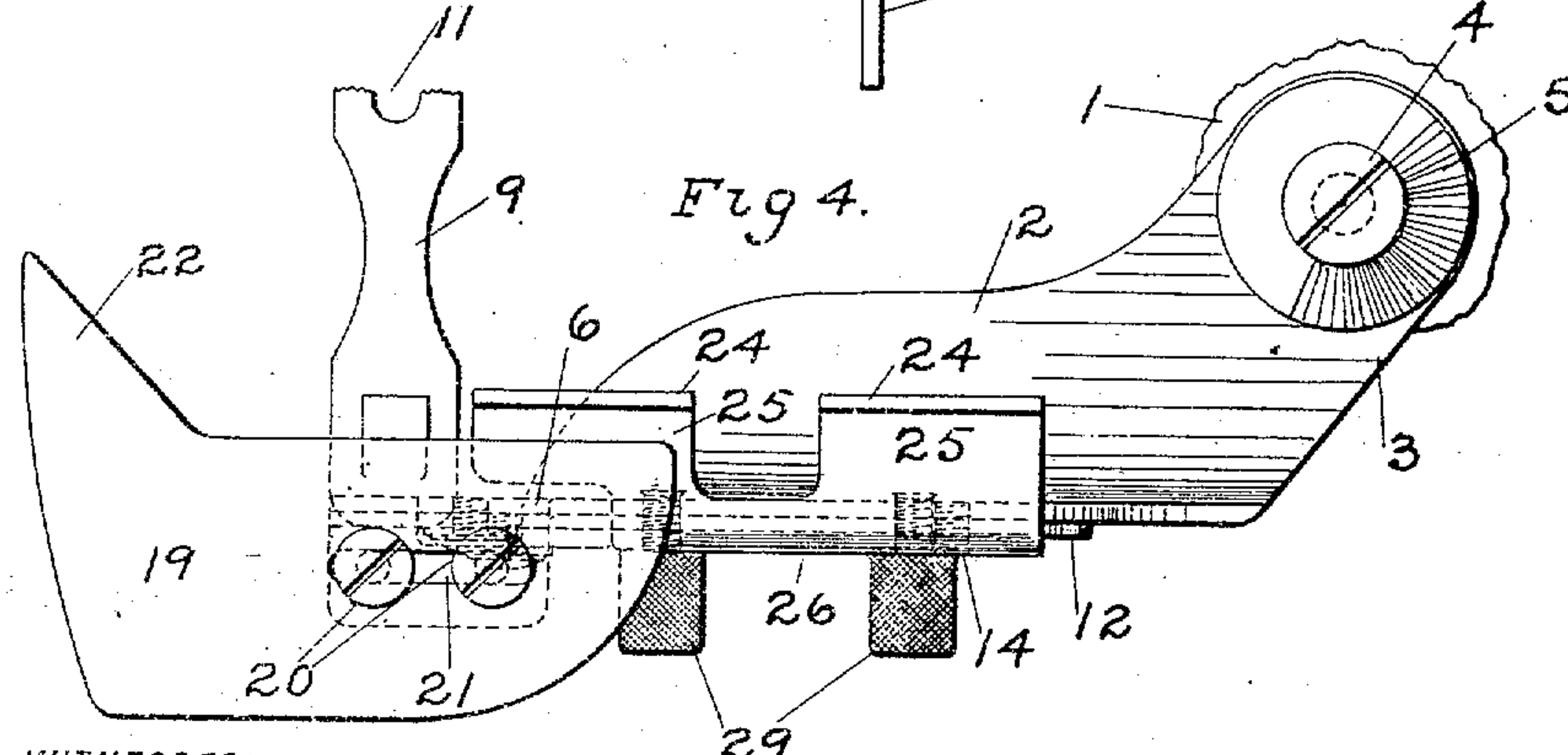
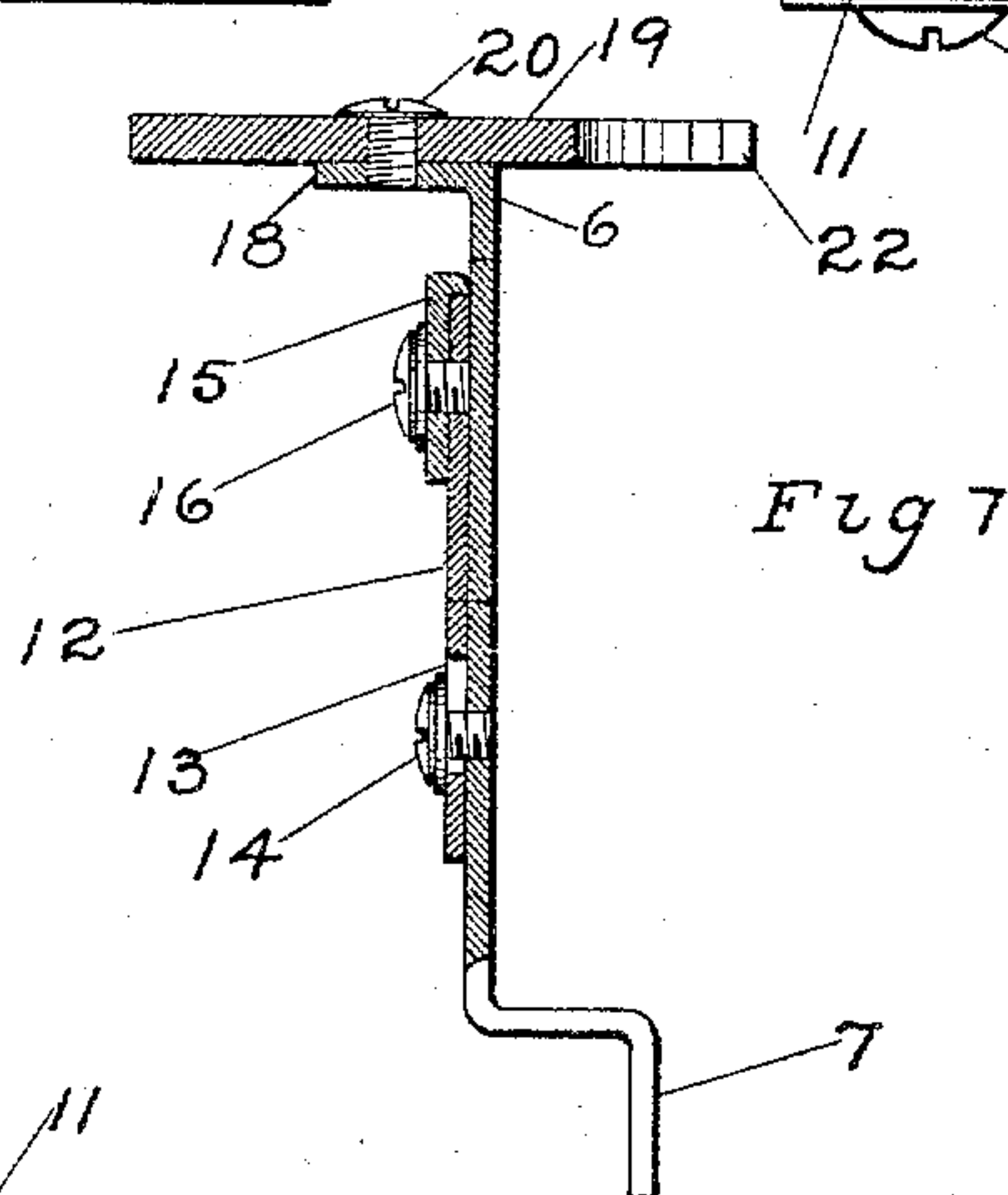
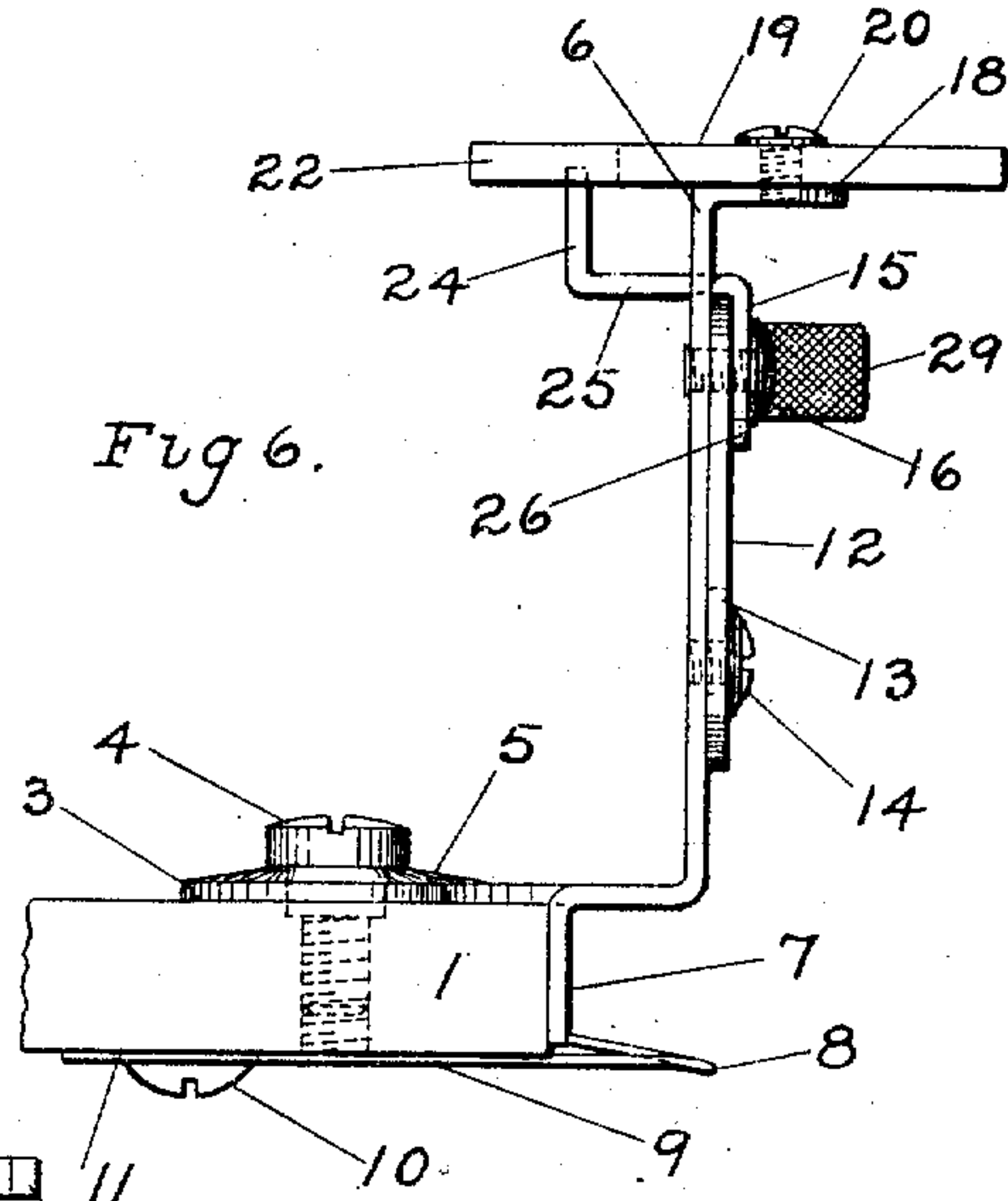
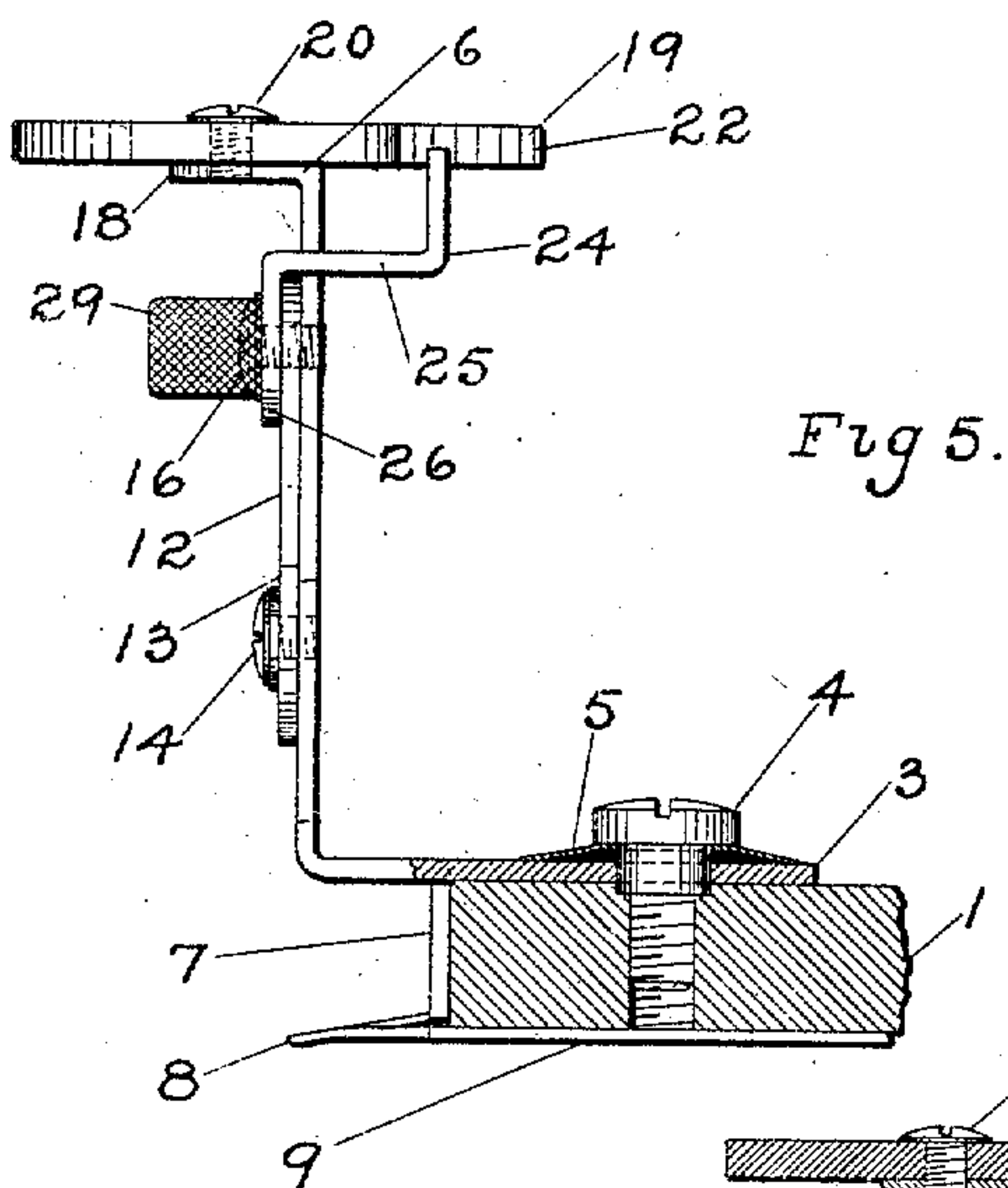
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

LOUIS KRUG, OF NYACK, NEW YORK, ASSIGNOR TO METROPOLITAN SEWING MACHINE COMPANY, OF NYACK, NEW YORK, A CORPORATION OF NEW YORK.

ATTACHMENT-HOLDER FOR SEWING-MACHINES.

960,345.

Specification of Letters Patent.

Patented June 7, 1910.

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To all whom it may concern:

Be it known that I, LOUIS KRUG, a citizen of the United States, residing at Nyack, county of Rockland, and State of New York, have invented a new and useful Improvement in Attachment-Holders for Sewing-Machines, of which the following is a specification.

This invention relates to means by which attachments of various kinds may be applied to, and properly held in position on, a sewing machine, and has particular reference to holders for folding, binding and hemming attachments.

Among the objects of this invention may be noted the following: to provide an attachment holder by means of which a folder, or other attachment for sewing machines, may be positioned accurately relatively to the stitching position or the path of reciprocation of the needle; to provide an attachment holder by means of which varying sizes of folders, or other attachments for sewing machines, may be interchangeably used, and by means of which, irrespective of the size of the attachment to be used in combination or connection with the stitch-forming mechanism, the varying sizes of said attachments can be always compensated for and positioned alike and properly in the machine, that is to say, if it is desired to substitute, for example, a folder $\frac{5}{8}$ of an inch for one $\frac{3}{4}$ of an inch, the difference in size will not prevent the absolutely accurate positioning of the same with reference to the stitching position or path of reciprocation of the needle; to provide means by which the attachment may be swung into and out of position on the machine, whereby the attachment holder may be under tension when swung into and out of position, so as to prevent rattling of the attachment during the running of the machine, and also to enable the attachment to be held where desired when thrown out of the operative position; to provide means by which the vertical position of the attachment may be regulated; to provide means by which the attachment may be quickly removed from the machine, and replaced without removing the binding or holding screws or any part of the holder; to provide means whereby the attachment and the holder therefor may be adapted to any form of sewing machine, that is to say, assuming that in different machines there is a difference in

the distance between the surface of the cloth-plate and the bed of the machine to which the holder is attached, it is the object of this branch of the invention to enable the holder to be adjusted so as to place the base of the attachment in the proper plane on and relatively to, the cloth-plate of the machine irrespective of the distance between the surface of the cloth-plate and the bed of the machine; to provide an adjustable auxiliary throat-plate, or work-support, by means of which the opening in the throat or cloth-plate may be closed or completely covered under varying conditions or sizes of machines, or attachments, or holders; to provide an adjustable work-rest for the support of the work in moving up to the stitching position, in order to prevent the weight of the work from creating a drag at the stitching point and to enable the work to be accurately and properly guided to the stitching position; to provide means for locking the holder in operative position; to provide means whereby the locking device may be adjusted so as to compensate for different thicknesses of metal of which the holder may be made, and also to produce the necessary pressure of the locking device on the holder to prevent the latter from rattling or vibrating while the machine is in operation; to provide means whereby the position of the attachments used may be varied according to the requirements of the work which is to be accomplished; to provide means whereby the attachment may be adjusted angularly relatively to the cloth-plate for various purposes without affecting or changing the position of that portion of the holder which coöperates with the throat-plate of the machine; and, generally speaking, to provide an attachment holder, all the parts of which are adjustable relatively to each other to bring about proper coöperation of the attachment with the stitch-forming mechanism, proper relation of the attachment with the cloth-plate, proper adjustments of the auxiliary throat-plate relatively to the cloth-plate of the machine or its throat-plate, and so as to render it possible to provide an attachment holder of universal application to sewing machines and for the support of all kinds of attachments and varying sizes of attachments; to provide means whereby the folder, for instance, may be adjusted on the holder so as to cause the

top of the delivery end of the folder to be positioned more or less on the right or left of the path of reciprocation of the needle and produce a correspondingly opposite positioning of the lower portion of the delivery end of the folder relatively to the path of reciprocation of the needle, this being for the purpose of producing the line of stitching equi-distant from the hemmed edges of the folded material.

In the drawings forming part of this description: Figure 1 is a front elevation of the attachment holder, showing the attachment in dotted lines, which, in this instance, is a folder for collaret machines, a portion of the bed-plate of the machine to which the attachment is applied being also shown in dotted outline; Fig. 2 is a top-plan view of the attachment holder, showing also a portion of the bed-plate in dotted outline, and portraying the folder of Fig. 1 in relative position, and also showing, in dotted line position, the attachment-holder and the folder carried thereby thrown back out of operative position; Fig. 3 is a detail sectional view showing the manner in which the attachment holder is held in operative position, the section being taken on the line 3—3 of Fig. 2; Fig. 4 is a top-plan view of the holder; Fig. 5 is a right-hand end elevation of the holder, showing the bed of the machine, the base-plate of the holder and the spring washer in section; Fig. 6 is a left-hand end elevation of the holder; and Fig. 7 is a section on the line $x-x$ of Fig. 1.

Primarily, it should be understood that while the attachment holder is applicable practically universally to sewing machines and is capable of supporting all kinds and types of attachments in proper position relatively to the stitch-forming and feeding mechanisms of a sewing machine, for the purposes of illustration I have portrayed my invention in connection with a collaret folder of the well-known collaret machine made by the Metropolitan Sewing Machine Company. This folder is arranged so as to have a portion of its scrolls or hem-turning members above the cloth-plate of the machine and a portion below the cloth-plate of the machine. This arrangement of the folder necessitates cutting out the cloth-plate of the machine in advance of the stitch-forming mechanism and close to the feeding mechanism. Hence the employment of the supplemental throat or work-plate will be readily understood; but, it will also be understood that with certain kinds or types of attachments the said supplemental throat-plate or work-support may not be necessary.

Referring to the drawings, the numeral 1 indicates the bed-plate, a portion of the same being shown in dotted outline.

The numeral 2 indicates the base or main-plate of the holder, said plate having the

extension 3 through which the holding-screw 4 is passed, which latter is tapped into the bed-plate 1. Under the head of the screw 4 a spring-washer 5 is placed, the head of the screw pressing the said washer against the extension 3 of the main-plate to create the necessary amount of friction thereon to prevent the holder from swinging too freely on the screw as a pivot. The plate 2 is extended vertically relatively to the bed-plate 1 so as to form the extension 6, said plate also being provided with the depending lip 7, which co-operates with the spring-catch 8 formed on the catch-bar 9, secured to the bed-plate of the machine by means of the screw 10 passing through an elongated slot 11 in said catch-bar 9, and tapped into the bottom of the bed-plate 1,—see particularly Figs. 1 and 3. The spring-catch 8 is formed by cutting out and striking up a piece of the metal of the catch-bar 9, so that, as the lip 7 of the attachment-holder passes over the same, said spring-catch will be depressed and, after the said lip passes the same, will spring up into place, as shown in Figs. 3, 5 and 6, so as to firmly hold the lip between it and the edge of the bed-plate 1. Obviously, the catch-bar can be set or adjusted longitudinally, whereby to provide for varying thicknesses of the lip 7 of the attachment-holder, and thus accommodate any variations which may be brought about in manufacturing.

From the construction just described, it will be clear that the main-plate 2 of the attachment-holder may be swung upon the pivot-screw 4 with considerable freedom, the washer 5 under the head of the screw, however, preventing a too free swinging movement of said main-plate 2. When the main-plate is in the proper position, the spring-catch 8 will hold the same from any possibility of displacement, except by depressing the said catch, which can be readily accomplished with either the fingers or a suitable instrument.

The main-plate 2 supports a holding-plate 12, provided with elongated slots 13, extending transversely thereof, whereby the same may be adjusted vertically upon the main-plate 2, screws 14 being passed through said slots and tapped into the holding-plate, as clearly shown in Figs. 1 and 2, washers, if desired, being placed under the heads of said screws. In this manner the holding-plate 12 may be vertically adjusted upon the base-plate 2, in order to enable the attachment and other parts held thereby to be located in the proper horizontal plane with reference to the cloth-plate or work-plate of the machine. A stop-plate 15 is secured to the upper edge of the holding-plate 12 by means of the screw 16 passed through the elongated slot 17, Fig. 1, thereof and tapped into the holding-plate. By means of the said elongated slot 17, the stop-plate 15

is rendered adjustable on the holding-plate, the adjustment being in a horizontal plane and for the purpose of limiting the forward movement, or movement toward the stitch-forming mechanism, of the attachment or folder which is to be properly located in the machine. Just above the stop-plate 15, the vertical extension 6 of the main-plate 2 is overturned into a horizontal support 18, the latter carrying, and supporting in proper position, the supplemental work-support 19, the latter being held upon the said support 18 by means of the screws 20, which are passed through the elongated slot 21 in said work-support and tapped into the support 18. The elongated slot permits the adjustment of the said work-support 19 on the support 18, whereby the former may be positioned properly relatively to the throat-plate of the machine, or work-support of the latter. Viewing Fig. 2, it will be seen that the supplemental work-support 19 is provided with the substantially V-shaped extension 22, pointing, generally speaking, toward the rear of the machine, the particular form shown being given to the said work-support for the purpose of causing the same to conform to the outline of the forward or delivery end of the folder with which, in this particular instance, it coöperates as a support for the main body of the work to which the binding or strip passing through the folder is applied. Obviously, the form of this supplemental work-support 19 may and will be changed according to the character of the work being performed, or the shape or form of the attachment being used in any particular instance. The real function of this supplemental work-support is to form an extension of the throat-plate or cloth-plate of the machine in advance of the stitching position and in advance of the attachment being used in the machine, as will be readily understood upon viewing Fig. 1.

As heretofore stated, the drawings show a folding-device, such as is now used on the well-known Metropolitan collaret machines and which are employed for the attachment of collarets to French balbriggan undershirts. The form of this folder varies according to the particular class of work being done and, in consequence, its size and shape may be, from time to time, materially changed or modified. This is also true of binders, hemmers and other forms of attachments. Therefore, it is necessary that means be provided for controlling the position of the attachment with reference to the stitching-point, the path of reciprocation of the needle, or the line or direction of feed. Hence, in the form of my invention now shown, the said folder, which is indicated by 23, has secured thereto an attachment-plate consisting of the vertical portions 24, which may be soldered or otherwise secured

to the attachment, said portions being extended into the horizontal plate 25, which, at its forward edge, is bent down to provide the vertical attaching part 26. At one end said attaching part is provided with the angular slot 27 open at its lower end, the other end of the attaching part being provided with the open-end, horizontal slot 28. Screws 29 are tapped into the holding-plate 12 and their shanks operate within the slots 27 and 28, it being clear, upon viewing Fig. 1, that the attachment and its plate may be adjusted longitudinally upon said screws by simply turning the same to permit freedom of movement of the part 26 on the shanks of said screws. A predetermined position of the attachment in the machine is obtained by adjusting the stop-plate 15, against the end of which the holding part 26 is caused to abut, whereupon the screws 29 will be set upon the holding part, whereby the attachment will be firmly secured in position.

When it is desired to remove the said attachment, the screws 29 will be properly turned, the attachment-plate moved rearwardly until the shank of one of the screws 29 engage the vertical wall of the slot 27. The other screw 29, at this time, will have passed from the open end of the slot 28, thus enabling the attachment-plate to be lifted clear of the holding-screws 29 through the medium of the open end of the vertical portion of the slot 27. In order that the screws 29 may be easily manipulated, their heads are extended as shown in Figs. 2, 4, 5 and 6 and their surfaces knurled, so as to afford a firm grip thereon. To prevent these screws being removed or lost, their ends are turned or spread as shown in Figs. 2, 4 and 6, producing heads which will engage the back of the holding-plate 12.

From the above description, it will be seen that the following movements and adjustments of the various parts are possible: the main-plate 2 pivots or swings upon the screw 4, so as to throw the attachment 23 and the supplemental work-support 19 into and out of operative position, when it is deemed necessary for any purpose; the base-plate 2 is held in proper position by means of the spring-catch 8, and its absolute freedom of movement is retarded by means of the spring-washer 5; the holding-plate 12 is vertically adjustable upon the main-plate 2 through the medium of the slots 13 and screws 14, this adjustment being for the purpose of getting the attachment 23 and work-support 19 into the proper relative position and said attachment on the proper level with reference to the cloth or work-plate of the machine, this being found necessary when the attachment-holder is applied to different machines, or when different sizes of attachments are employed, or it is necessary to direct the material passing through the attach-

ment in a proper manner; the attachment, as a whole, viz., the folder 23, is adjustable longitudinally, or toward and from the stitching position or path of reciprocation of the needle, through the medium of the slots 27 and 28, and the holding-screws 29, the forward position of said attachment being controlled and regulated by means of the adjustable stop 15, and the entire attachment may be removed from the holding-plate 12 by loosening the screws 29 and manipulating the same as above set forth; the supplemental work-support 19 is adjustable on its support 18 of the main-plate 2 through the medium of the slot 21 and screws 20, said adjustment being longitudinally of the work-plate of the machine, which latter will ordinarily be cut away along the dotted line 30, Fig. 2, so as to conform to and correspond with the forward end 31 of the supplemental work-support, the shape and adjustment of the latter being for the purpose of closing up any gap, slot or opening which may occur between the said work-support and the work or cloth-plate of the machine, when the attachment is applied to any given machine, thus preventing the cloth or work from being caught in the cloth-plate of the machine, or snagged in any other manner in passing over the same and the supplemental work-support 19; as previously noted, the catch-bar 9 is adjustable so as to make the catch 8 effective upon varying sizes of attachment-holders which may be used, or in the event the depending lip 7 of said holder may become bent from any cause, and the attachment herein shown as a folder may be adjusted so that the upper and lower portions of the delivery end thereof may be arranged more or less on one side or the other of the central line of feed or path of reciprocation of the needle, in order to regulate and control the distance of the line of stitching from the hem or infold of the collar which is being applied to the neck of the body-garment, this result being accomplished by loosening the attachment-plate upon the holding-plate 12, properly moving the stop-plate 15 and shifting the attachment rearwardly or forwardly to the desired extent, as the case may be. The folder may also be so adjusted as to cause the line of stitching to run closer to one edge of the binding than to the other edge; that is to say, by making the proper adjustment of the stop-plate 15, and then shifting the attachment rearwardly until the rear screw 29 reaches the vertical portion of the angular slot 27, the entire attachment being moved vertically around the forward screw 29 as a fulcrum, this producing the result of making the line of stitching in the hem of the collar run closer to the under edge of the binding than to the upper edge, since the under edge is moved to the right and the upper edge to the left of the

stitching position. These functions can also be accomplished with reference to hemmers and binders of other forms.

From the above description, it will be understood that the following are among the advantages of my invention: the attachment-holder can be applied to practically any machine now on the market with only such changes or additions to the said machine as may be necessary to give the attachment-holder a position or working point on the bed-plate; the attachment-holder is made up of adjustable parts in such manner as to enable the attachment carried thereby to be adjusted and located in the proper position with reference to the path of reciprocation of the needle and for the proper direction of the material through the attachment for any given class of work; should it be desirable, at any time during the operation of the machine, to swing the attachment out of position, the operation can be accomplished by merely depressing the spring-catch 8 and swinging the base-plate upon its pivot-screw 4, and the spring-washer 5 will maintain the holder in its operative position with the requisite amount of friction; the attachment, whatever it may be, can be readily adapted to the holder by merely applying thereto an attachment-plate of the simple form shown in the drawings, it being a matter of only a few minutes of time of a skilled mechanic to make such a plate and apply it to the attachment, in order to adapt the latter to my holder; when the attachment has been supplied with an attaching-plate, as shown and described, the same may be readily applied to the holder and adjusted to the proper position and, when so adjusted, maintained throughout the operation by reason of the binding-screws 29 and the adjustable stop-plate 15; any form of supplemental work-support can be made and applied to the attachment-holder for any given purpose or operation, and when so made can be readily applied to the holder by merely providing a longitudinal slot therein, such as 21, through which will be passed the binding-screws 20, and when applied to the holder may be adjusted to the proper position relatively to the ordinary work-plate and throat-plate of the machine, as previously described so that the binding may be properly guided, and the edges thereof hemmed, and the line of stitches securing the hem may be disposed at any distance desired, according to the adjustment of the attachment, from the hemmed edge of the said binding.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. An attachment-holder having, in combination therewith, a work-guiding attachment; a work-support cooperating with said

attachment; means for supporting said work-support on said attachment-holder; and means whereby the said attachment may be adjusted upon the attachment-holder
5 relative to said support, whereby the work is supported as it passes to the attachment and the line of stitching is caused to pass through two superposed parts of the work nearer to the edge of one of said parts than
10 to the edge of the other.

2. In combination, an attachment-holder comprising a main-plate; means for pivotally securing the main-plate to a machine in a plane parallel with the work-plate of
15 the latter; a holding-plate; means for adjustably securing the holding-plate to the main-plate; an attachment secured to the holding-plate; means for adjusting the attachment upon the holding-plate; and an
20 adjustable stop cooperating with the attachment, whereby to determine and maintain its position.

3. In combination, an attachment holder comprising a main-plate; a suitable attachment
25 and means for supporting the latter horizontally on the said main-plate; a work-support and means for securing said sup-

port directly to the main-plate in front of said attachment; and means for relatively
adjusting the said work-support and at- 30
tachment whereby the same may be brought into proper operative relation.

4. In combination with an attachment-holding plate having a depending lip, a catch-bar having a spring-catch cooperating
35 with said lip, and means for adjusting said catch-bar at an angle to said lip.

5. In combination with the bed-plate of a machine, an attachment-holding plate pivotally mounted thereon and having a catch-
40 lip extending across the edge of said bed-plate, a catch-bar secured to said bed-plate and having a spring-catch for cooperation with said lip, and means for adjusting said
45 bar on the bed-plate relatively to said lip.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses, this nineteenth day of June 1906.

LOUIS KRUG.

Witnesses:

WM. T. LINTNER,
W. J. REED.