

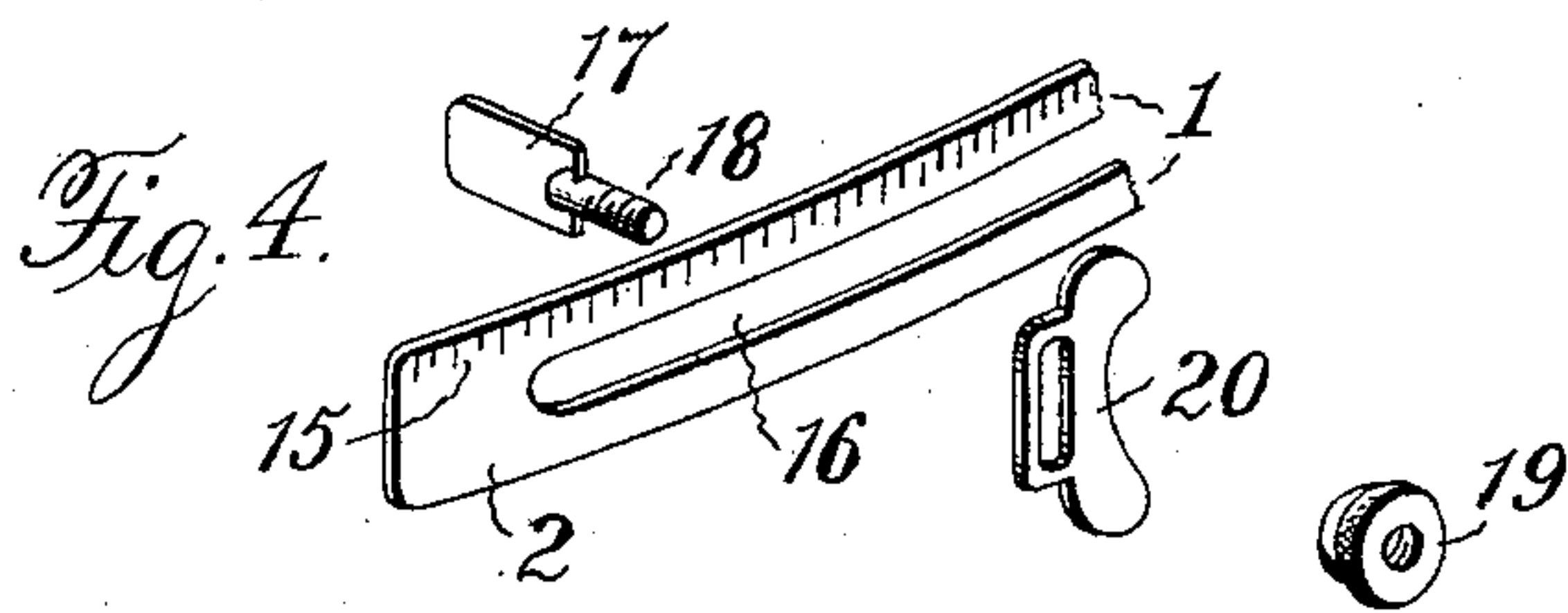
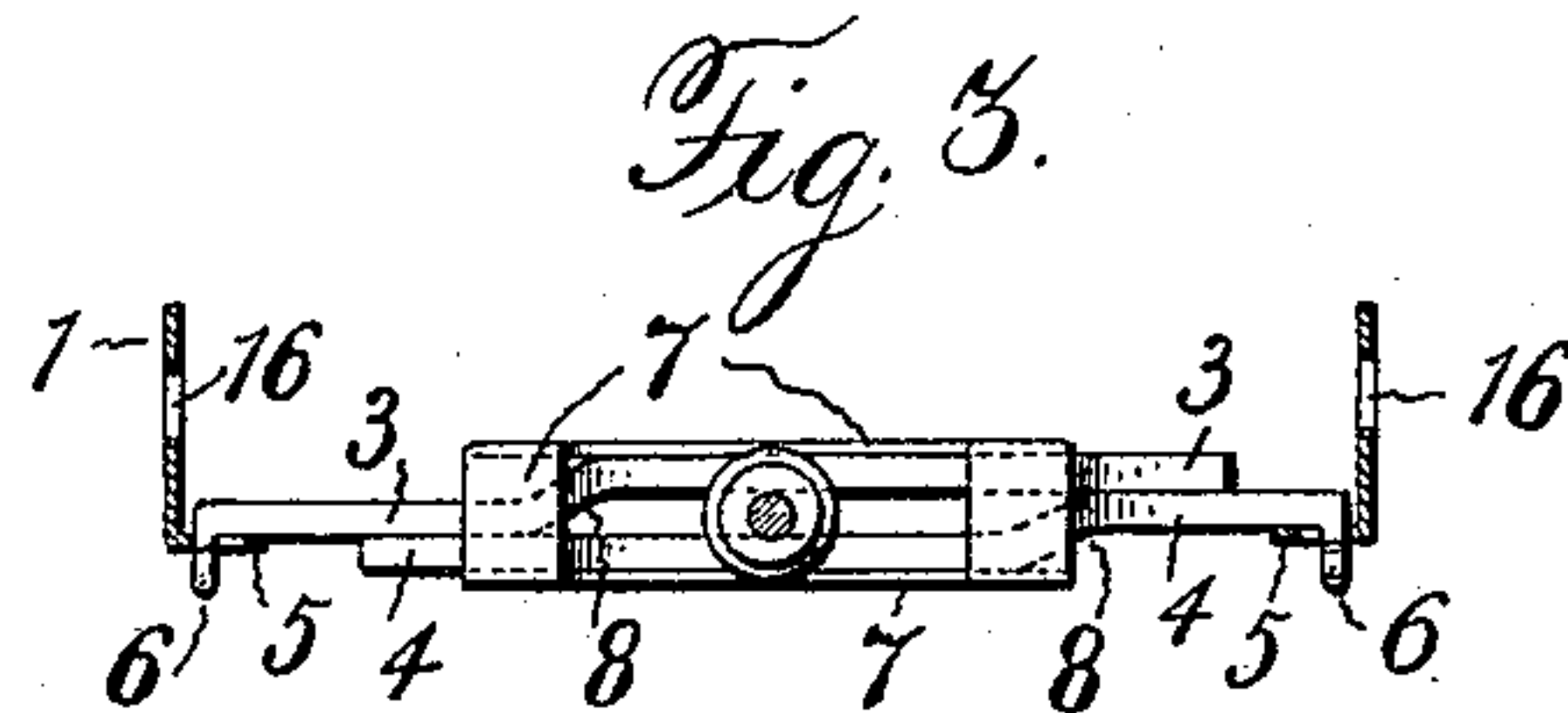
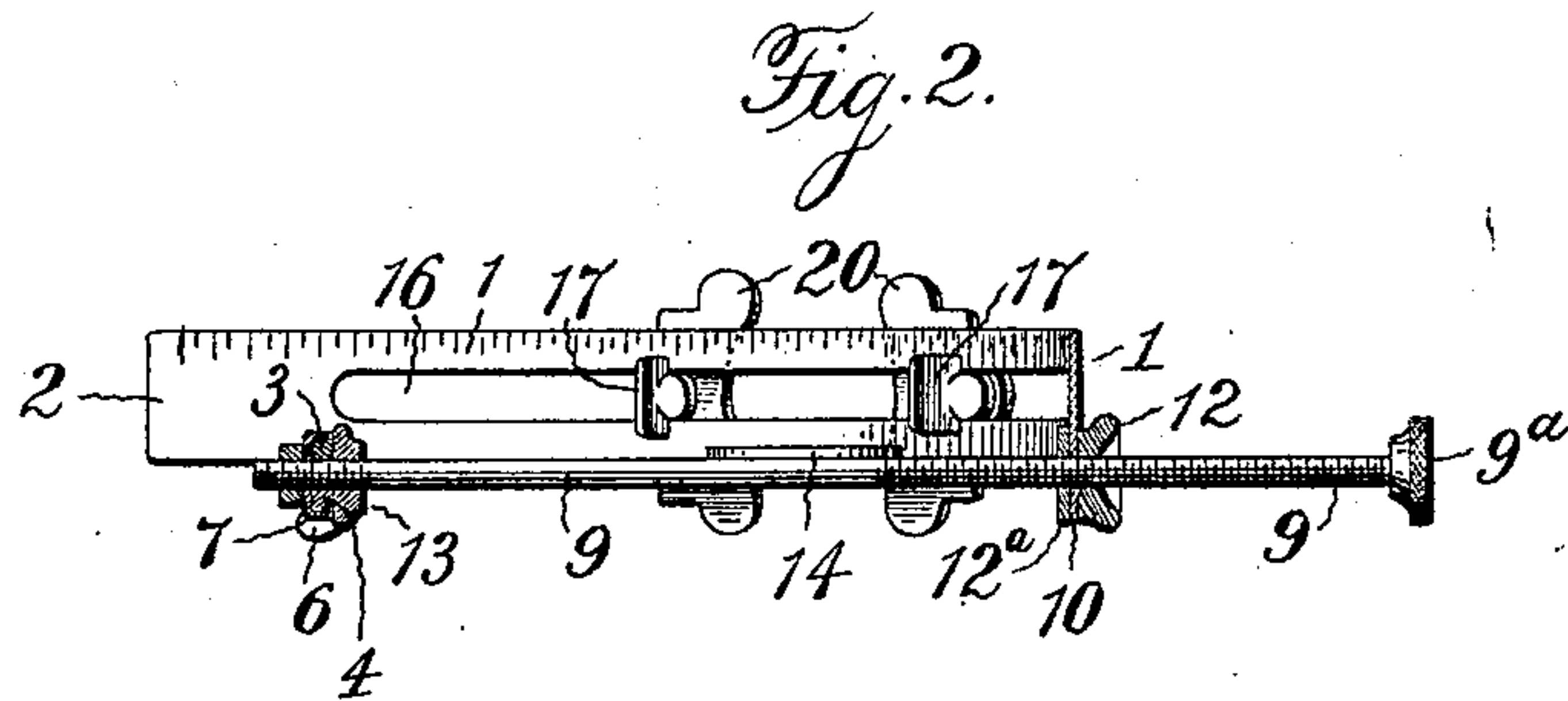
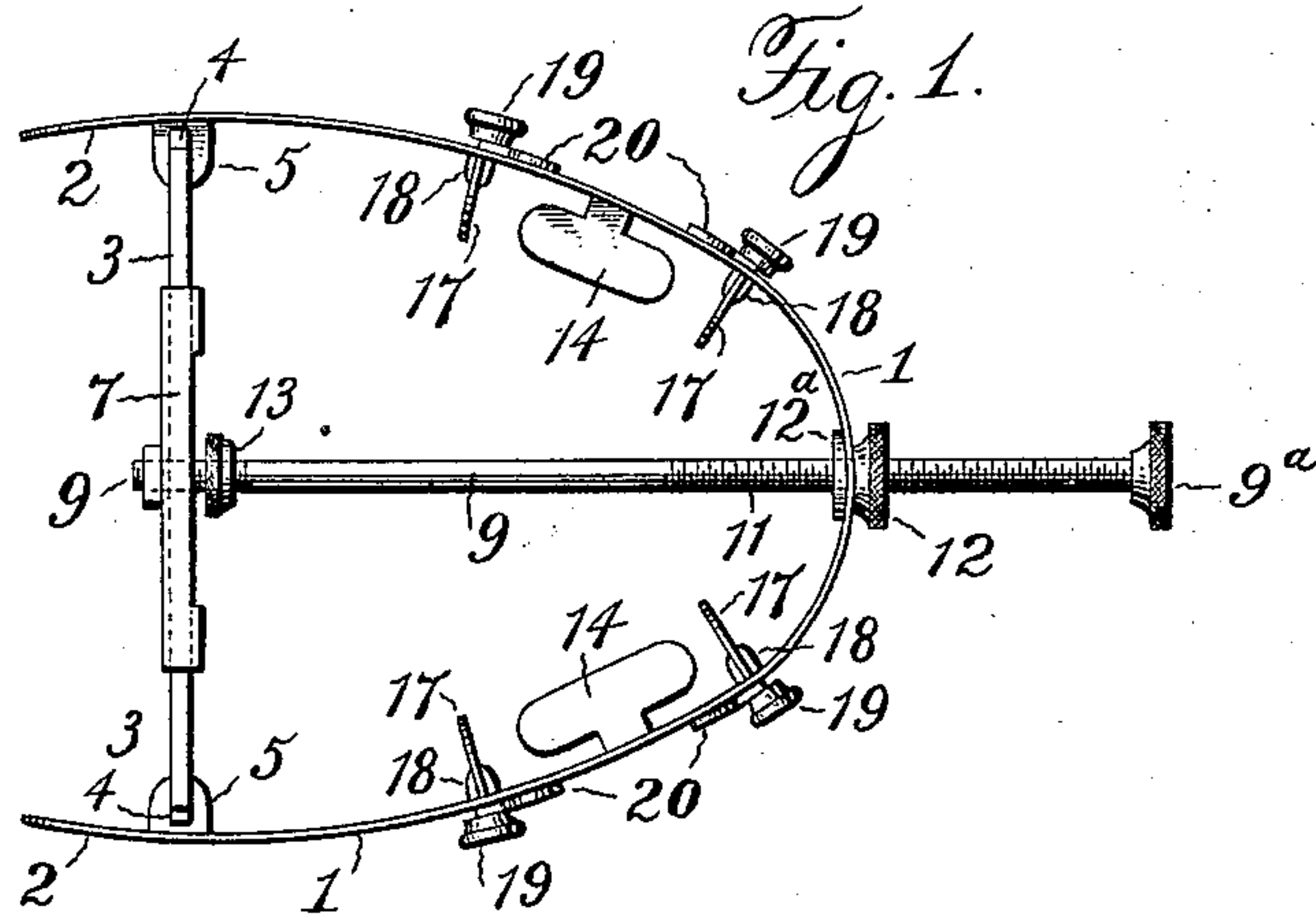
No. 607,295.

Patented July 12, 1898.

W. O. TALBOT.
DENTAL INSTRUMENT.

(Application filed July 2, 1897.)

(No Model.)



WITNESSES
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UNITED STATES PATENT OFFICE.

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DENTAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 607,295, dated July 12, 1898.

Application filed July 2, 1897. Serial No. 643,318. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM O. TALBOT, a citizen of the United States, residing at Biloxi, in the county of Harrison and State of Mississippi, have invented a new and useful Dental Instrument, (a Prodentometer,) of which the following is a specification.

My invention relates to improvements in dental instruments for ascertaining and fixing the curvature and contour of the jaw to serve as a guide for preparing sets of artificial teeth and provided with means for measuring cavities to be filled by artificial dentures; and said invention consists in the novel construction and combination of parts hereinafter described and claimed, reference being made to the accompanying drawings, wherein—

Figure 1 is a top plan view of the complete instrument. Fig. 2 is a longitudinal sectional view. Fig. 3 is a transverse sectional view, and Fig. 4 is a detail view of one of the cavity-measuring gages.

In the said drawings the reference-numeral 1 indicates a strip of spring material, preferably spring metal, which is bent into an approximately semicircular formation of a size adapted to embrace a bank of teeth, and the free ends 2 thereof are adjustably connected together by means of arms 3 4, which are connected to said ends in a suitable manner, that shown in the drawings consisting in disposing the turned-over ends of said arms in slotted ears 5, formed with and bent at right angles to the band or strip 1. The connection shown is such that the button-heads 6, formed upon the turned-over ends of the arms 3 4, may be brought into registration with the elongated slots in the ears, so that the buttons may enter the slots and then upon turning said arms into their operative position the buttons will stand crosswise in the slots and prevent disengagement of the arms with said ears. By providing this manner of attachment the arms may be readily disconnected should occasion make it desirable. The inner or overlapping ends of said arms are arranged to slide freely in the coupling-box 7, said arms being cranked intermediate their extremities, as at 8, so that they are separated from each other in the coupling-box, as shown, to provide passage for the clamping-rod hereinafter referred to.

The numeral 9 indicates a clamping-rod

which passes between the connecting-arms 3 4 and the end of which is in screw-threaded engagement with the coupling-box 7. Said clamping-rod is also supported in a perforated lug 10, provided intermediate the extremities of the spring-strip 1 and located at the apex of said strip. The clamping-rod is provided for a suitable portion of its length with screw-threads 11, and revolvably mounted thereon and in engagement with said screw-threads is an adjusting-nut 12, having a washer 12^a, which carries the arched portion or apex of the spring-strip 1, as shown in the drawings.

Near the end of the clamping-rod, which is in screw-threaded engagement with the coupling-box, is provided a clamping head or collar 13, which is rigid with the rod, so that by rotating said clamping-rod, to facilitate which it is provided with a convenient handle 9^a, the head or collar 13 is made to firmly engage the connecting-arms 3 4 and confine them firmly in any position of adjustment between said clamping head or collar and the wall of the coupling-box 7, as shown.

The reference-numeral 14 indicate rests formed with and extending laterally from the spring-strip 1 and in the same horizontal plane with the lower edge of said strip, as shown.

The ears 5, with which the ends of the connecting-arms 3 4 engage, are extended below the bottom of the edge of the strip 1, as illustrated, in order that the upper surface of the said connecting-arms may also be in the same horizontal plane of the lower edge of said strip, whereby the surface of said arms also serves as rests for the teeth. It may be observed also in this connection that the clamping-rod is in the same relative plane, so that it may serve as a rest for the front teeth.

The manner of using and mode of operation of the instrument as thus described are as follows: The instrument is placed in the mouth of the patient in the position illustrated in Fig. 1 of the drawings when the contour and dimensions of the upper jaw are to be ascertained, the clamping-rod being in the position where the clamping collar or head thereon is out of engagement with the connecting-arms, the spring-strip being disposed outside of the teeth or gums and the teeth of the patient resting upon the connecting-arms 3 4,

the rests 14, and the clamping-rod 9. In this position the free ends of the spring-strip 1 can be readily pressed by the dentist until they contact with the exterior of opposite teeth or gums at the rear of the jaw, and in this position the clamping-rod 9 is rotated until the clamping head or collar 13 engages firmly the connecting-arms 3 4 and confines the same from movement between said clamping head or collar and the walls of the coupling-box 7. In this manner the distance between opposite teeth or gums at the rear of the jaw is ascertained and fixed. When this operation has been accomplished, the curvature of the jaw or line of teeth or gums can be obtained by forwardly rotating the adjusting-nut 12, which is in screw-threaded engagement with the threaded portion of the clamping-rod. The said nut carries the spring-strip 1 with it until the latter contacts with the apex or front of the line of teeth or gums or jaw, whereby the curvature and contour are ascertained and fixed. If in the ascertaining of the curvature or horizontal contour it is necessary to rotate the nut so that it shall have a progressive movement toward the connecting-arms 3 4 to measure a broad short bank of gums or teeth, the said nut will force the spring-strip to accompany it in its movement, as will be understood. Likewise, if it is necessary to rotate the said nut in the opposite direction to ascertain and fix the configuration of a narrow long bank of teeth or gums the washer 12^a will cause the strip to follow said nut in its movement. When the dimensions and configuration or contour have been ascertained in this manner, the instrument serves as a guide to the dentist in preparing the necessary set of teeth to fit the patient. If it is necessary to ascertain the dimensions and curvature of the lower jaw or bank of teeth of the patient, the instrument is reversed in position and the same operation repeated.

My invention is also adapted for measuring cavities between the teeth of the patient, such as occur by the loss of a tooth or teeth, to which end the spring-strip is preferably provided on its concave face with a graduated scale 15, as in Fig. 2; but the scale may be arranged on the convex face, as in Fig. 4, and is also provided with longitudinal slots 16, in which are adjustably located gages 17, provided with screw-threaded points 18, passing through the slots 16 in the spring-strip, and thumb-nuts 19, arranged upon the said screw-threaded points for the purpose of securing said gages in their positions of adjustment. In connection with said gages I provide tooth-measurers 20 for the purpose of measuring the length of the tooth or teeth to be fitted in the cavity. These tooth-measurers consist of slotted plates hung upon the screw-points of the gages and vertically adjustable relatively to the spring-strip 1 and are confined in their position of adjustment by means of the thumb-nuts 19. The tooth-measurers

are rounded at their upper and lower edges, so as to conform to the ordinary natural boundary-line of the gum of the patient. They are arranged in the relative positions shown in the drawings and are hollowed between the rounded upper and lower ends, so that they may be adjusted into close proximity to each other.

The manner of using the instrument when it is employed to measure the space caused by the loss of a tooth or teeth and the cavity is to be filled by an artificial tooth or teeth is as follows: The instrument is placed in the patient's mouth, as before described, with the teeth of the patient resting upon the tooth-rests, connecting-arms, and clamping-rod, and the gages 17 are adjusted until one gage is in contact with the tooth anterior to the cavity and the other gage in engagement with the tooth posterior to the cavity, the upper end of a tooth-measurer 20 being in engagement with the marginal line of the gum. When the parts are in the position described, the nuts 19 are clamped to fix them, and the dentist may, upon removal of the instrument, measure the distance between the gages upon the scale 15, by which he will ascertain the length or the dimensions of the cavity to be filled, and by measuring the distance between the upper end of the tooth-measurer 20 and the lower edge of the spring-strip he will ascertain the length of the tooth necessary to be provided to conform with the other teeth of the patient.

Having thus described my invention, what I claim is—

1. In a dental measuring instrument, the combination of a spring-strip of a size to embrace a bank of teeth and arms connecting the free ends thereof, substantially as described.

2. In a dental measuring instrument, the combination of a spring-strip of a size to embrace a bank of teeth, arms adjustably connecting the free ends thereof, and means for clamping said arms, substantially as described.

3. In a dental measuring instrument, the combination with a spring-strip, of arms attached to the free ends thereof, a coupling-block receiving said arms, and a clamping-rod supported in said spring-strip, engaging said coupling-block, and provided with a coupling-head adapted to clamp said connecting-arms in said block, substantially as described.

4. In a dental measuring instrument, the combination of a spring-strip, arms adjustably connecting the free ends thereof and arranged to move in a coupling-block, a clamping-rod supported in said strip, engaging said coupling-block, and provided with a clamping-head, and an adjusting-nut mounted upon and in screw-threaded engagement with said clamping-rod, substantially as described.

5. In a dental measuring instrument, the combination of a spring-strip, and gages ad-

justably carried thereby, substantially as described.

6. In a dental measuring instrument, the combination with a slotted spring-strip, of
5 gages adjustably arranged in the slots thereof, substantially as described.

7. In a dental measuring instrument, the combination of a slotted spring-strip, gages
10 adjustably carried thereby, and tooth-measuring instruments vertically adjustable in relation to said strips, substantially as described.

8. In a dental measuring instrument, the combination with a spring-strip, of arms ad-
15 justably connecting the free ends thereof, a clamping-rod supported by said spring-strip and engaging a coupling-block in which said arms are movably housed, an adjusting-nut in screw-threaded engagement with said
20 clamping-rod, and gages adjustably carried

by said spring-strip, substantially as described.

9. In a dental measuring instrument, the combination with a slotted spring-strip, of
arms connected with the free ends thereof, a 25 coupling-block in which said arms are movably received, a clamping-rod supported by said spring-strip and engaging with said coupling-block, a clamping-head on said rod, an adjusting-nut mounted upon and in screw- 30 threaded engagement with said rod, gages adjustably mounted in the slots of the spring-strip, and tooth-measurers carried by said gages and vertically adjustable relatively thereto, substantially as described.

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Witnesses:

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E. L. DOYLE.