

June 28, 1932.

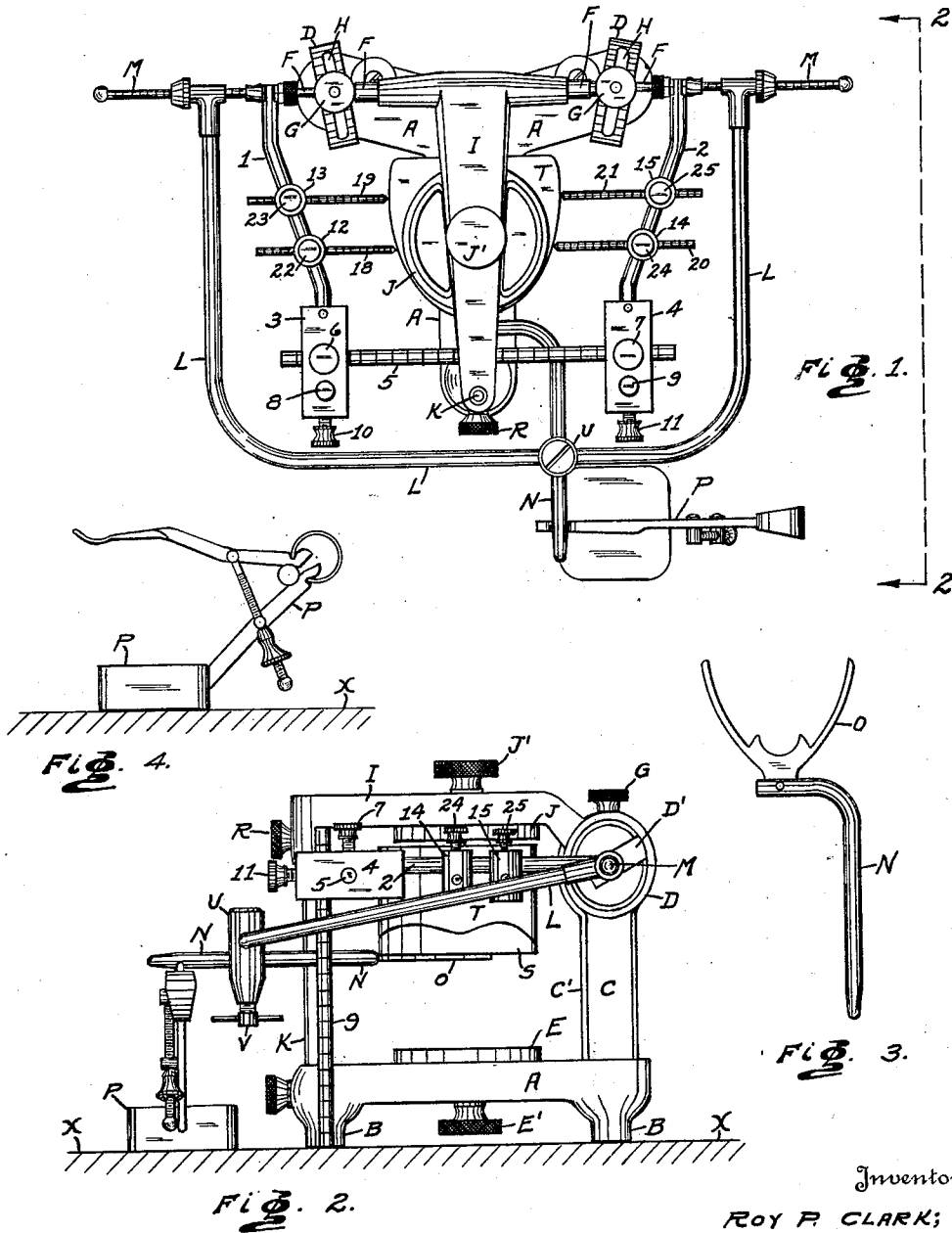
R. P. CLARK

1,864,804

INSTRUMENT FOR OBTAINING CONDYLE CAST RECORDS

Filed May 4, 1931

2 Sheets-Sheet 1



Inventor:

ROY P. CLARK;

By *Robert C. Laidley*
Attorney.

June 28, 1932.

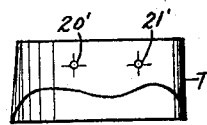
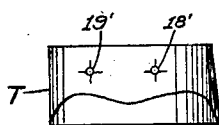
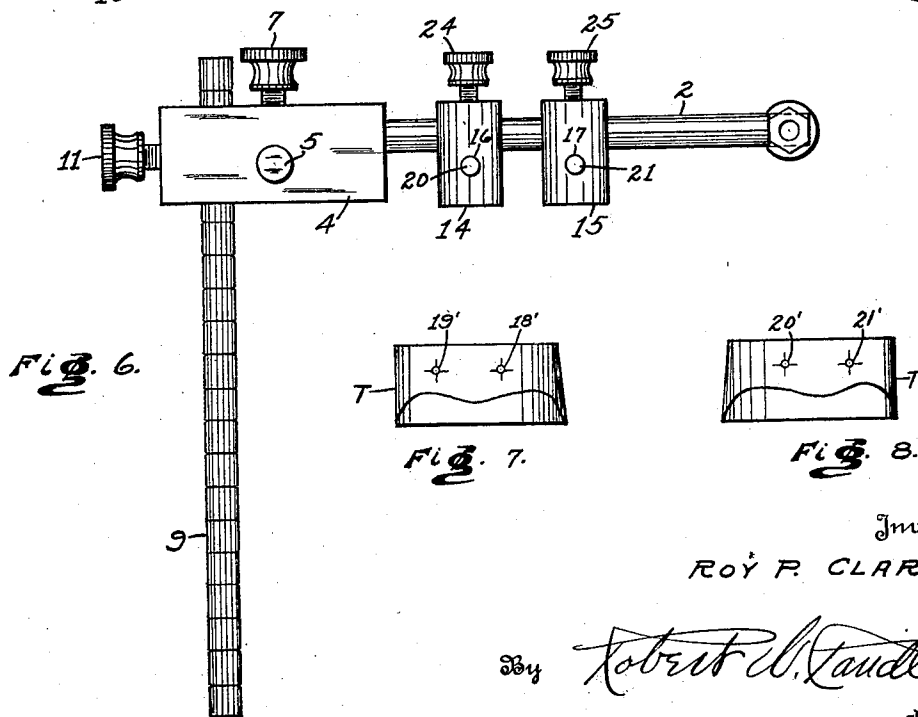
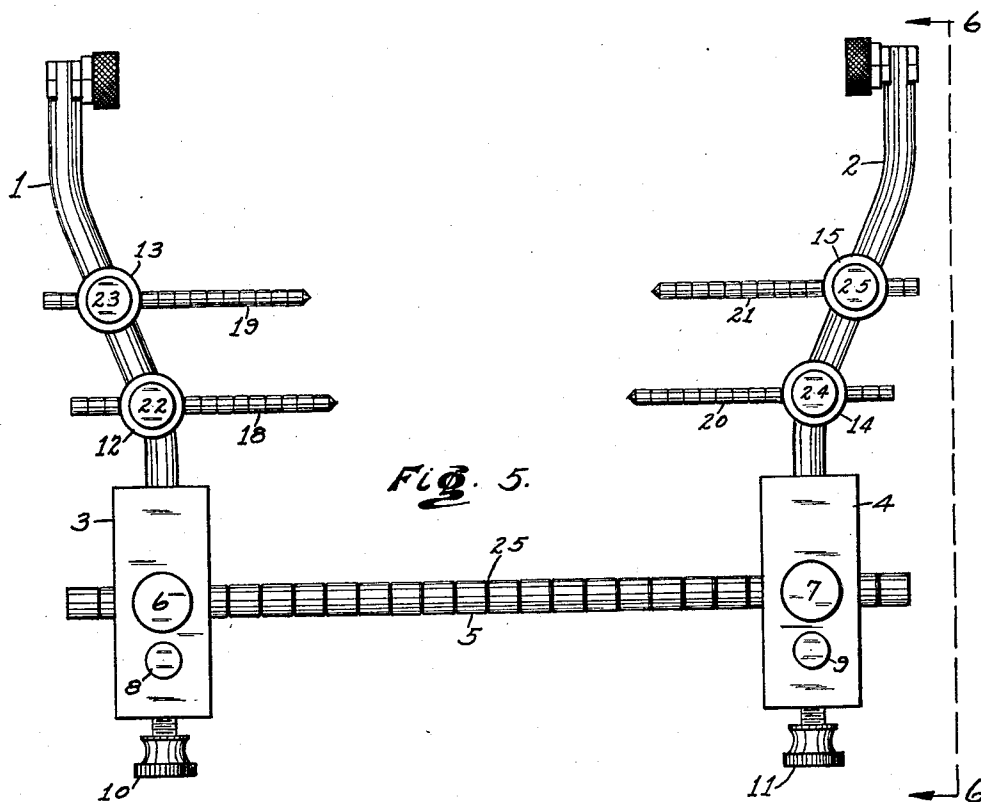
R. P. CLARK

1,864,804

INSTRUMENT FOR OBTAINING CONDYLE CAST RECORDS

Filed May 4, 1931

2 Sheets-Sheet 2



Inventor:

ROY P. CLARK;

By Robert W. Dauder

Attorney.

UNITED STATES PATENT OFFICE

ROY P. CLARK, OF BROWNSTOWN, INDIANA

INSTRUMENT FOR OBTAINING CONDYLE-CAST RECORDS

Application filed May 4, 1931. Serial No. 534,885.

My invention relates to prosthetics, and the object thereof, broadly speaking, is the provision of a prosthetic instrument which is particularly designed for obtaining condyle-cast and articulator records from model dentures, which may be transmitted diagrammatically, or otherwise, for the purpose of producing therefrom absolutely correct dentures by a prosthetist who is remote from the patient for whom they are prepared.

In other words my invention, as it relates to prosthetic dentistry, provides means for obtaining true and accurate data relating to the condyle and other movements of a person's jaws, whereby the data thus obtained may be transmitted to a laboratory where the same may be impersonally incorporated into a correct anatomical dental set-up, without experimentations or loss of time.

Also my object is to provide an instrument, of the nature above mentioned, which may be employed in connection with any standard make of prosthetic articulator which employs face-bow technic.

And, finally, my object is to provide an attachment for prosthetic articular instruments, which is simple in construction, easily operated and controlled, positive and absolutely accurate in its results, which can be manufactured and sold at a comparatively low price, and by which the cost of operation will be practically nil.

Other objects and particular advantages of my invention will suggest themselves to those familiar with the art, in the course of the following description, and that which is new and involves invention will be correlated in the appended claims.

In the accompanying two-sheets of drawings, forming a part of this specification, Figure 1 is a top plan view of a standard adaptable articulator, and its attached face-bow, showing the full assembly of the type usually employed by the prosthetist profession, and showing my invention connected therewith in operative condition. Figure 2 is an end elevation of the same. Figure 3 is a plan view of the bite fork, or cast support, alone. Figure 4 is a side elevation of the face-bow jack alone. Figure 5 is a top plan

view of my attachment alone. Figure 6 is a side elevation of my attachment, as taken from the line 6-6 of Fig. 5. Figure 7 is a side elevation of an upper plaster cast denture. And Figure 8 is like view of the other side of the same.

Similar indices denote like parts throughout the several views.

In order that the construction, the operation, and the several advantages of my invention may be more fully understood and appreciated, I will now take up a detailed description thereof, in which I will set forth the same as comprehensively as I may.

In order to lay the basis for an explanation of my invention, I will first briefly describe an adaptable articulator and its face-bow associated therewith, with the parts thereof indicated by letters of reference, to which parts I make no claim per se.

The articulator instrument shown comprises the triangular, three pronged base A, which is slightly elevated above the surface X by means of the depending legs B. Said base provides two rearwardly diverging arms and one forwardly extending arm, each of which has a leg B near its outer end and integral therewith.

Extending upwardly from each of the two rear arms of the base A, are spaced apart condyle posts C and C', each of which terminates in an adaptable eccentric construction D, identical with each other.

Resting on the central portion of the base A is the lower mounting plate E, which is detachably secured by the locking screw E'.

Letter F denotes a shaft, which extends through each of the members D, with a spherical knob or ball (not shown) formed integral therewith and they are located inside the members D, and their paths of movement are adjustable by simply changing the inclination of the slots, as the slot D' which is shown in Fig. 2, whereby the corresponding condyle movements may be imparted thereto. The inclination of the slots D' may be changed by loosening the screws G, and then moving the stems thereof in the slots H, whereby the slots D' may be turned to the desired angle,

after which the screws G are to be tightened to retain the adjustment attained.

Rigidly connected with the central portion of the shaft F is the forwardly extending arm I, which carries on its underside the upper mounting plate J, which is concentric with the plate E, but it is some distance thereabove. The plate J is detachably secured by means of the locking screw J'. The forward end of the arm I is supported by the incisal pin K, which by means of the screw R is capable of several adjustments, which need not be particularized.

Letter L designates the face-bow, the same having its rearwardly extending ends adjustably secured to the respective oppositely disposed condyle-slides, or pintles, M. Said slides M are in absolute alignment, and concentric, with each other and with the shaft F, with which they are usually directly pivoted, so that the forward or central part of the face-bow may swing up and down as desired.

Letter N denotes an arm, which carries clamp-block U, which also is mounted on the central portion of the face-bow L, and the members L, N and U, are adapted to be adjustably secured together, by means of the set screw V, whereby the arm N may be universally adjusted. Carried by the inner end of the arm N is the supporting fork O, which is normally concentric with the plates E and J, between which it projects, for the purpose hereinafter set forth.

Letter P denotes an adjustable jack, shown alone in Fig. 4, which is adapted to rest on the surface X, and it is for the purpose of supporting the forward portion of the face-bow L at the desired height to which it may be adjusted.

Letter S designates the wax bite plate, with which is associated in the usual manner the plaster cast T.

My invention proper includes the elements which are indicated by numerals, and comprises the arms 1 and 2, with their parallel end portions pivoted to the outer ends of the shaft F, or on the pins M, or between said parts in substantially the same manner that the rear ends of the face-bow are pivoted, or otherwise such that the movements of the arms 1 and 2 are concentric with the shaft F, and the pins M. Said arms 1 and 2 extend forwardly, and slightly convergently in their central positions, with their forward ends permanently secured in the respective blocks 3 and 4, which blocks are spaced apart and are adjustably connected by the graduated bar 5, to which they are detachably secured by means of the set-screws 6 and 7, which are threaded down into said blocks and impinge the bar 5.

Numerals 8 and 9 designated the vertical supporting bars, forming legs, which are also graduated, for vertical adjustments, and which are slidable in apertures formed

through the respective blocks 3 and 4, and they may be adjusted as desired, and then secured at such adjustments by means of the respective set-screws 10 and 11.

Said members 8 and 9 are adapted to contact with the surface X, and they support the blocks 3 and 4 at any height to which it is desirable to move them.

Rigidly mounted on the arm 1 are the blocks 12 and 13; and likewise mounted on the arm 2 are the blocks 14 and 15. All of said blocks 12, 13, 14 and 15 are identical with each other, and each has a horizontal aperture formed through its lower part, as the apertures 16 and 17, which are shown in Fig. 6.

Numerals 18, 19, 20 and 21 denote condyle slides or gage-pins, each of which is slidably mounted in one of said apertures in the respective blocks 12, 13, 14 and 15; and their inner ends are formed pointed, or tapering, for purposes hereinafter set forth. Said condyle slides are identical with each other, and they are also parallel with each other, and with the graduated bar 5, and they are adapted to be secured in place by means of the respective set-screws 22, 23, 24 and 25, which are threaded into the respective blocks 12, 13, 14 and 15.

Operation.—In using my invention the adjustments are such that readings are to be taken from at least eight different places, as follows: on the four condyle slides 18, 19, 20 and 21; the supporting bars 8 and 9; and near each end portion of the bar 5. The said eight readings are, of course, to be taken in addition to the readings normally afforded by the instrument with which my invention is associated.

To obtain the adjustments so that correct readings may be made at said points, the procedure is substantially as follows:

The upper wax bite S is adjusted in the patient's mouth, after which the face-bow L is adjusted in the usual manner. The condyle pins M are then adjusted to the patient's face concentric with the patient's condyles. The wax bite S is then removed from the mouth and, together with the face-bow and the bite fork intact, is placed in the articulator instrument. At this time the articulator or transfer instrument is set, as to width and height, such as to fit the articulation and the width between the slidable condyle pins which are adjusted to fit the condyle-posts of the transfer instrument.

In the use of the face-bow the condyle slides, or gage-pins, are always adjusted the same on each side when finding the correct width between them, so as to fit the patient's face properly, and when transferring the face-bow from one's mouth to the articulator, it is necessary to run the condyle slides inwardly somewhat, to fit the condyle posts, but the positions on each side are always kept

equal so that the correct lateral position of the bite-plate and the cast is always maintained.

When the face-bow has been adjusted the lower front edge of the bite-plate is even with the groove 25, in the center of the rod 5.

Next the condyle slides are run in until they touch the cast and then make a small cone-shaped indentation in the cast with the point of each condyle slide, forming the respective indentations 18', 19', 20' and 21', respectively. These indentations are each made more clear by means of two pencil lines crossing each other at right-angles at the exact center of each indentation formed by the points of the condyle slides, as shown in Figs. 7 and 8. This will show clearly where the points of the condyle slides should go when re-assembling at a distance from where the measurements were taken.

A correct reading is then made, and indicated upon a sheet of paper, from the graduations of each of said eight points, by means of the graduation marks, or by means of calipers, or otherwise.

Other anatomical data, such as the protrusion bite and the centric relation bite, are also to be taken at this time, to insure accuracy when the set-up is made and assembled.

The record reading, and the other anatomical data, together with casts, and the bite plates, are then sent to a laboratory, where with the same type of articular instrument, and my attachment, the readings and other data can be re-assembled and mounted in their exact relations, and from which a correct anatomical set-up can be made which, together with the data above mentioned, may be returned to the sender, together with the dental set-up all ready to be placed in the patient's mouth, with confidence that it will be absolutely correct.

It is to be understood that various changes may be made in the several details herein set forth, and that my attachment may be employed in other ways and with other devices from that shown and described, without departing from the spirit of my invention or sacrificing any of the advantages thereof which are new and useful and which involve invention.

Having now fully shown and described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In combination with a prosthetic adaptable articular instrument carrying a plaster-cast of a denture mounted therein, an attachment for obtaining condyle and other records from the plaster cast, comprising a frame carried by the said instrument and having a plurality of adjustable pintles to provide contacts for obtaining various data with re-

lation to the plaster cast carried by said instrument.

2. In combination with a prosthetic adaptable articular instrument having a face-bow, an attachment for said instrument including a plurality of adjustable contacts providing means for obtaining various records, both vertical and horizontal, of the dental model which is carried thereby, said means comprising a plurality of slidable and adjustable members adapted to be secured at the points of adjustment to which they may be set.

3. An instrument for obtaining condyle and other records from a dental cast, comprising a frame, a plurality of pintles adjustably connected to said frame and providing contacts for obtaining data from the dental cast, means for obtaining from the instrument the exact data recorded by such adjustments, and means for supporting said instrument in operative position, substantially as set forth.

4. In connection with a prosthetic adaptable articular device having a face-bow and carrying a dental model; a frame detachably connected with said device, a plurality of graduated pintles adjustably connected to said frame and adapted to contact with said dental model for obtaining recordable data with relation to said model, substantially as set forth.

In testimony whereof I have hereunto subscribed my name.

ROY P. CLARK.