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O. L. SCALBOM

COMPRESSION GAUGE

Filed May 31, 1923

Fig. 1

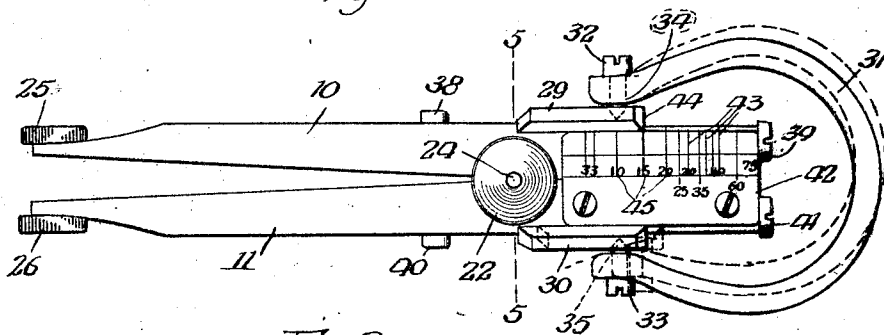


Fig. 2

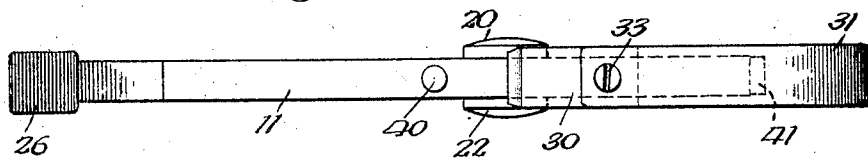


Fig. 3

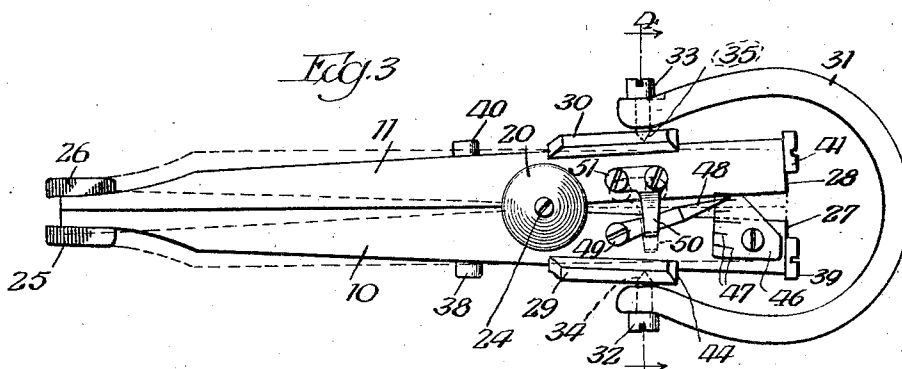


Fig. 4

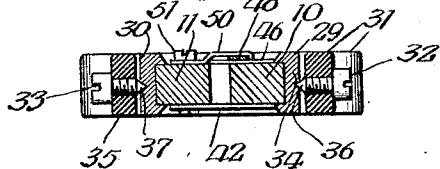


Fig. 5

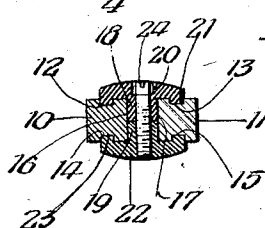
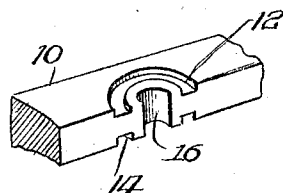


Fig. 6



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UNITED STATES PATENT OFFICE.

OSCAR L. SCALBOM, OF GLENVIEW, ILLINOIS.

COMPRESSION GAUGE.

Application filed May 31, 1923. Serial No. 642,440.

To all whom it may concern:

Be it known that I, OSCAR L. SCALBOM, a citizen of the United States, residing at Glenview, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Compression Gauges, of which the following is a specification.

This invention relates to improvements in compression gauges, particularly adapted for dentists' use, though not necessarily limited in its use for such purposes.

When teeth or a plate are placed in the mouth it is necessary to determine the bite or compression of the jaws to ascertain if the teeth or plate are properly set or positioned. Heretofore this has been determined by means of the use of a block of rubber or some other resilient composition upon which the patient bites, the depth of the impression in the block indicating the force or power of the bite. This method has proved to be unsatisfactory for the reason that the conclusions thus arrived at are only speculative and are not accurate and the setting of the teeth is done more or less by guess work.

It is one of the objects of the present invention to overcome these difficulties and objections and to provide an improved compression gauge for indicating accurately the exact power or pressure of the bite and which gauge includes an indicator adapted to be automatically set during the biting operation, the indicator remaining in a set position after the instrument has been removed from the mouth.

A further object is to provide an improved device of this character which is adapted to be set for varying pressures.

A further object is to provide an improved device of this character which will be simple, durable, compact and of a sanitary construction, and which will be effective and efficient in operation.

To the attainment of these ends and the accomplishment of other new and useful objects as will appear, the invention consists in the features of novelty in substantially the construction, combination and arrangement of the several parts hereinafter more fully described and claimed and shown in the accompanying drawing illustrating this invention, and in which—

Figure 1 is a plan view of one face of an instrument of this character constructed in accordance with the principles of this inven-

tion, showing some of the parts in full lines in one position and in dotted lines in another position.

Figure 2 is a side elevation of Figure 1.

Figure 3 is a view similar to Figure 1 of the opposite side of the instrument, showing the parts in full lines in one position and in dotted lines in another position.

Figure 4 is a detail sectional view taken on line 4—4, Figure 3.

Figure 5 is a detail sectional view taken on line 5—5, Figure 1.

Figure 6 is a detail perspective view of one of the members showing a portion of the pivot construction.

Referring more particularly to the drawing the numerals 10 and 11 designate two members or levers which are pivotally connected intermediate their ends. The pivot of the members is formed by recessing the upper faces of the members respectively as at 12 and 13 and also recessing the lower faces of the members respectively as at 14 and 15. The members 10 and 11 are provided with semi-circular openings 16—17 therethrough, which co-operate to form an opening adapted to receive the shanks 18—19 of two connecting members. The head 20 of one of the members is provided with a circumferential flange 21 on its lower face adapted to enter the recesses 12 and 13 of the member 10 when the shank 18 thereof is seated within the opening between the members. The shank 19 is provided with a similar head 22 having a flange 23 projecting below the lower face thereof and which latter flange is adapted to enter the recesses 14—15 in the members 10—11 when the shank 19 is seated within the opening between the members 10 and 11. It will thus be seen that the members 10 and 11 will be held together by means of the interlocking parts formed by the flanges and recesses and the shanks 18—19 are preferably of a length so that they will abut between the members 10 and 11. A fastening screw or bolt 24 is provided for securing the pivot members together. With this arrangement the stress of the members 10 and 11 about their pivots will be exerted upon the shanks 18 and 19 while the screw or bolt 24 will be protected against any strain, and at the same time by removing the screw or bolt 24 the members may be disconnected.

The free extremities of the members 10 and 11 are preferably provided with blocks

or portions 25—26 constructed of any suitable material preferably of fiber, which are adapted to be inserted in the mouth to be engaged by the teeth. The pivot between the members is preferably located adjacent the extremities 27—28 of the members 10 and 11, and the proximate faces of the members 10 and 11, and which members are arranged in the same plane, are so constructed as to permit the members 10 and 11 to be freely rocked about their pivot.

Sliding loosely upon the outer edge of the member 10 is a block or member 29, and a similar block or member 30 slides loosely upon the outer edge of the member 11. A substantially U shaped spring 31 arches over the ends 27—28 of the members 10 and 11 and the extremities of this spring 31 are pivotally connected respectively to the members 29 and 30 in any desired or suitable manner, preferably by means of bolts or screws 32—33, preferably having reduced or pointed extremities 34—35 which are seated in bearings 36—37 in the respective members 29—30, thereby permitting the spring member 31 to be rocked about the bearings formed by the extremities of the screws or bolts 32—33 and as indicated in dotted lines in Figure 1.

The members 29 and 30 are preferably grooved upon the members 10 and 11 to hold them against displacement with respect thereto and are adapted to be freely moved lengthwise of the respective members, the extent of movement of the member 29 in one direction being limited by means of a suitable stop 38, while its extent of movement in the opposite direction is limited by means of a stop 39. Similarly, the extent of movement of the member 30 is limited in one direction by means of a stop 40 and in the opposite direction by means of a stop 41. By connecting the spring 31 with the members 10 and 11 in the manner which is described it will be manifest that by adjusting the members or slides 29—30 with respect to the pivot between the members 10 and 11, the fulcrum will be changed, that is the extent of the stress of the spring 31 upon the ends of the members 10 and 11 will be varied according to the distance that the points 34 and 35 are moved toward or away from the pivot point between the members 10 and 11. Thus, if the points 34 and 35 are located in close proximity to the pivot between the members 10 and 11 and just to one side thereof, less power and pressure upon the members 25 and 26 will be required to move the members 10 and 11 the full extent about their pivots than would be required to move the members 10 and 11 about their pivots if the pivot points 34 and 35 are moved a greater distance from the pivot of the members 10 and 11.

In other words the extent of pressure nec-

essary to move the members 10 and 11 to the full extent about their pivots will be governed by the position of the points 34 and 35 with respect to the pivot of the members 10 and 11.

In order to facilitate the adjustment of the members 29 and 30 upon the members 10 and 11 the points 34 and 35 are constructed as pivots so as to permit the members 29—30 to be moved along the respective members 10 and 11, one in advance of the other, that is they may be "walked" along the members 10 and 11 by rocking the member 31 with respect to the members 10 and 11 and at the same time moving the members 29 and 30 longitudinally of the respective members 10 and 11.

A gauge plate 42 may be secured to one of the members 10 and 11 and which plate is provided with graduations or indications 43 to designate the number of pounds pressure. With these graduations 43 the end 44 of the member 29 co-operates and by positioning the end 44 with respect to any one of the graduations 43, the instrument may be set for the desired amount of pressure and which latter may be indicated by means of suitable characters 45. This plate 42 is arranged on one face of the members 10 and 11 and on the opposite face is arranged an indicator plate 46, having graduations 47 thereon and with which latter graduations a pointer or index 48 co-operates. This pointer is pivotally mounted as at 49 and is adapted to be moved about its pivot by means of a member 50, which is preferably of a hook shape formation. The indicator 48 is secured to one of the members 10—11 while the member 50 is secured by means of suitable fastening devices 51 to the other of the members 10 and 11, so that when the members 10 and 11 are rocked about their pivot against the stress of the spring 31, the hook shaped member will cause the pointer or index 48 to move across the graduations 47 of the plate 46 to the position shown in Figure 3. When, however, the stress of pressure is released from the members 10 and 11, the spring 31 will cause the members 10 and 11 to move about their pivots from the full line position shown in Figure 3 to the dotted line position shown in the said figure. During this latter movement the hook shaped member 50 will move out of engagement with the index or pointer 48, which will allow the latter to stand in its adjusted position, thereby enabling the operator to readily ascertain, after the instrument has been removed from the mouth of the patient, to just what extent the members 10 and 11 have been rocked about their pivot by the pressure of the patient's teeth thereupon.

The implement may then be reset for reuse by simply moving the index 48 about its pivot to its starting point and if it is de-

sired to increase the pressure necessary to operate the members 10 and 11, this may be accomplished by sliding the members 29—30 along the members 10 and 11, so as to move the end 44 of the member 29 adjacent the graduation 43 indicating the amount of pressure to which it is desired to set the implement.

While the preferred form of the invention has been herein shown and described, it is to be understood that various changes may be made in the details of construction and in the combination and arrangement of the several parts, within the scope of the claims, without departing from the spirit of this invention.

What is claimed as new is:—

1. A compression gauge including two lever like members pivotally connected in proximity to one end, bearing members adjustably mounted upon said members, resilient means connecting the said bearing members, the points of connection of said resilient means being movable with said members towards and away from the pivot of the first recited members, the opposite ends of the lever like members being movable towards each other against the stress of the said resilient means, and means for indicating the extent of pivotal movement of the last recited members against the force of said resilient means.

2. A compression gauge including two lever like members pivotally connected, bearing members slidably mounted upon the first recited members, a spring member connected with the said bearing members and arching over the first recited members, the said lever like members being adapted to be rocked about their pivot against the stress of the said spring member by pressure exerted at one end of the lever like members, and means for indicating the extent of pivotal movement of the first recited members against the force of said spring.

3. A compression gauge including two lever like members pivotally connected, bearing members slidably mounted upon the first recited members, a spring member connected with the said bearing members and arching over the first recited members, the said lever like members being adapted to be rocked about their pivot against the stress of the said spring member by pressure exerted at one end of the lever like members, means for indicating the extent of pivotal movement of the first recited members in one direction, and indicating means with which one of the said bearing members co-operates to determine the extent of adjustment of the latter.

4. A compression gauge including two lever like members pivotally connected, means tending normally to move the members in one direction about their pivot to

separate the members at one end and against the stress of which means the members may be rocked about their pivot when pressure is exerted upon the said separated ends, means for indicating the extent of pressure exerted upon the last recited ends of the members, and means whereby the point of stress of the first recited means upon the said members may be varied at will with relation to the pivot of the said members.

5. A compression gauge including two lever like members pivotally connected, means tending normally to move the members in one direction about their pivot to separate the members at one end and against the stress of which means the members may be rocked about their pivot when pressure is exerted upon the said separated ends, means for indicating the extent of pressure exerted upon the last recited ends of the members, means whereby the point of stress of the first recited means upon the said members may be varied at will with relation to the pivot of the said members, and indicating means co-operating with the third recited means for determining the extent of adjustment of the latter.

6. A compression gauge including two lever like members pivotally connected, bearings slidably mounted upon the said members, a resilient member, means pivotally connecting the ends of the resilient member with the said bearings for rocking movement with respect thereto, said resilient member tending normally to separate the members at one end and against the stress of which resilient member the first said members may be rocked when pressure is exerted upon the separated ends of the members, and an indicator responsive in its operation to the rocking of the first said members to indicate the extent of such rocking movement.

7. A compression gauge including two lever like members pivotally connected, bearings slidably mounted upon the said members, a resilient member, means pivotally connecting the ends of the resilient member with the said bearings for rocking movement with respect thereto, said resilient member tending normally to separate the members at one end and against the stress of which resilient member the first said members may be rocked when pressure is exerted upon the separated ends of the members, and an indicator responsive in its operation to the rocking of the first said members to indicate the extent of such rocking movement, the said indicator including an element adapted to remain in its set position when the stress upon the last said ends of the first said member is relieved.

8. A compression gauge including two lever like members pivotally connected, bearings slidably mounted upon the said mem-

bers, an indicating gauge for determining the extent of adjustment of the said bearings upon the said members, a resilient member, means pivotally connecting the ends of the resilient member with the said bearings for rocking movement with respect thereto, said resilient member tending normally to separate the members at one end and against the stress of which resilient member the first said members may be rocked when pressure is exerted upon the separated ends of the members, and an indicator responsive in its operation to the rocking of the first said members to indicate the extent of such rocking movement.

9. A compression gauge including two lever like members pivotally connected, bearings slidably mounted upon the said members, a resilient member, means pivotally connecting the ends of the resilient member with the said bearings for rocking movement with respect thereto, whereby the said bearings, while the resilient member is connected therewith, may be adjusted upon the first said member one in advance of the other and with respect to the pivot of the first said members, said resilient member tending normally to separate the members at one end and against the stress of which resilient member the first said members may be rocked when pressure is exerted upon the separated ends of the members, and an indicator responsive in its operation to the rocking of the first said members to indicate the extent of such rocking movement.

10. A compression gauge including two lever like members pivotally connected, bearings slidably mounted upon the said members, a resilient member, means pivotally connecting the ends of the resilient member with the said bearings for rocking movement with respect thereto, said resilient member tending normally to separate the members at one end and against the stress of which resilient member the first said members may

be rocked when pressure is exerted upon the separated ends of the members, an indicator responsive in its operation to the rocking of the first said member to indicate the extent of such rocking movement, and stops for limiting the extent of adjustment of the bearings upon the first said members.

11. A compression gauge including two lever like members pivotally connected, means tending normally to move the members in one direction about their pivot to separate the members at one end and against the stress of which means the members may be rocked about their pivot when pressure is exerted upon the said separated ends, means for indicating the extent of pressure exerted upon the last recited ends of the members, and means whereby the point of stress of the first recited means upon the said members may be varied at will with respect to the pivot of the said members, the last recited means including members mounted for adjustment towards and away from the pivot of the said members and stops for limiting the extent of adjustment of the second recited member.

12. A compression gauge including two members movable toward and away from each other one with relation to the other, means tending normally to separate the members and against the stress of which means the members may be moved by pressure toward each other, means for indicating the extent of pressure exerted upon the last recited means, and means whereby the point of stress of the first recited means upon the said members may be varied at will to increase or decrease the amount of pressure necessary to move the members toward each other.

In testimony whereof I have signed my name to this specification on this 24th day of May, A. D. 1923.

OSCAR L. SCALBOM.