

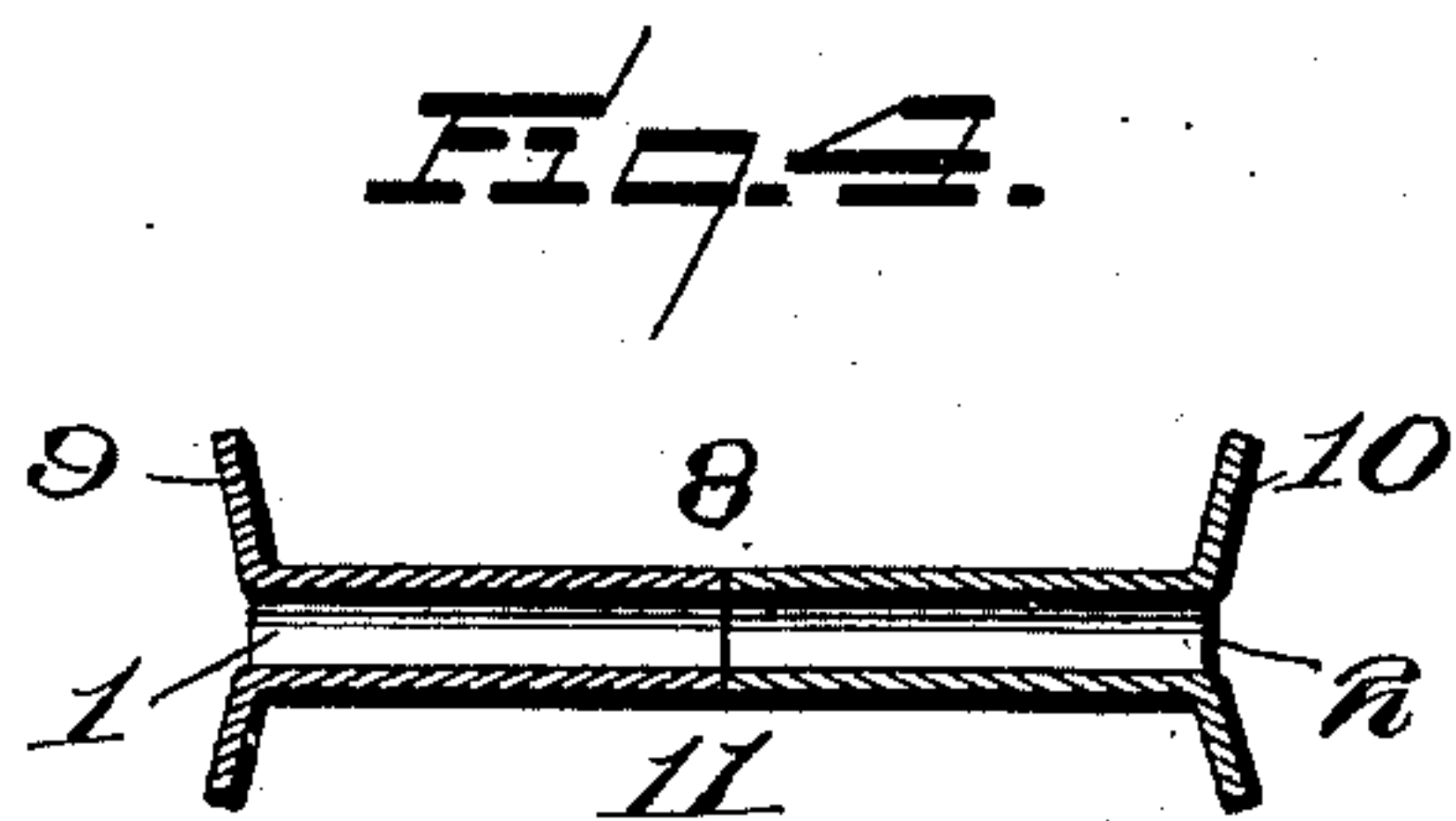
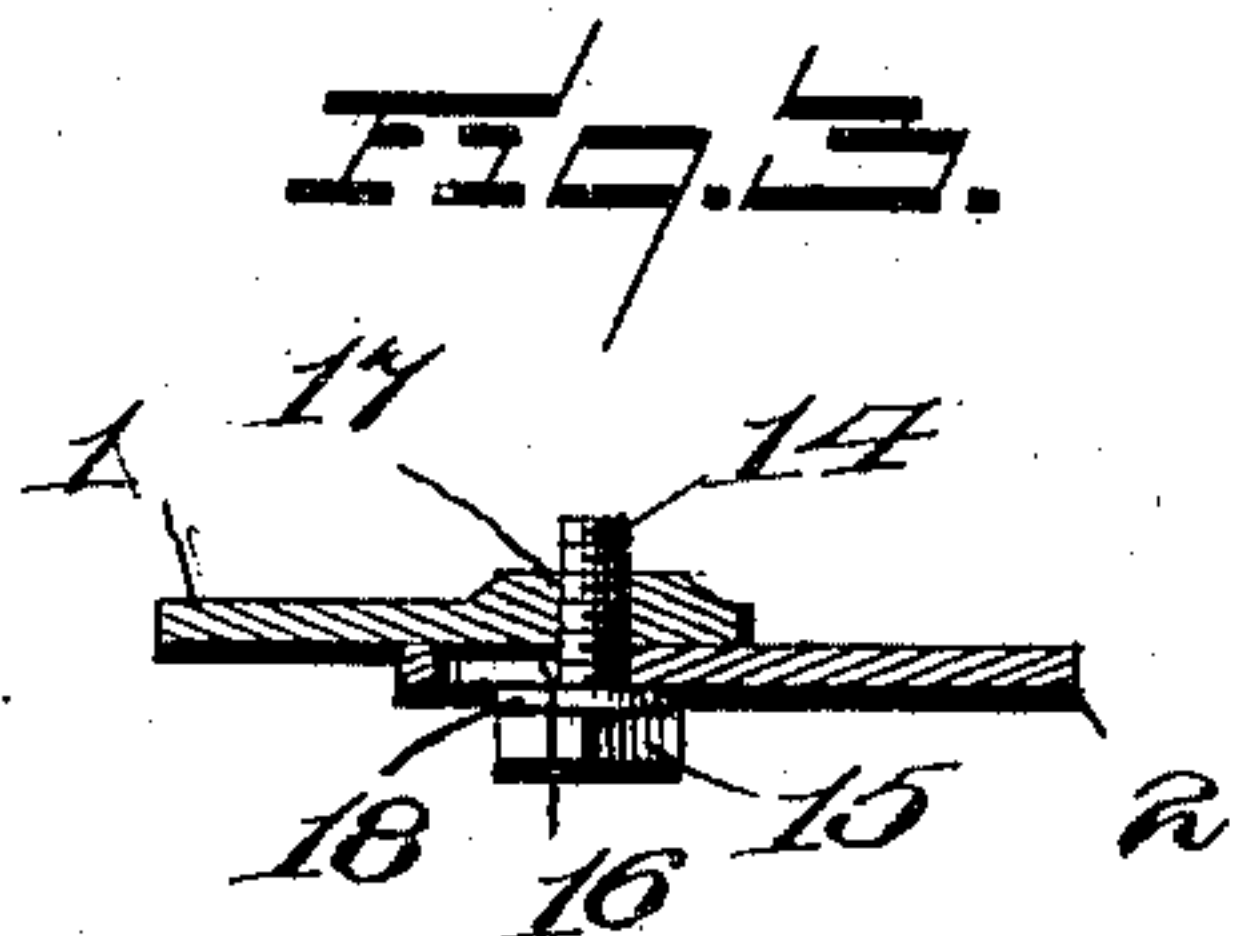
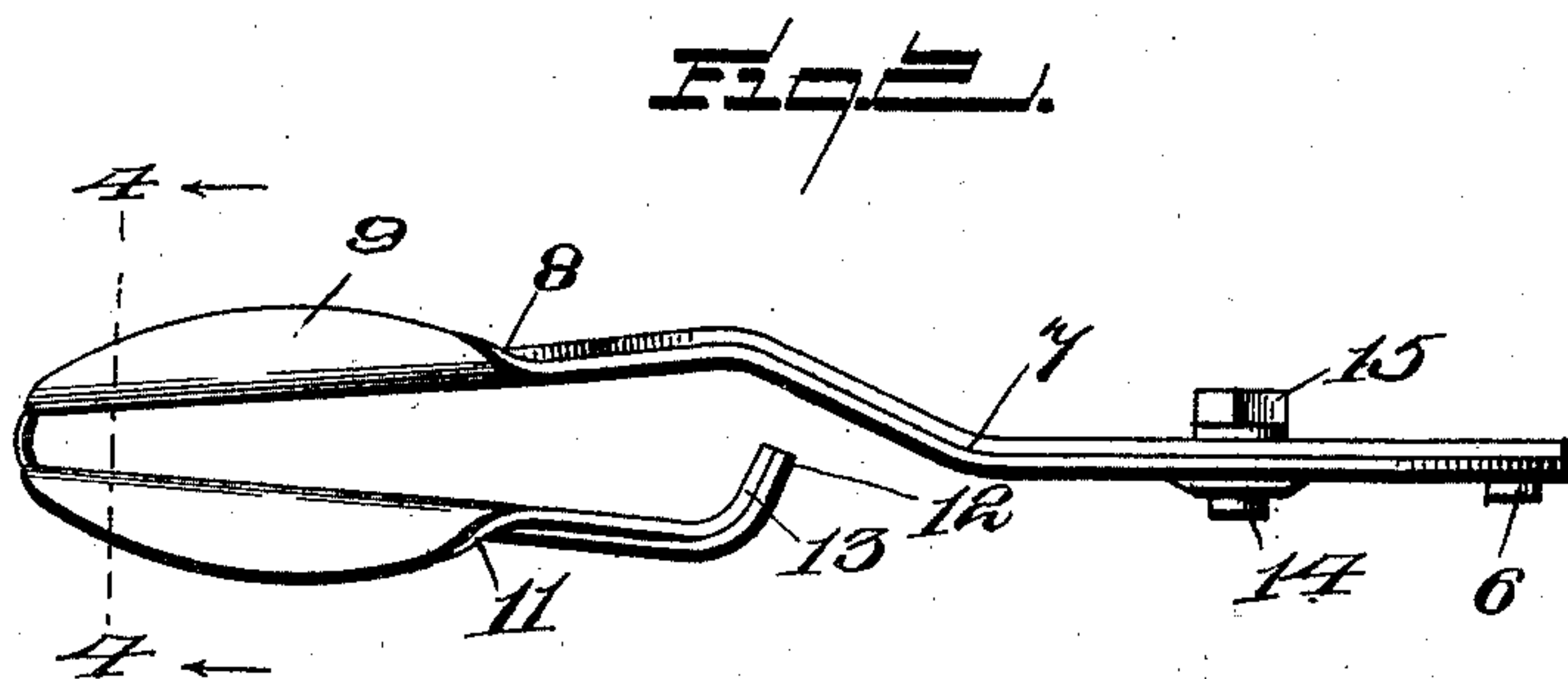
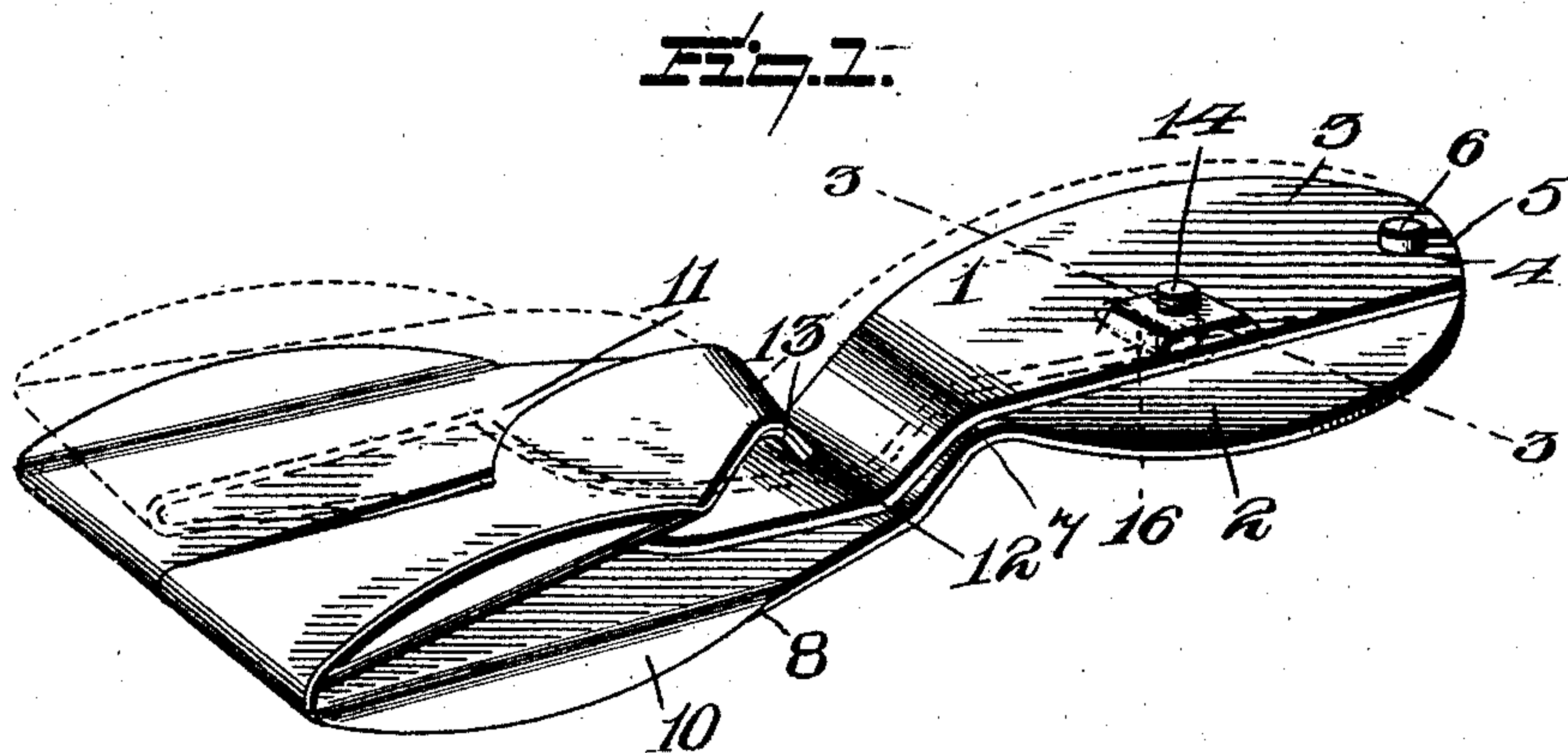
No. 654,527.

Patented July 24, 1900.

T. F. DRISKILL.  
ARTICULATING PLATE.

(Application filed Apr. 11, 1900.)

(No Model.)



Theodore F. Driskill.

By

Inventor

Witnesses

Geo. H. Byrne.  
Lewis G. Zulueta

E. G. Siggers.

Attorney



# UNITED STATES PATENT OFFICE.

THEODORE FREDERICK DRISKILL, OF CORSICANA, TEXAS.

## ARTICULATING-PLATE.

SPECIFICATION forming part of Letters Patent No. 654,527, dated July 24, 1900.

Application filed April 11, 1900. Serial No. 12,483. (No model.)

*To all whom it may concern:*

Be it known that I, THEODORE FREDERICK DRISKILL, a citizen of the United States, residing at Corsicana, in the county of Navarro and State of Texas, have invented a new and useful Articulating-Plate, of which the following is a specification.

My invention relates to a novel articulating-plate or dental mold-cup designed to constitute a receptacle for wax or any other plastic impression compound which in the practice of dentistry is employed for the purpose of securing an impression of the patient's edentulous alveolar arches or of the teeth and gums in order to determine the articulation and other peculiarities of the arches or teeth preparatory to the making of artificial dentures to guide the dentist in his laboratory work.

One object of the invention is to produce an articulating-plate formed with upper and lower mold-cups adjustable as to lateral dimensions to fit in the mouth and having practically-permanent but slightly-yielding relation in order to preserve the well-defined lines of the impression when the jaws are separated to withdraw the mold from the mouth.

In the practice of dentistry the usual procedure is to first secure a separate impression of the upper and lower alveolar arches whether they are edentate or not and to then secure what are known as "casts" or "models" from the impressions thus obtained. These models are what are known as "artificial" dentures, and it becomes necessary after they are obtained to ascertain the bite or articulation of the jaws. The usual manner of obtaining this impression of the articulation is by placing rims or small molds of softened wax upon the ridges of the arches, and the patient is requested to bite thereon in order to secure the imprint of the upper and lower arches. Sometimes a large ball of wax or other compound is employed for the purpose. The molds or artificial dentures obtained by the separate impressions are then placed in the impressions of the wax-bite or articulation and are made fast in what is known as an "articulator."

My invention is designed to facilitate the procuring of the impression of the articulation or bite after the impressions of the al-

veolar arches are taken in accordance with the usual methods.

It has heretofore been practically impossible to employ upper and lower molds to simultaneously obtain impressions of the upper and lower jaws, for the reason that the lower jaw has a pivotal or hinged movement which causes relative lateral movement of the alveolar arches and the teeth of the upper and lower jaws as the latter are separated, and consequently when a simultaneous impression of both the upper and lower teeth is attempted the withdrawal of the teeth from the opposite sides of the mold, or rather from the upper and lower mold, causes the impressions or mold-cavities in the lower mold to be enlarged by the lateral movement of the teeth or arches of the lower jaw.

A further object of the invention, therefore, is to so relate the upper and lower mold-cups that they will be practically in fixed relation, but will be capable of such slight relative movement as will permit the lower cup to spring downwardly to cause the mold-cavities or impressions to follow the lateral movement of the lower set of teeth as the latter are withdrawn from the mold. The effect of this peculiar arrangement makes possible the securing simultaneously of impressions of both the upper and lower jaws, because the lateral movement of the lower-jaw teeth, which has heretofore been an unsurmountable obstacle, is compensated for by this slight relative yielding of the mold-cups.

A still further object of the invention is to provide means for automatically retaining the sections of the plate in their relatively-adjusted positions, so that in adjusting the molds to the mouth it is simply necessary to expand or contract the plates, as the case may be, to cause the adjustment of the plate members without operating an adjusting-screw or other similar adjusting mechanism.

To the accomplishment of these several objects and others subordinate thereto, all as will hereinafter more fully appear, the invention consists in the novel construction and arrangement of the plate, which will more fully appear hereinafter.

In the accompanying drawings, Figure 1 is a perspective view of my plate inverted, showing the expanded positions of the plate mem-



bers in dotted lines. Fig. 2 is a side elevation or edge view thereof. Fig. 3 is a transverse sectional view on the line 3 3 of Fig. 1, and Fig. 4 is a sectional view on the line 4 4 of Fig. 3 looking in the direction of the arrows.

Referring to the numerals of reference designating corresponding parts in each of the several views, 1 and 2 indicate the plate members, which are stamped from light sheet metal and are movably connected at their rear ends (the juxtaposition of which latter produces a handle 3) by a hinge connection 4. This hinge connection may be formed in any suitable manner, provided it permits of lateral swinging of the members 1 and 2; but I prefer to overlap the contiguous edges of the members, as shown, and provide one of said members with an open-ended slot 5 at its rear end, designed to engage a headed stud or pintle 6, extending from the face of the other member. At the front end of the handle 3, which may be of any desired contour, the overlapped members are bent out of the horizontal plane of the handle, as indicated at 7, and are continued in a somewhat lower plane to form the upper mold-cup 8, defined between mold-retaining flanges 9 and 10, bent into substantially-parallel relation from the opposite edges of the members 1 and 2. At the end of the upper mold-cup 8 opposite the handle the plate members are bent back upon themselves to form the integral but slightly-yielding or resilient lower mold-cup 11 in divergent or slightly-inclined relation to the upper mold-cup 8 in order to relate the two cups in the lines of radii corresponding to the relation of the upper and lower articulation of the mouth to the joint of the lower jaw. At the rear extremity of the lower mold-cup—that is to say, at the end nearest the handle—the extremities of the overlapped members are bent toward the contiguous face of the upper mold-cup to form retaining and limiting flanges 12 and 13, which by their frictional contact oppose the relative movement of the members and which by their apposition to the upper mold-cup serve to limit the yielding of the lower mold-cup when the jaws are closed upon the opposed molds for the purpose of producing the impression in plastic compound or mold.

The overlapping edges of the members 1 and 2 are cut away from a point adjacent to the rear ends of both the upper and lower cups in order that those contiguous portions of the members constituting the bottom walls of the cups may be depressed into the same plane for the purpose of making the walls or faces of the cups perfectly smooth and to cause the contiguous side edges of the members to abut for the purpose of limiting the inward movement or contraction of the plate members to define cups of minimum dimensions.

By reference to Fig. 2 of the drawings it will be observed that the construction described comprehends the interfitting of the

member 1 within the member 2, since the doubled portion of the member 1, comprehending corresponding side portions of the upper and lower mold-cups, fits within the doubled portion of the member 2, defining the opposite side portions of said cups. It will now be observed that the plate members may be laterally separated or expanded to any desired extent to adjust the size of the mold to the mouth of the patient and that the frictional contact between the interfitting members, particularly between the flanges 12 and 13, will retain the members in their adjusted positions without the necessity for the employment of special adjusting devices. In order, however, to insure the retention of the plate members, I prefer to employ adjustable means for presenting further frictional resistance to the relative movement of said members. One embodiment of such means comprehends the provision of a compression-screw 14, provided with a head 15 and passed through an elongated transverse slot 16 in the member 2 and screwed into a threaded opening 17 in the member 1, the slot 16 being slightly curved concentric with the stud 6. Between the head 15 of the compression-screw 14 and the adjacent face of the plate 2 I interpose a yielding resistance—as, for instance, a rubber or other resilient washer 18—which while opposing a frictional resistance to the movement of the members will permit their expansion or contraction upon the application of the necessary pressure by the dentist when placing the mold in the mouth and adjusting it therein. The special utility of this particular form of plate will readily appear upon careful consideration of the conditions governing the taking of dental impressions.

As heretofore stated, the lower jaw swings from a hinge-joint, and therefore the lower teeth recede from the upper teeth when the jaws are opened in an arcuate path concentric with the hinge of the jaw. Now if we assume that a plastic compound is placed between the teeth and an impression secured upon both sides of the mold by the sinking of the teeth therein it will be evident that when the jaws are open the lateral movement of the lower teeth will spread or distort the impressions in the lower side of the mold and will render the cast practically useless, as it is well understood in the art that these impressions must be accurate reproductions of the articulation in order to be of any use whatever.

Now by reference to the drawings it will be seen that the upper and lower mold-cups are normally held in such inclined relation that when the jaws are closed upon the mold the upper and lower molds will be located in planes parallel to the articulations of the upper and lower teeth and that as the jaws are further closed to sink the teeth into the plastic material the lower mold-cup will yield to accommodate the change of relation of the lower jaw to the line of the upper jaw, or, in



other words, to compensate for the arcuate line of movement described by the lower jaw in the act of closing. In like manner when the lower jaw is dropped to withdraw the teeth or edentulous gums from the mold the mold-cup by reason of its resilient connection will swing back to its normal position, again compensating for the arcuate movement of the lower teeth or gums, and thereby preventing the distortion of the mold-cavities. When it is desired to separate the members entirely for the purpose of cleaning the plate, it is simply necessary to unscrew the compression-screw 14 and draw the member 1 longitudinally in order to disengage the slot 5 from the stud 6.

From the foregoing it will be observed that I have produced a simple, ingenious, and efficient articulating-plate for dental purposes; but while the present embodiment of my invention appears at this time to be preferable I do not wish to limit myself to the structural details defined, but reserve the right to effect such changes, modifications, and variations as may come properly within the scope of the protection prayed.

What I claim is—

1. An articulating-plate comprising upper and lower mold-cups, and means for yieldingly retaining the mold-cups in a manner to permit their approach under pressure, whereby said mold-cups are capable of limited relative movement under the clamping action of the patient's jaws.

2. An articulating-plate bent to form a pair of opposed mold-cups.

3. An articulating-plate bent back upon itself to form opposed, oppositely-disposed upper and lower mold-cups.

4. An articulating-plate bent back upon itself to form a pair of opposed mold-cups, said plate being composed of a plurality of longitudinal plate members capable of relative lateral movement.

5. An articulating-plate comprising relatively-movable members, means for yieldingly retaining said members in their adjusted positions, and yieldingly-related upper and lower mold-cups.

6. An articulating-plate comprising a pair of mold-cups composed of laterally-adjustable members, a member of each cup being integral with a member of the other cup.

7. An articulating-plate comprising an upper mold-cup and a lower mold-cup, means for connecting one end of the lower mold-cup to the contiguous end of the upper mold-cup in a manner to yieldingly retain said cups in

spaced relation and to permit said mold-cups to approach each other under the pressure of the patient's jaws, and means for limiting such relative movement of the mold-cups.

8. An articulating-plate comprising longitudinal plate members, each of which is bent back upon itself to form one side of both a lower and an upper mold-cup, said members being overlapped at their opposite ends.

9. An articulating-plate comprising a pair of members detachably connected by a hinge connection and bent to form upper and lower mold-cups, means for limiting the relative lateral movement of the members, and means for opposing a frictional resistance to said relative movement.

10. An articulating-plate comprising laterally-adjustable members bent back upon themselves to form corresponding side sections of upper and lower mold-cups, said members being provided with terminal flanges in frictional contact and opposing yielding resistance to the separation of the members.

11. An articulating-plate comprising a pair of relatively, laterally-movable members pivotally connected at one end and bent to form upper and lower mold-cups, a flange at the free end of the lower mold-cup arranged to abut against the plate to limit the relative movement of the cups, and means for limiting the relative movement of the members.

12. An articulating-plate comprising a pair of members hinged at one end and bent to form upper and lower mold-cups, overlapping flanges extending from the free end of the lower mold-cup and designed to impinge against the upper member to limit the relative movement of the cups, one of said members being slotted, a compression-screw passed through said slot and screwed into the other member, and a resilient resistance interposed between the head of the screw and the contiguous face of the slotted member.

13. An articulating-plate comprising a pair of relatively-movable members, and resilient means for opposing frictional resistance to the movement of said members.

14. An articulating-plate bent back upon itself to form a plurality of mold-cups, and a flange or projection extending from one mold-cup and designed to abut against the plate.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

THEODORE FREDERICK DRISKILL,

Witnesses:

W. M. WELLS,  
W. T. SHELL.