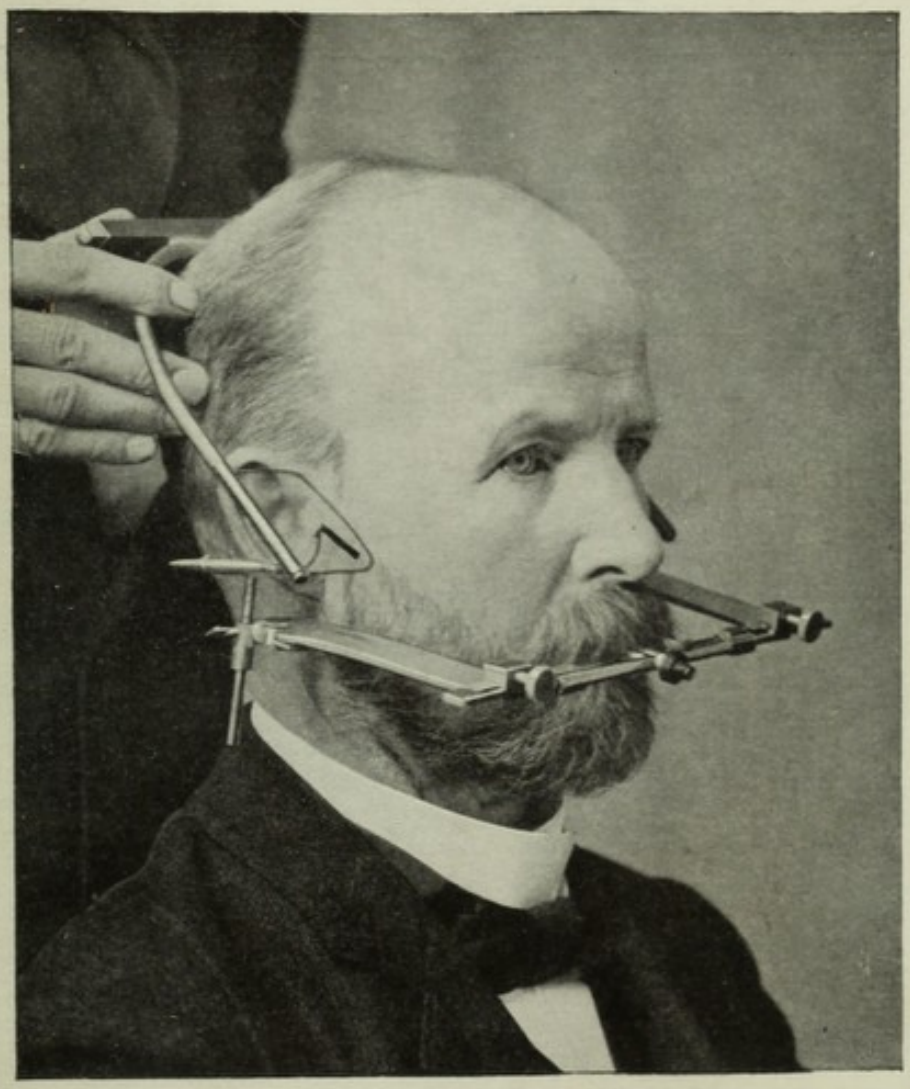
Directions for the manipulation of the Gysi adaptable articulator / by Alfred Gysi.

THE GYSI ADAPTABLE ARTICULATOR



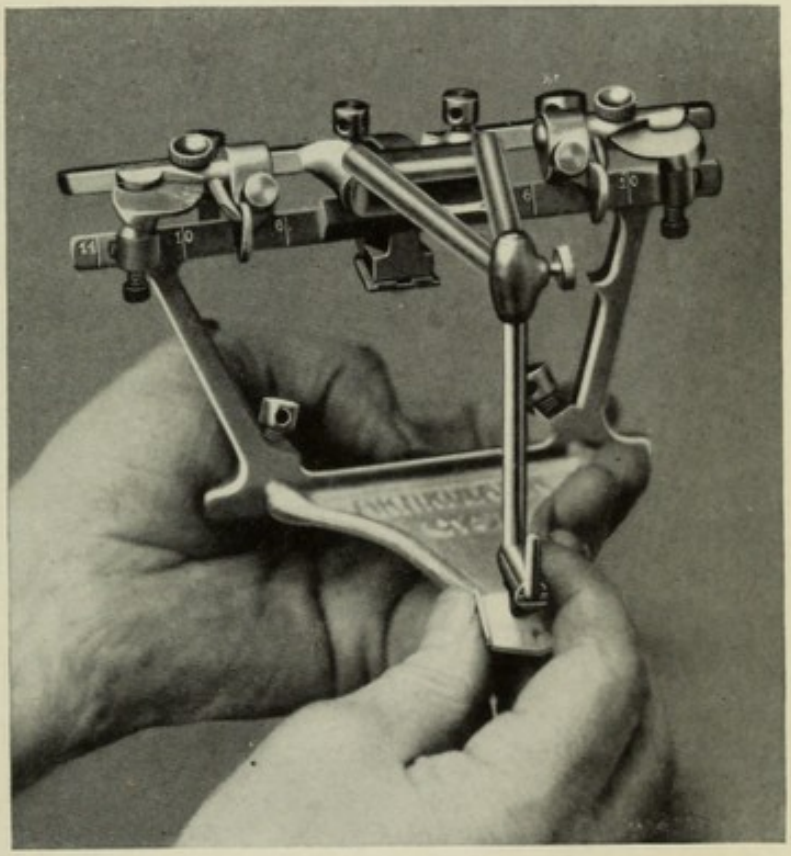
THE DENTISTS' SUPPLY COMPANY
CANDLER BUILDING, TIMES SQUARE
220 West 42nd Street NEW YORK, N. Y.

DIRECTIONS

FOR THE MANIPULATION OF

THE GYSI ADAPTABLE ARTICULATOR

By ALFRED GYSI, D.D.S., ZURICH, SWITZERLAND
Professor at The Dental School of the University of Zurich
(Literary Collaboration by George Wood Clapp, D.D.S.)



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The Dentists' Supply Company

CANDLER BUILDING, TIMES SQUARE

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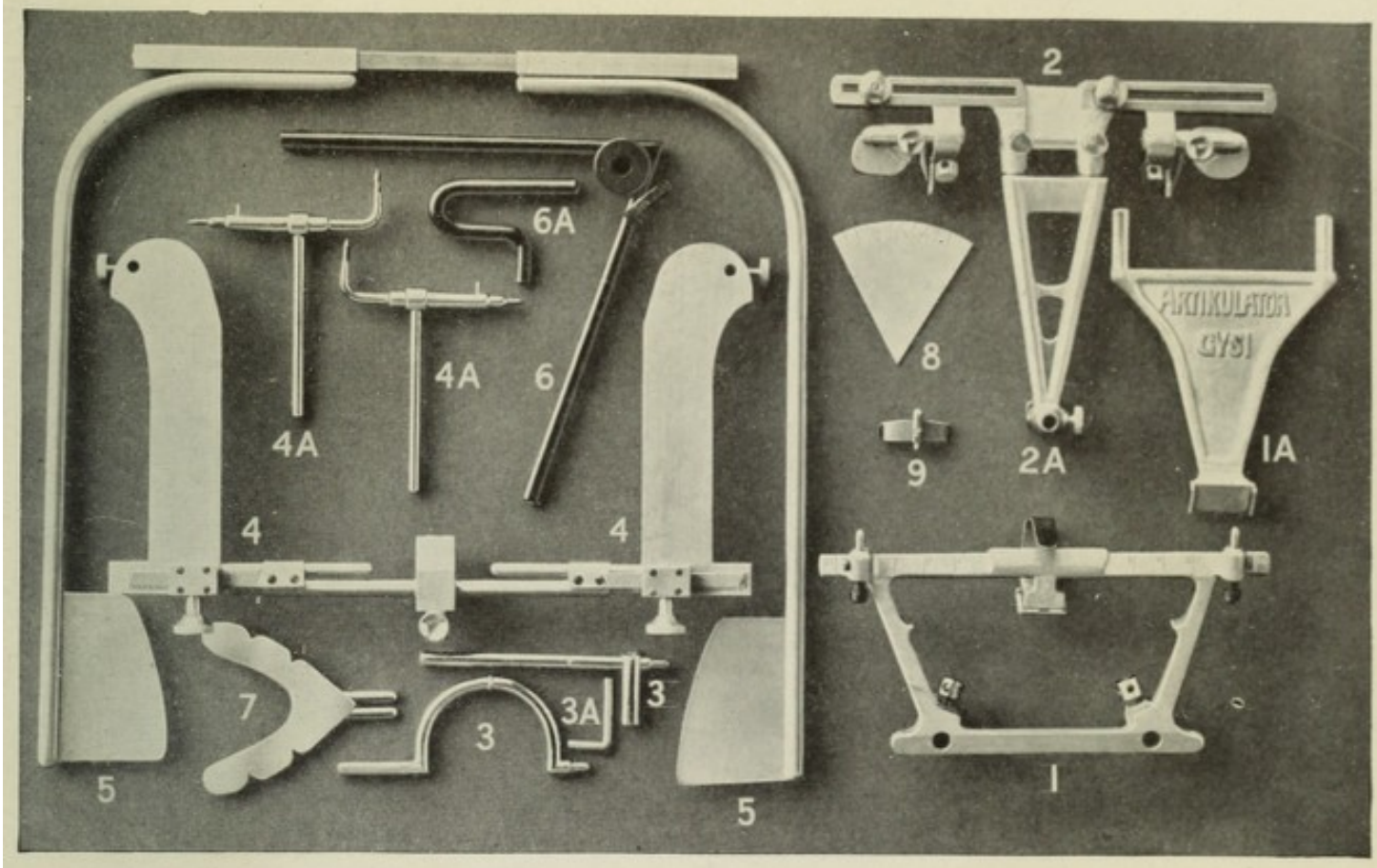
THE GYSI ADAPTABLE ARTICULATOR

PRICE, COMPLETE $50.00



The parts are as follows:

Nos. 1-2, upper and lower parts of articulator frame which carry the upper and lower model bows.

Nos. 1A and 2A, upper and lower model bows.

Nos. 3-3 Straight Incisor Guide Pin and Curved Incisor Guide Pin. The curved pin is used only when mounting models or setting anteriors.

No. 3A Small pin for all set screws.

Nos. 4-4 Framework of Condyle Path Register.

Nos. 4A-4A Pencil holders and pencils of Condyle Path Register.

Nos. 5-5 Lateral Path Register.

Nos. 6-6A Stand and gooseneck for holding Condyle Path Register and models.

No. 7 Horseshoe plate.

No. 8 Degree plate for measuring inclinations of paths.

No. 9 Incisor Path Register.

The Dentists' Supply Company

Sole Agents for Gysi Articulators in America

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DIRECTIONS FOR MANIPULATING THE GYSI ADAPTABLE ARTICULATOR

Professor Alfred Gysi, D. D. S., Zurich, Switzerland

These directions suppose that satisfactory impressions have been taken and good models poured. It will be advantageous to carve the rugae deeper in the upper impression. This will emphasize them in the model and will relieve them of pressure in the mouth.

Shaping The Base Plates

The base plate should be made of some stiff material, preferably a good base plate composition, which can be easily shaped while warm but which retains its form when cold. It should be trimmed to the area to be occupied by the denture. At the posterior margin, the upper trial plate should extend about 1m.m. posteriorly of the hard palate. This carries it slightly onto the tissues of the soft palate and permits these tissues to form a valve with the margin of the plate. It will be found advantageous to embed a wire, preferably about the size of an ordinary pencil lead in the upper trial plate, as shown in illustration No. 1. This prevents warping under the pressure to which it will be subjected.

Great care should be taken to adapt the base plate well to the model, especially about the emphasized rugae. If this is not done, the trial plate may be supported in the mouth by the rugae, which are soft and yielding. The bite will then be taken with the trial

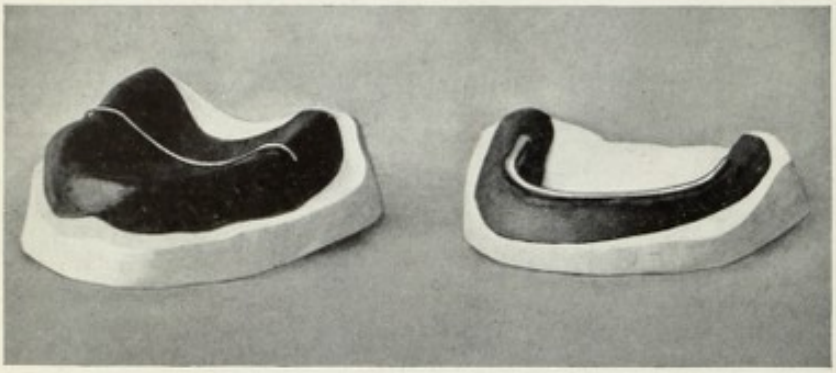
plate supported thus. When the base plate is returned to the model, it will rest on the hard plaster and a false relationship between model and base plate will be established, which may cause the ultimate failure of the denture.

The lower base plate should be made in the same manner. A wire may well be inserted all around the lingual aspect of this base plate to prevent warping.

Shaping The Trial Plates

The Trial Plates are the base plates with the wax ridges added.

A wax ridge is shaped on each base plate. This is done by heating a sheet of baseplate wax on one side till it is nearly ready to run, folding the heated side together lengthwise, and continuing to fold in this way until a roll has been made. This roll is placed along the alveolar ridge of the base plate where the teeth will come and is attached to the base plate by means of a hot spatula. Each wax



Ill. No. 1. The base plates, preferably of composition, are shaped over the models and trimmed as the plates will be. Each is stiffened with a wire to prevent warpage when trying in.

ridge should be made a little deeper vertically than is required in the finished piece. The upper wax ridge may be given a smooth occlusal surface by warming it slightly and laying on a sheet of baseplate wax which rests on a smooth surface, preferably glass. Any inequalities between the wax ridge and the sheet can be filled in with hot wax. The occlusal surface of the lower wax ridge need not be quite so smooth.

Before trying in the upper trial plate, a line is drawn on the side of the patient's face, from the lowest point of the external auditory meatus to the lowest point of the wing of the nose, as in illustration No. 2.

(From The Mechanical Side of Anatomical Articulation.)

Ill. No. 2. A line is drawn on the face from the lowest point of the external auditory meatus to the lowest point of the wing of the nose. This is generally accepted as parallel with the occlusal plane. The occlusal surfaces of the trial plates should be made parallel to it.

This line is parallel with the occlusal plane. It can usually be drawn with a soft lead pencil and a ruler and if proper explanation is made to the patient no objection is met. A silver table knife is within reach. The wax ridge on the right side of the upper trial plate is softened by heat and the plate placed in the mouth with the ridge soft. The blade of the table knife is laid along the softened

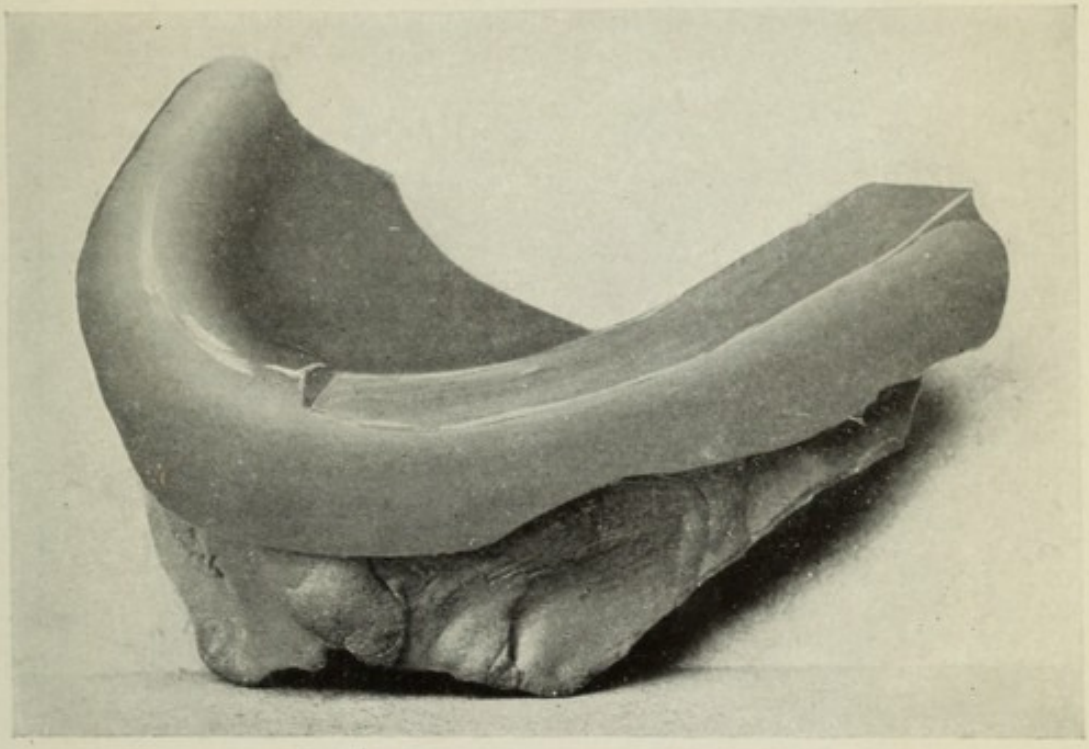
wax ridge and supported against the wax by the first and middle fingers, of the left hand, while the ring finger holds the trial plate firmly against the roof of the mouth, as in illustration No. 3.

(From The Mechanical Side of Anatomical Articulation.)

Ill. No. 3. The blade of a table knife is pressed against the softened ridge of the upper trial plate until it is parallel with the line on the side of the face.

The right hand grasps the handle of the knife. By pressure of the first and middle fingers, the blade of the knife is pressed against the wax in such manner that the portion of the knife projecting from the mouth becomes parallel with the line on the face, though, of course, below it. By this means the ridge on this side of the upper trial plate is made parallel with the line on the side of the face. The trial plate, when removed from the mouth, appears as in illustration No. 4.

The other side of the wax ridge of the upper trial plate is trimmed to the same level as the pressed side, the eye being sufficient guide for this action. The surface should be kept free from minor irregularities during this trimming.

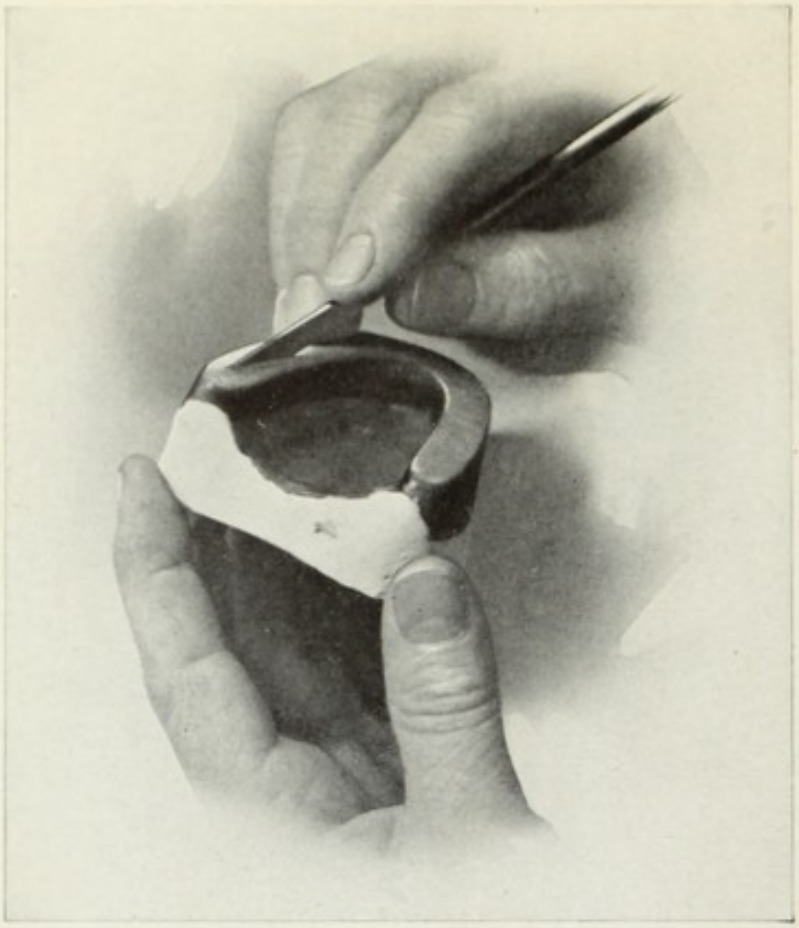


(From The Mechanical Side of Anatomical Articulation.)

Ill. No. 4. Enlarged view of inverted upper trial plate showing area flattened by pressure of the knife. The other half of the ridge should be trimmed to the same plane as the flattened portion.

The length of the upper trial plate may be determined at the same time that the right side is being pressed into shape. This length will vary with special cases, but the average case requires that the upper trial plate shall be about 1-1/2 m.m (1/16 inch) longer than the upper lip when relaxed. This permits the upper teeth to show properly and to give to the edge of the lower lip the proper outward turn. The length can be established by stopping the upward pressure on the knife blade when it reaches this point.

The upper trial plate is returned to the mouth after the unpressed side has been properly trimmed. The ridge of the lower trial plate is now softened throughout its entire length.

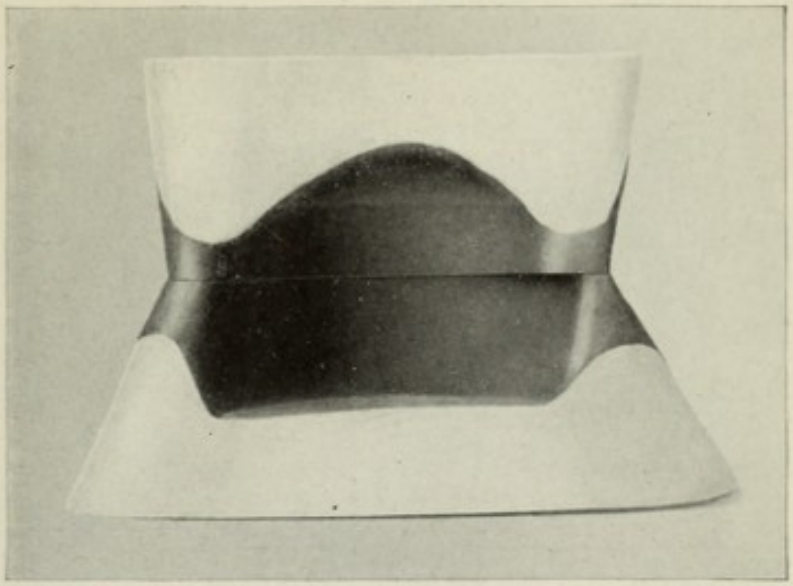


Ill. No. 5. Soften the wax ridge by thrusting the warm spatula into the surface of the ridge without touching the lingual or buccal margin. This heats the wax deeply enough to keep it soft until the trial plate can be put into the mouth and manipulated.

The lower trial plate is put into the mouth while the ridge is still soft and the patient is directed to close the jaws together so that the upper wax ridge may press the lower into shape. The formations of the wax ridge and the manner of closure demand further attention.

Proper results in the manipulation of the trial plates can be secured only if the wax ridges of both trial plates are so shaped that they meet properly all the way around from heel to heel. They may be partly shaped to this end on the base plates by trying one above the other with the median lines of the models in proper relations. When the upper has been trimmed, the lower may be tried into the mouth before it is softened to see if one ridge is just above the other. The patient should not be allowed to make any pressure of one trial plate on the other until the ridges are so shaped as to take the full pressure on both sides. Many a denture

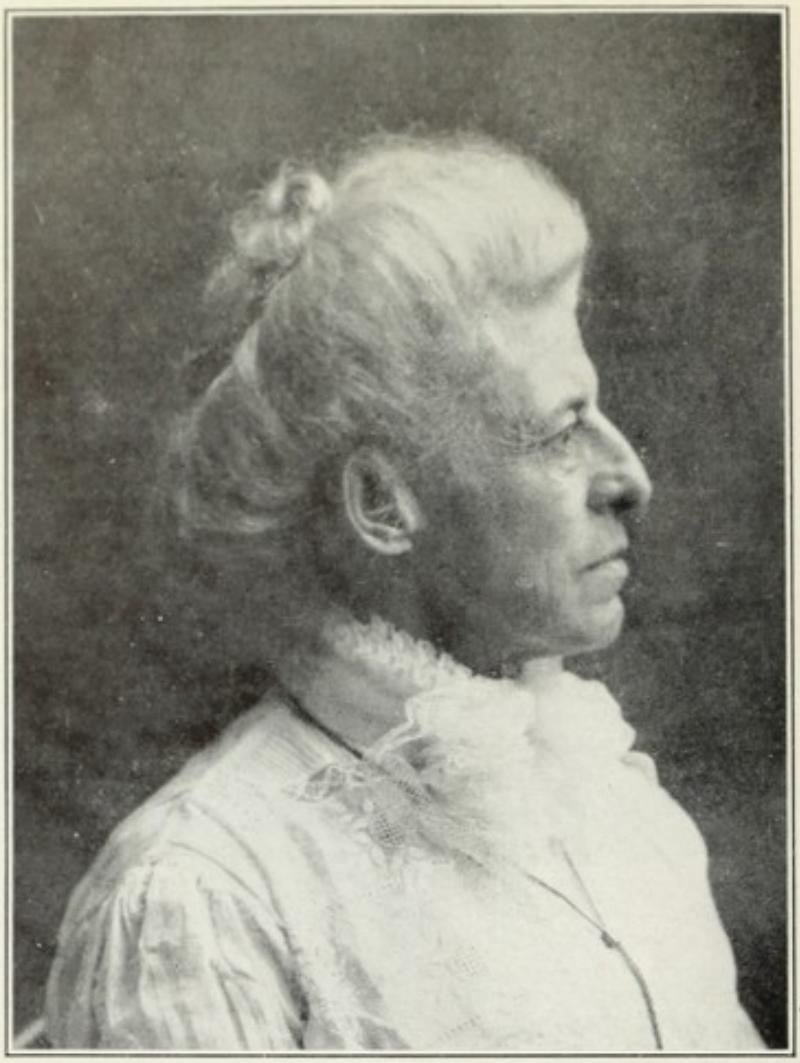
has been unsuccessful because the wax ridges took the pressure unevenly and the thin ridge of tissue in the front of the mouth is unduly compressed during bite taking.



Ill. No. 6. It is important that the trial plates be so formed as to take the pressure evenly at all parts. The lower trial plate here shown is improperly formed on one side and will not take pressure evenly. This uneven pressure may so derange the compression of the tissues that the dentures will be unsuccessful in service.

It will not stay compressed under the dentures and it established relations of one denture with the other which the dentist never intended and which defeat the object of their use.

The occlusal surface of the lower wax rim is now softened by heat, the trial plate quickly replaced in the mouth, and the upper closed down upon it. The pressure of the upper on the lower should be continued until the jaws come close enough together so that the lips touch lightly without effort, as in illustration No. 7. The lower may then be trimmed free of excess wax. The trial plates are then of the right combined heights. It should be noted, upon removing the trial plates, whether the pressure is alike on both sides of the lower. Occasionally a lower trial plate will be tilted up on one side, which leads to disaster with the finished dentures.



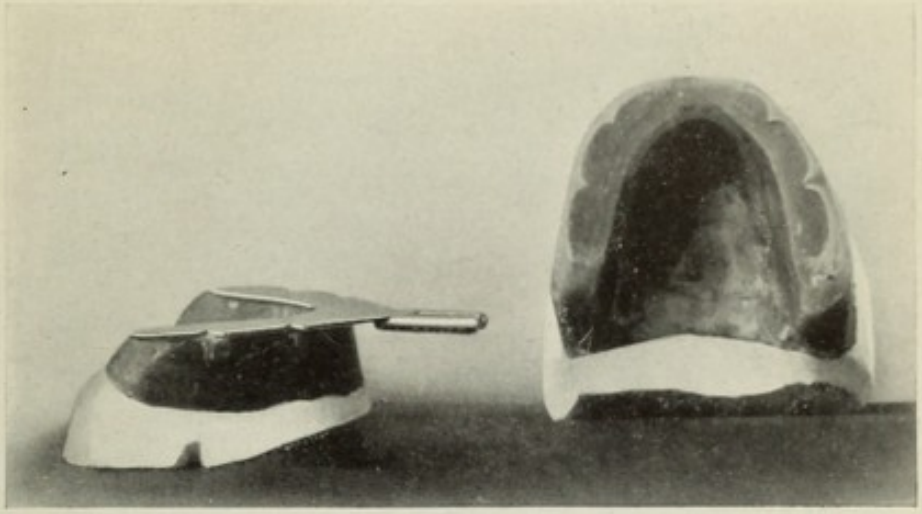
(From The Mechanical Side of Anatomical Articulation.)

Ill. No. 7. Patient with trial plates in position. The labial ends of the alæ and septum are pushed up to place, vivifying the expression. The lips are built out in harmony with the general facial contour. Note the animated and vigorous expression.

Mounting The Horseshoe Plate

The trial plates are removed from the mouth and the Horseshoe Plate mounted on the occlusal surface of the lower, with the two rods projecting directly forward, one on either side of the median line. The lower trial plate, with the Horseshoe Plate in position, is replaced in the mouth, the surface of the upper trial plate is softened by warming, it is quickly placed in the mouth and the jaws pressed together enough to shorten the upper trial plate a distance equal to the thickness of the Horseshoe Plate. Care should be taken to see that the pressure of the Horseshoe Plate is equal throughout the area of both sides of the wax ridge of the up-

per trial plate. When even pressure all around has been established, the occlusal surface of the upper trial plate should be

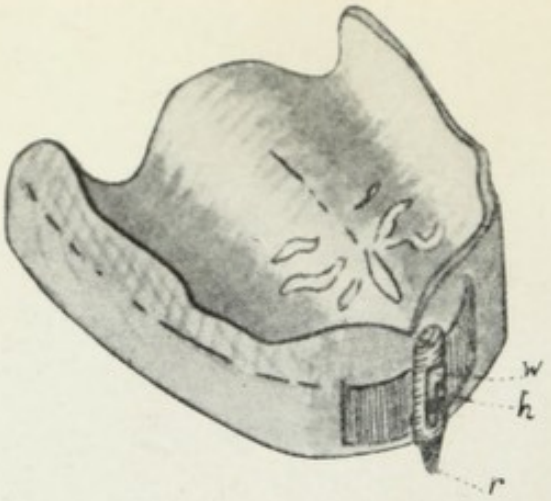


Ill. No. 8. On the left, the lower trial plate with the Horseshoe Plate properly mounted. On the right, the upper trial plate which has been pressed down upon the Horseshoe Plate and built up in places and pressed down again until the pressure is even all around. It is important to have this pressure even. Before recording the condyle paths the festoons made by the Horseshoe Plate must be trimmed away, leaving a plane surface. A little vaseline is applied over the surface of the Horseshoe Plate.

trimmed free of the little festoons formed by the margins of the plate. This will permit the upper trial plate to slide smoothly on the Horseshoe Plate while records are being made.

Mounting The Incisor Path Register

The Incisor Path Register is mounted on the labial surface of the upper trial plate with the registering point in the median line. It is intended that when the trial plates are in the mouth and the steel point of the Incisor Path Register is all the way down, it shall trace on the anterior portion of the Horseshoe Plate the movements of the forward point of Bonwill's triangle during lateral movements of the mandible. The point should come over the median line of the Horseshoe Plate. The Register should be high enough above the labio-incisal angle of the upper trial plate, so that the dentist can plainly see the registering point and the pattern it traces. The registering point is now pushed all the way up and secured



(From The Dental Cosmos.)

Ill. No. 9. The Incisor Path Register is here shown in position on the upper trial plate, "r" is the recording point, "h" the little handle by which the point may be raised, and "w" the little slot in which the handle may be locked.

Note especially that the Incisor Guide is so mounted that the point, when released, projects half its length below the upper trial plate. This maintains pressure on the Horseshoe Plate and permits watching the pattern traced in the wax.

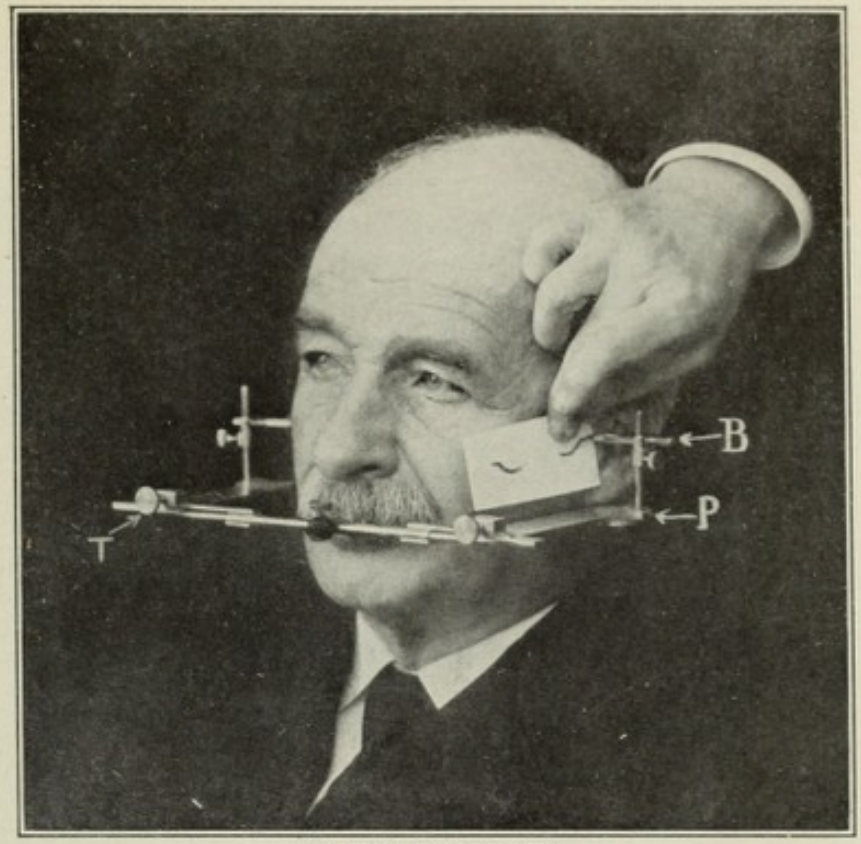
there by the little pin which turns in the horizontal slot. It is sometimes necessary to cut back the labial surface of the upper trial plate to make the registering point come at the proper location on the Horseshoe Plate. If this is done, the upper anteriors will then be set to the edge of the lower trial plate.

Blackening The Horseshoe Plate

The lower trial plate is now removed from the mouth. The anterior triangular section of the Horseshoe Plate is blackened to receive the tracings of the registering point of the Incisor Path Register. This blackening may be best accomplished by dipping a pledget of cotton in oil of cloves, lighting it and holding the anterior part of the plate in the smoke. Very little wax should then be melted over the smoke deposit to prevent its being rubbed off. The blackened area, at a later stage of the work is shown in illustration No. 17, page 18.

Attaching The Condyle Path Register

The trial plates are then replaced in the mouth and the Condyle Path Register is attached to the Horseshoe Plate by slipping the two holes in the centre block of the Register over the two projecting rods on the Horseshoe Plate.



(From The Dental Cosmos.)

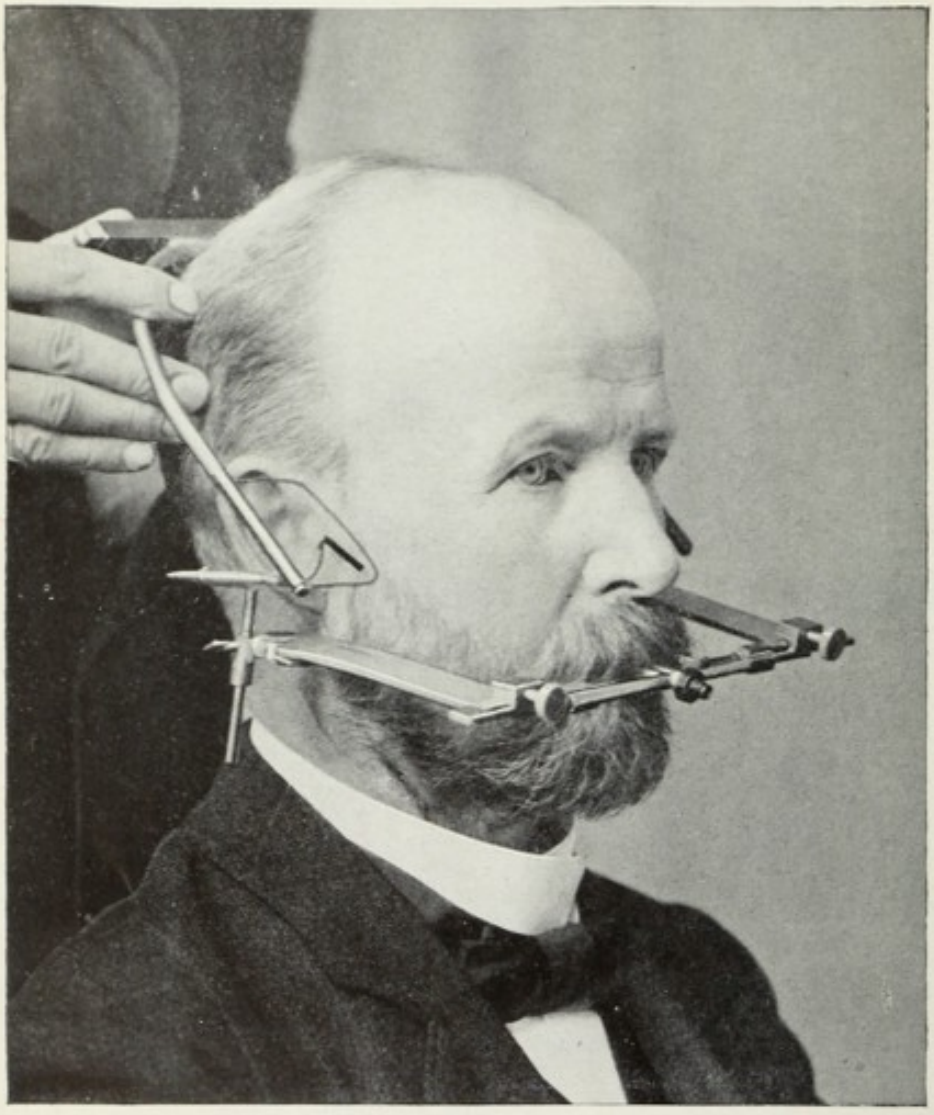
Ill. No. 10. With both trial plates and the Horseshoe Plate in the mouth, the Condyle Path Register is mounted by thrusting the projecting rods of the Horseshoe Plate into the two holes in the block in the center of the Register. The Register then takes the position here shown.

Ill. No. 11. The head of the Condyle is generally located about ½ inch from the tragus of the ear, on a line toward the outer corner of the eye.

The pencil holders are turned so that the ends of the vertical pencils come directly opposite the heads of the condyles. The condyle heads may sometimes be located by feeling. They are located about 10 m.m. in front of the tragus of the ear, on a line toward the outer canthus of the eye, as in illustration No. 11.

Registering The Lateral Movements of the Condyles

The Lateral Condyle Path Register is now placed about the head with the ground side of the glasses downward and in contact with the pencils. The Register is held at about the same downward and forward slope that the condyle path usually has. The glasses are pushed firmly inward against the side of the face, and the ends of the fingers are placed against the sides of the head as in illustration No. 12.



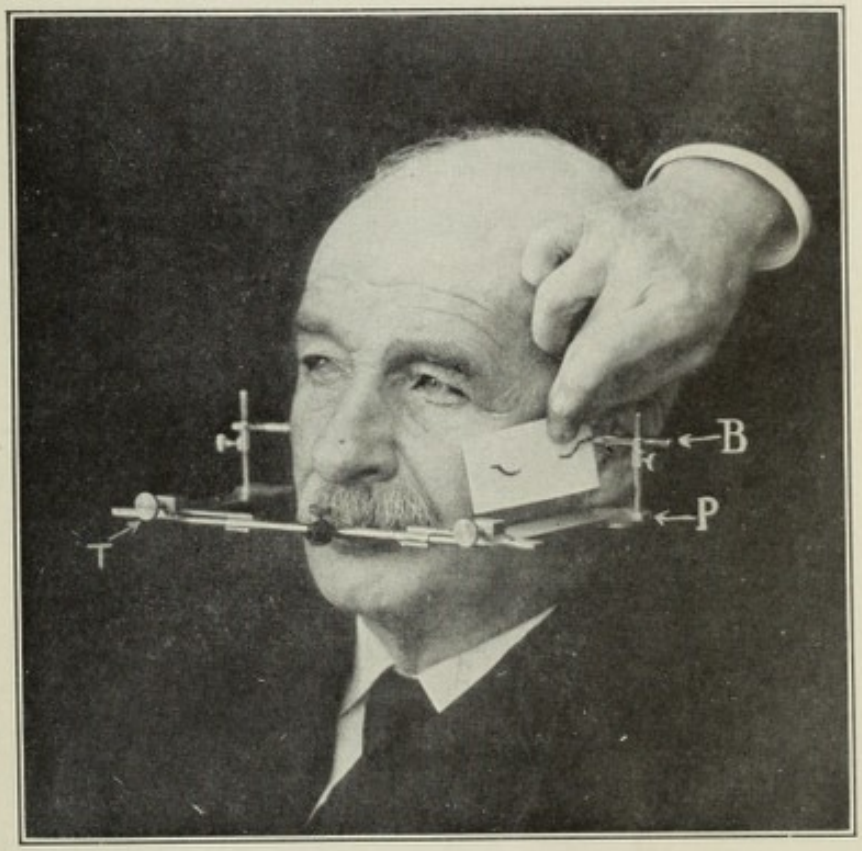
Ill. No. 12. Dr. Gysi with the Lateral Path Register held about his head. The vertical pencils have traced paths on the ground glass. The paths have been strengthened that they may be more easily seen.

By this means the Register is held immovable while the mandible moves. The patient is instructed to move the mandible to one side and then the other without separating the trial plates. This will be made easier if a little vaseline has been rubbed on the occlusal surfaces of the Horseshoe Plate.

As each condyle comes forward during these movements, the pencil opposite it will trace a definite line, as in illustration No. 12. But on the return of the condyle to the position of rest, the line is both different and less certain. If the glasses have been kept in contact with the pencils, a few movements of this kind will suffice to trace a legible path. The Lateral Path Register is then removed, the paths made by the condyles in moving forward are strengthened a little with a pencil, the resting point of the condyle is marked on each path, and the entire Lateral Register laid aside for future measurements of the inclinations of these paths.

Some patients have such poor control over the movements of the mandible, that the efforts to trace a path on the lateral path register, will be unsuccessful. They register such a multiplicity of lines and in such different directions, that no definite paths can be determined.

These conditions may result from the loss of the teeth on one side of the mouth long before they were lost on the other, or because all the teeth have been out so long that the articulation of



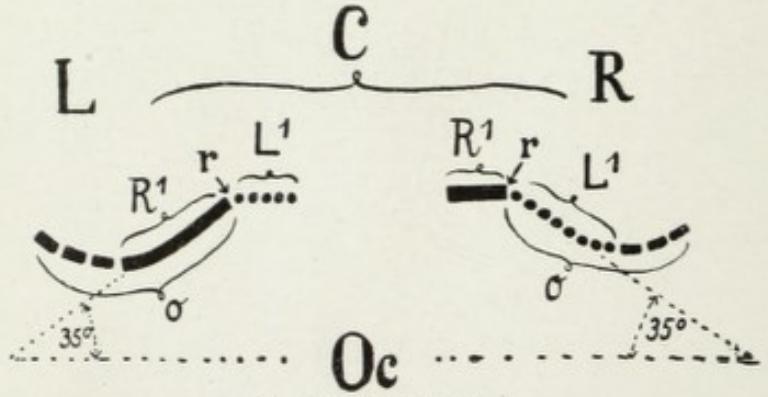
Ill. No. 13. The forward and downward movements of the condyles are recorded by the horizontal pencils of the Condyle Path Register. The ends of the pencils are placed opposite the condyle heads, a card is held against the face with its lower edge parallel with the broad plate of the Register, and the mandible is caused to exercise its different movements. The movements of one condyle at a time are thus recorded.

the condyle with the surface of the fossa becomes indefinite, or because patients have worn such poorly articulated artificial dentures that the natural definite movements have been destroyed and other definite movements have not been induced.

For such cases, it will be satisfactory if the use of the lateral path register is disregarded and the lateral inclination of the artificial glenoid fossa be set at 15°, as indicated by the markings on the horizontal plate.

The pencil holders are now turned so that the points of the horizontal pencils are directly opposite the heads of the condyles. A card having at least one straight side, is held against the face with the straight edge parallel with the broad horizontal plates of the Condyle Path Register, as in illustration No. 13.

The pencil holder is moved inward toward the card by means of the rack and pinion provided for that purpose, until the spring behind the pencil is about half compressed. The patient is then instructed to make opening and closing or lateral movements. During its forward and downward movement, the condyle will trace a fairly definite path, but on its return movements it may wander



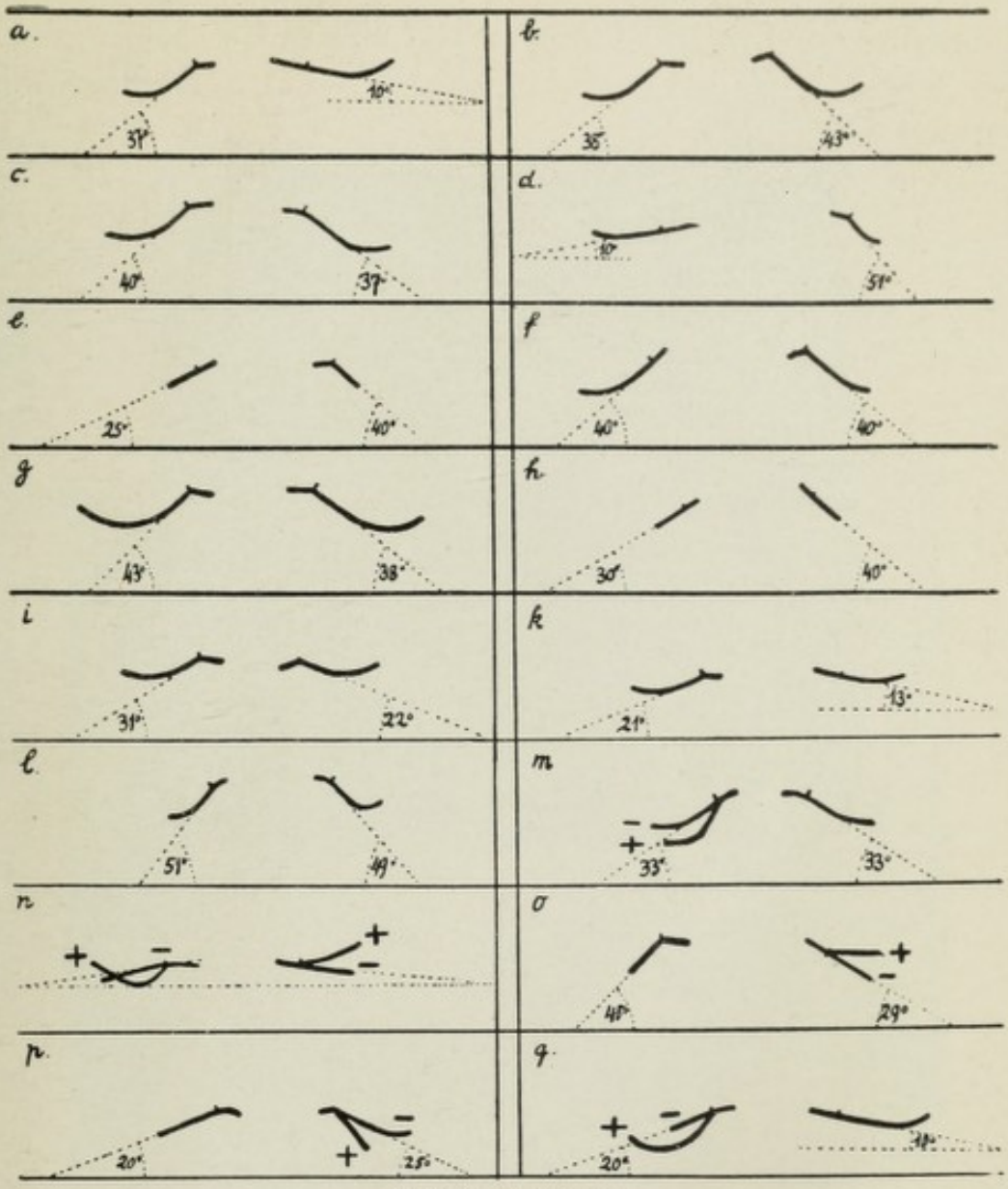
(From The Dental Cosmos.)

Ill. No. 14. Analysis of right and left condyle paths as secured by the method shown in Fig. 13. *C*, Condyle path. *L*, Left. *R*, Right. *Oc*, Plane of occlusion. 35°, Angle of middle part of path to plane of occlusion. *r*, Resting position of condyle. R^1, Path of condyle in a right lateral movement. L^1, The same in a left lateral movement. *o*, Forward bite or wide opening and closing movement.

over several indefinite courses. When the record made by the forward movement is sufficiently legible, the card may be removed, the path slightly strengthened by a pencil mark, and the resting point of the condyle marked. The card should now be held against the other side of the face, in the same way, and the tracing made on the same side.

The form of a typical condyle path is shown in illustration No. 14.

The resting point of the condyle, and the working part of the path are there clearly indicated. The card should now be laid aside for future use.



(From The Dental Cosmos.)

Ill. No. 15. Typical Condyle Paths. The paths "a" to "i" inclusive show differences in form and slant of the right and left paths in the same patient.

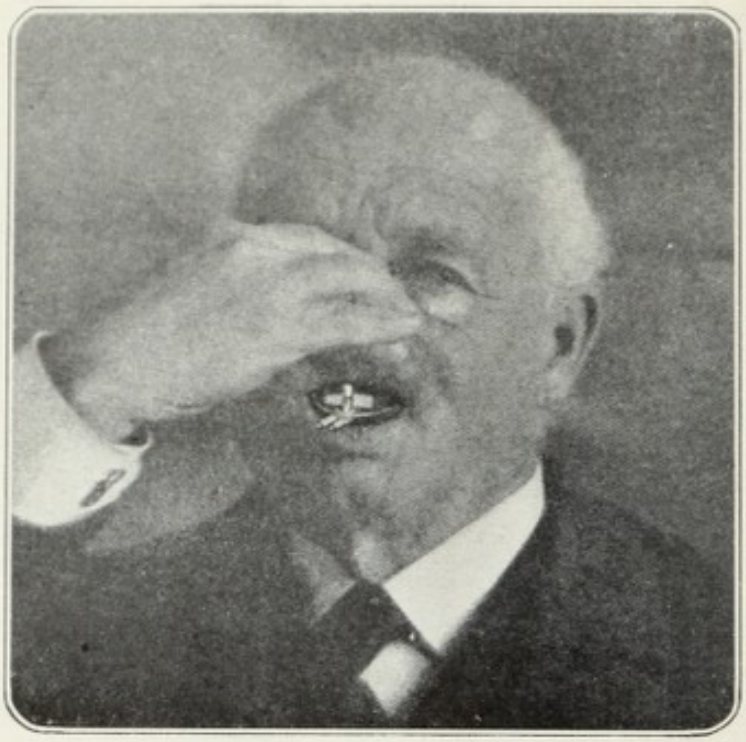
The paths "m" to "q" show that other differences in form or slant may occur between the path of the opening movement and the path of the lateral movement of the mandible.

The path of the lateral movement alone has value in the articulation of artificial teeth.

The Condyle Path Register may now be removed from the Horseshoe Plate. Care must be taken that the positions of the pencil holders are not in the least altered.

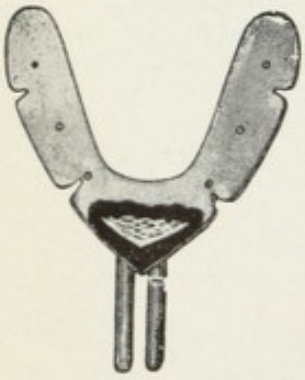
Using The Incisor Path Register

All this time the registering point in the Incisor Path Register has been held up away from the Horseshoe Plate. It is now released and allowed to come into contact with the blackened wax.



(From The Dental Cosmos.)

Ill. No. 16. The Incisor Path Guide registering on the blackened area of the Horseshoe Plate. The Guide must be mounted high enough above the plate so that the pattern can be clearly seen.



(From The Dental Cosmos.)

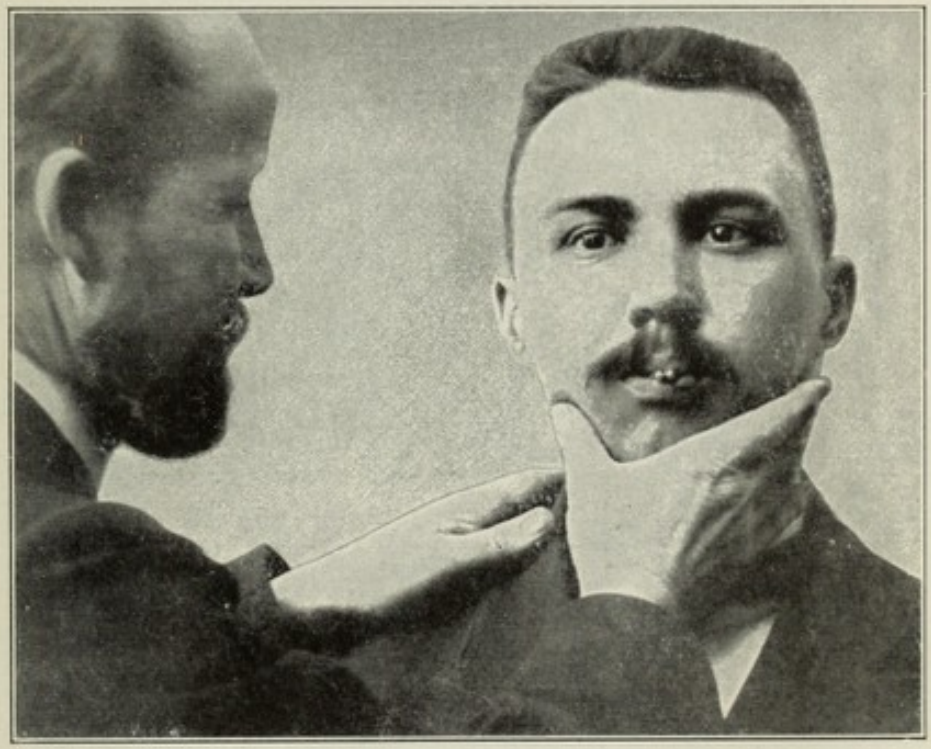
Ill. No. 17. A pattern traced by the Incisor Path Register. A very valuable function of this pattern is to indicate whether the patient is "biting forward". So long as the patient "bites forward," the front angle of the pattern will not be sharp.

The patient is instructed to move the mandible from side to side with the trial plates in contact. The registering point will trace a pattern in the wax. This pattern should have a sharp point, in front

as in illustration No. 17. If, however, the mandible is being held forward by the patient, the anterior part of the pattern in the wax will not present a sharp point.

The patient should be kept at this exercise until the mandible has gone back to a position of rest and the anterior point of the pattern is sharp.

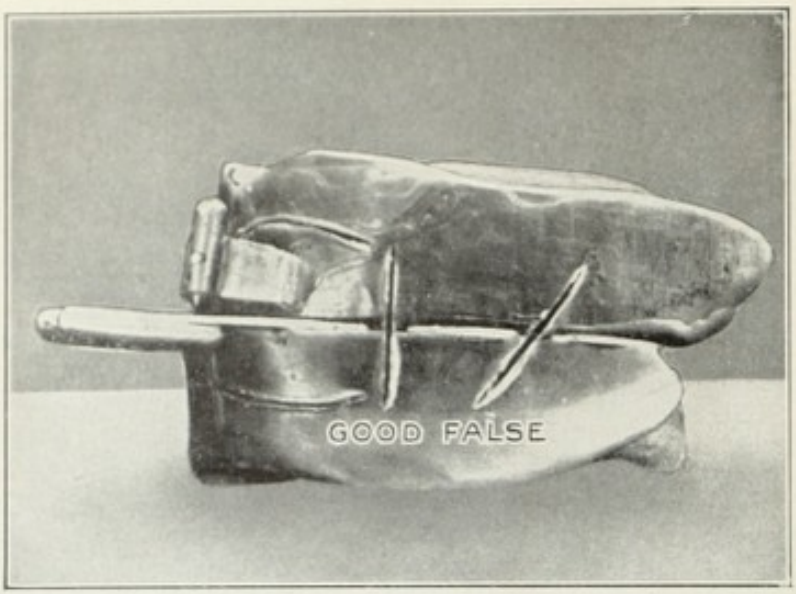
When this pattern is satisfactorily traced, the vaseline may be rubbed from the trial plates and the bite may be taken. The following method will help. The thumb and middle finger are placed along the margin of the lower jaw with their ends near the angles. This brings the root of the forefinger opposite the chin.



Ill. No. 18. A method of inducing the patient to bite normally, which the writer finds useful. It is described in the text.

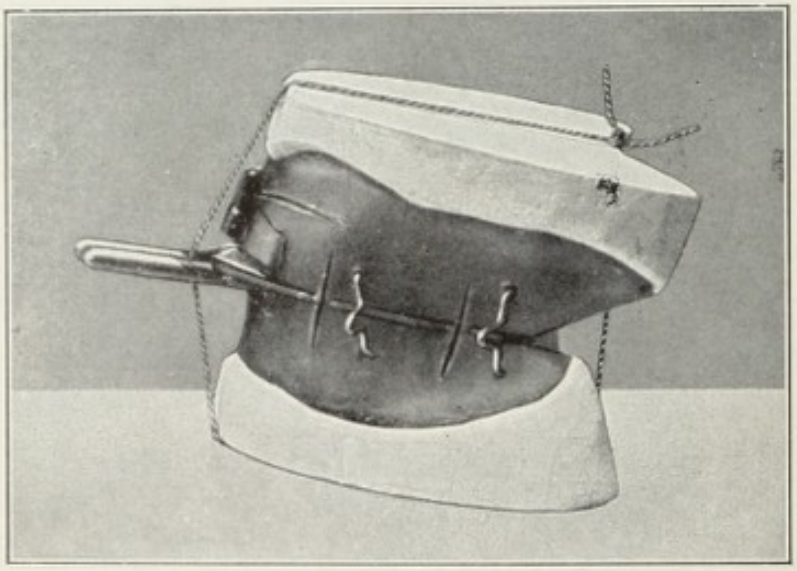
This part of the forefinger is now lightly pressed against the chin and the patient told to close the jaw. Never tell a patient to bite: that suggests thrusting the jaw forward. When the jaw is closed with the registering point just in the sharp forward angle of the pattern in black wax on the Horseshoe Plate, it should be retained in that position. With a right angled excavator reach into

the mouth and make several marks across from one trial plate to the other. Make them as vertical as possible and as nearly at right angles with the surface of the wax. Sloping marks lead to trouble.



Ill. No. 19. Upper and lower trial plates positioned by Incisor Guide Pin in pattern on Horseshoe Plate and marks on buccal surfaces. Correct vertical marks and incorrect sloping marks shown.

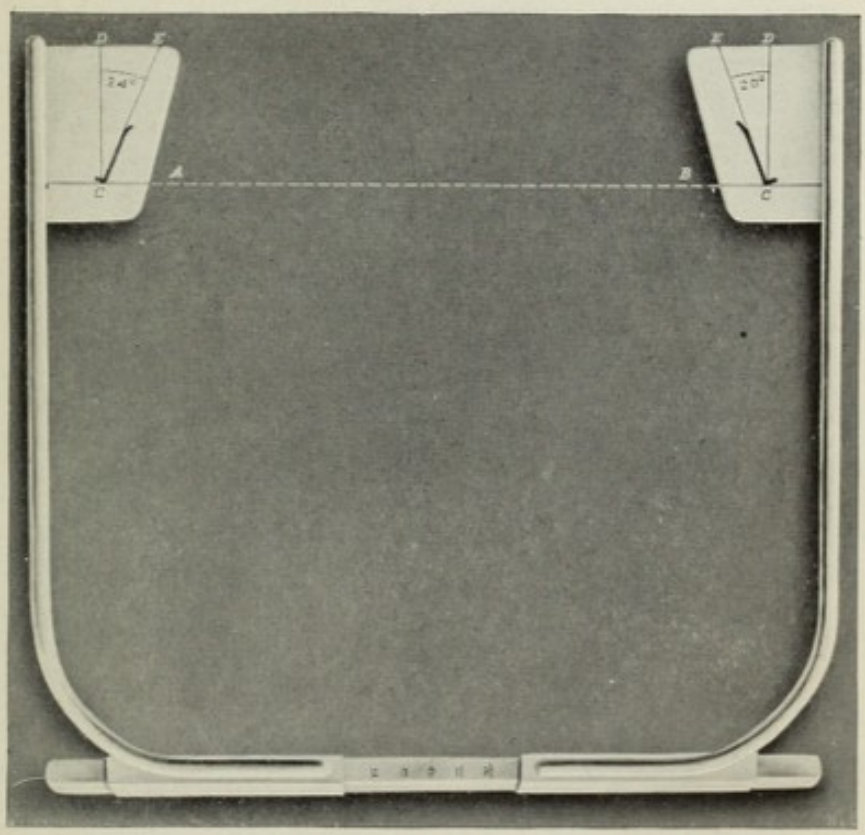
The use of four pointed staples to hold the trial plates together is excellent. The trial plates with the Horseshoe Plate and Incisor Path Register in place may now be taken from the mouth, fastened in proper relations, and laid aside until the articulator has been prepared for their reception.



Ill. No. 20. Upper and lower trial plates fastened together in proper relations. Models tied in position and soaked, ready for mounting in the Articulator.

Measuring The Lateral Paths in Degrees

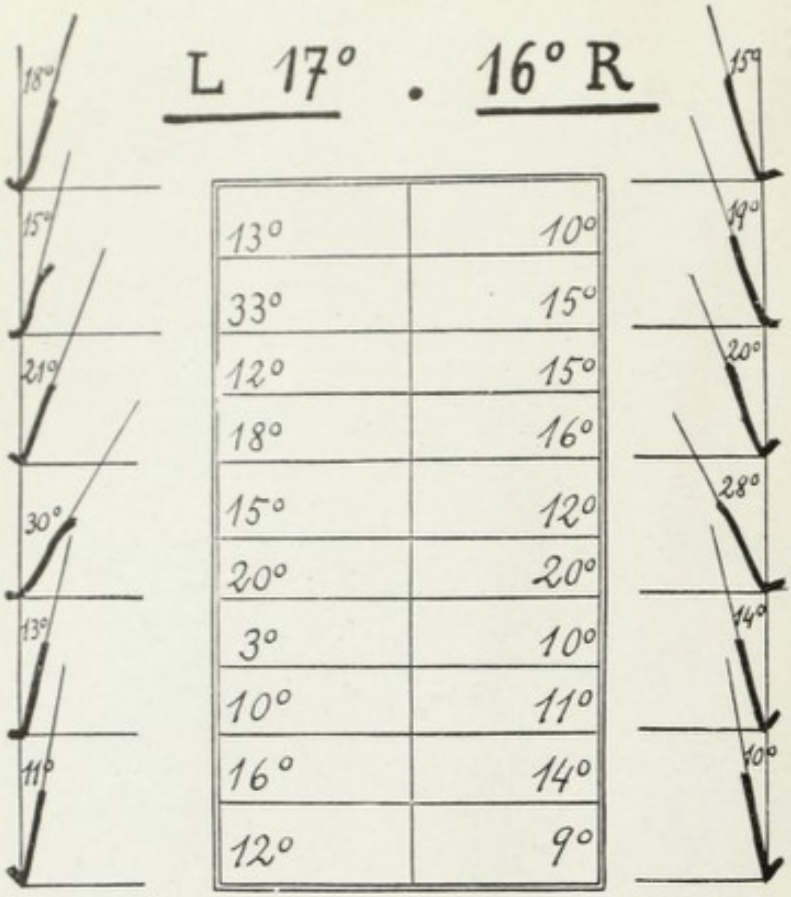
The Lateral Path Register is now laid on some surface which permits the tracings to be clearly seen. With a ruler, a straight line is drawn from the resting point of the condyle on one tracing to the resting point of the condyle on the other tracing. By means of a little square such as is used for mechanical drawing, a right angle is erected on this base line at each of these points. If now the little Degree Plate, which accompanies the articulator be placed with its sharp point at the resting place of the condyle and its o° side be parallel with the right angle erected on the base line, it requires only that the lateral path tracing should be prolonged by the use of a ruler or pencil, to measure its inclination from a straight line in degrees. The results of this method are shown in illustration No. 21.



Ill. No. 21. Lateral condyle paths recorded and strengthened. Line drawn from "resting point" in one path to "resting point" in the other, and perpendiculars erected at these points. Angles may be measured with the little plate used for measuring forward paths.

The tracings of the two lateral paths in the same mouth may show very wide variation in degrees. One may be much inclined and the other very little. If, however, the measurements have been properly taken, this need cause no uneasiness.

At the widest part of the articulator, there will be seen a small thumb screw on each side. If this be loosened, the plate which forms the glenoid fossae is released and may be turned horizontally at will. See illustration No. 23, page 23.



Ill. No. 22. Six pairs of condyles have their **inward lateral movements** recorded in the tracings. Ten other pairs have their degrees of inward lateral movement recorded in the central columns, but the tracings are not given. The average inward movement of these 16 pairs of condyles is 17° for the left condyle and 16° for the right.

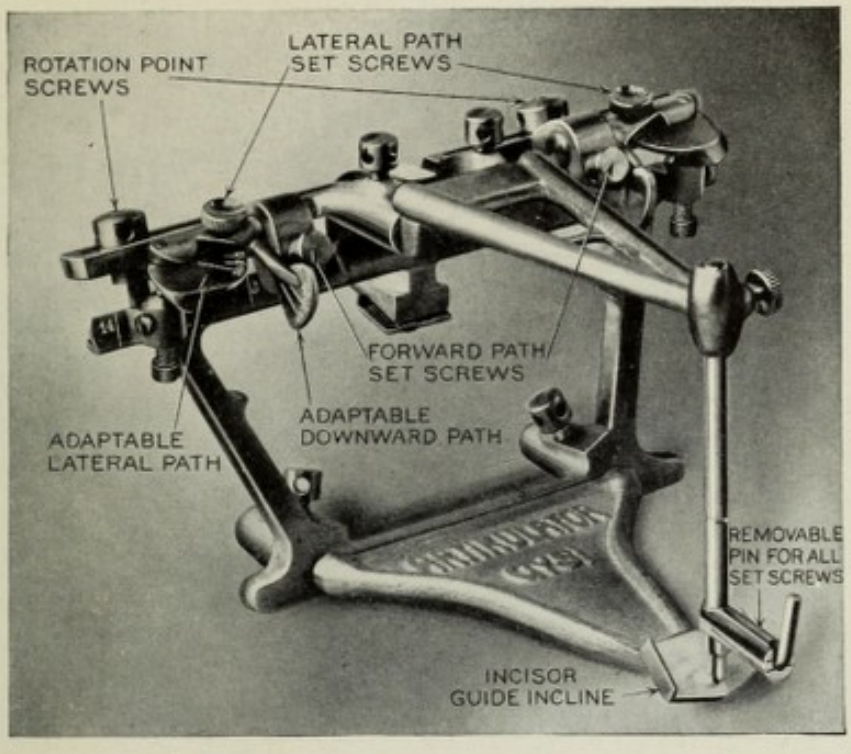
To get the proper effect, hold the bottom of this illustration nearly as high as the eye and look along the illustration from bottom to top.

The upper surface of this plate is marked in degrees, 1 for 10°, 2 for 20°, 3 for 30°. The plate on each side should be adapted to the degree determined by the Lateral Path Register. Use care to avoid mixing the sides.

Close beside the hand screws governing the horizontal movements of the glenoid fossa plate, will be seen a set screw having holes through its top.

The lower end of the Incisor Guide Pin fits the holes and the screw may be loosened by it. A slim metal pointer resting above a plate marked with degrees, will be seen, and when the screw is

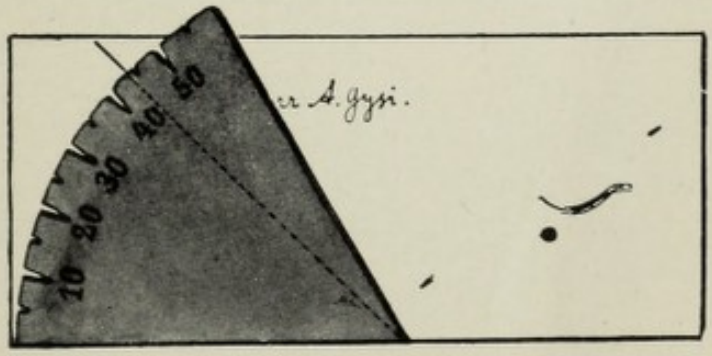
loosened, the pointer may be raised or lowered on the degree plate to correspond with the tracings on the card. The set screw is then tightened. This establishes the downward and forward inclination of the condyle path.



Ill. No. 23. The articulating frame without measuring instruments.

Measuring The Forward Paths In Degrees

The inclinations of the tracings of the downward and forward paths, on the card, may be measured by drawing a line through or parallel to the working part of each path and prolonging it to the lower margin of the card.



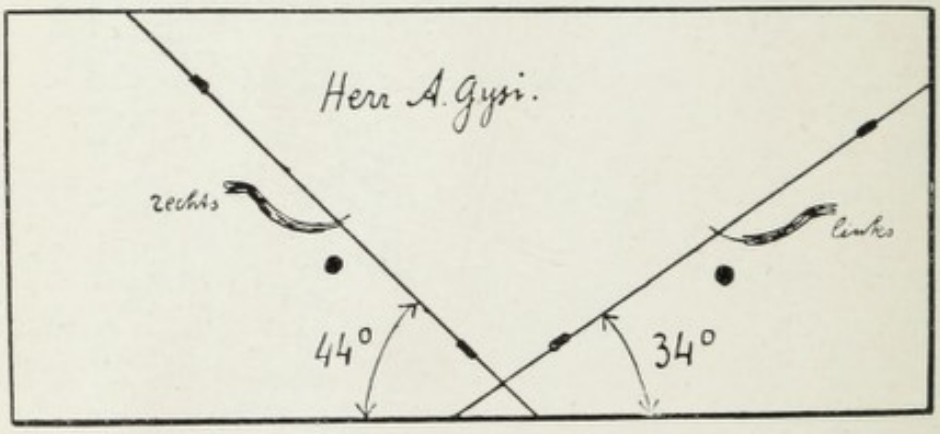
(From The Dental Cosmos.)

Ill. No. 24. The inclination of a condyle path measured by means of the Degree plate. The line parailel to the "working portion" of the path is here indicated by the dotted line. It inclines 43° to the occlusal plane.

It is necessary only to lay the Degree Plate with its point at the angle of the prolonged line and the card, and its o° margin with the margin of the card, to read the degree of inclination. This may be done with both tracings. They may be much alike or may vary greatly. If the records have been properly taken, the difference between the inclinations of the paths need cause no uneasiness.

The black iron stand and the goose neck designed to support the Condyle Path Register are now put together, the Condyle Path Register is placed on the goose neck by means of the single hole in the outer surface of the centre block, the upper and lower models are wet and placed in their respective trial plates and tied there by a string passed around all and the Horseshoe Plate, supporting both the trial plates and models is attached to the Condyle Path Register by thrusting the two projecting rods of the plate into the two holes on the inner side of the centre block of the Condyle Path Register.

The supporting frame is moved about until the models are above the lower model bow, the Incisor Path Register is in the



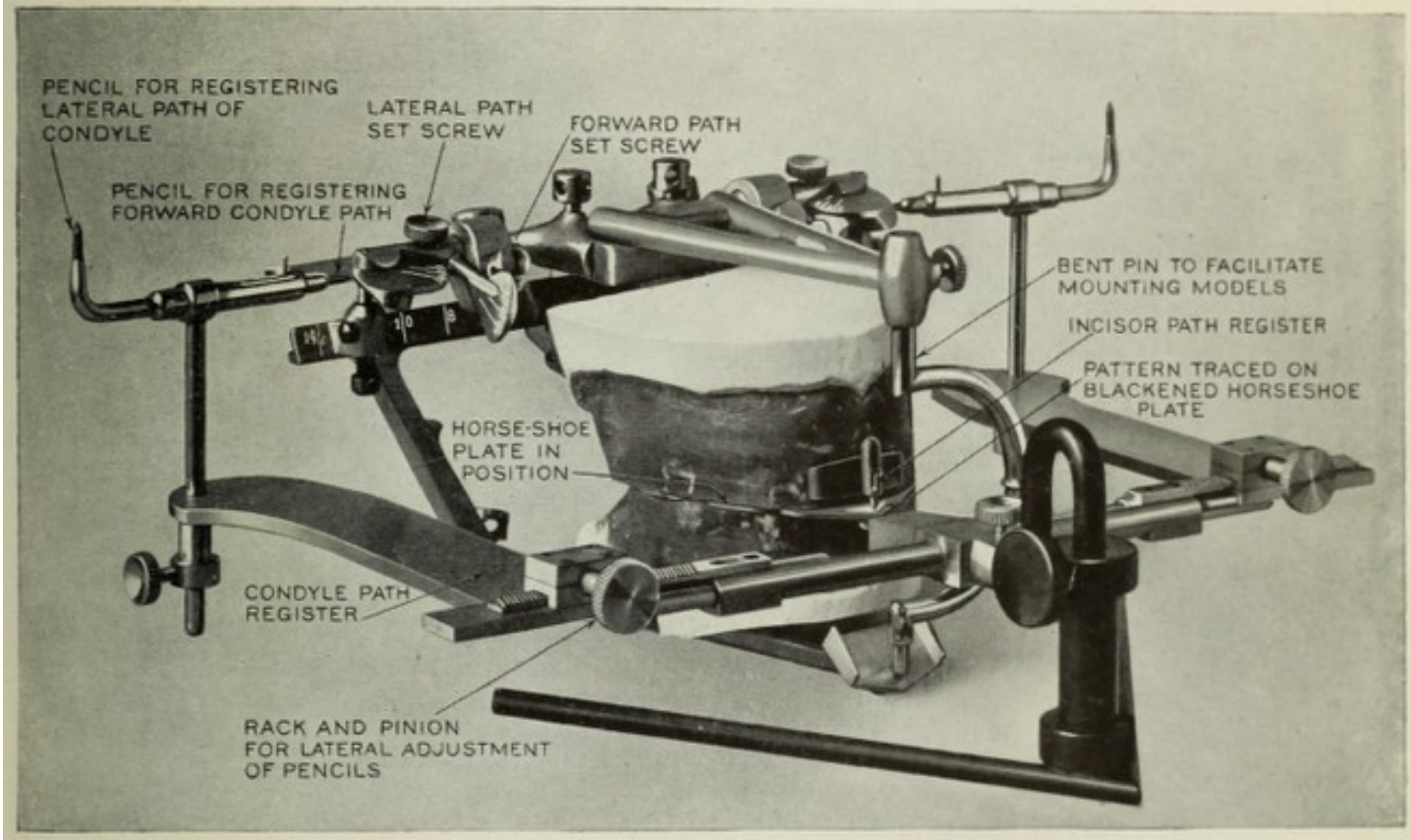
(From The Dental Cosmos.)

Ill. No. 25. Right and left condyle paths from one case and the lines parallel to the "working portions" of the paths.

median line, and the ends of the pencils are at the heads of the condyles. The pencil holders may be moved in and out by means of the rack and pinion to bring them into this relation, but the pencil holders must not be turned. When this position is attained, the set screw on the goose neck should be tightened, and the whole apparatus moved away from above the lower model bow. Plaster of paris may now be mixed and poured over the lower bow and the Condyle Path Register with its attachments moved back to the position from which it has just been taken. Plaster may now be

poured on the upper model and upper model bow in the usual manner. The curve in the Incisor Guide Pin passes around the ends of the Horseshoe Plate.

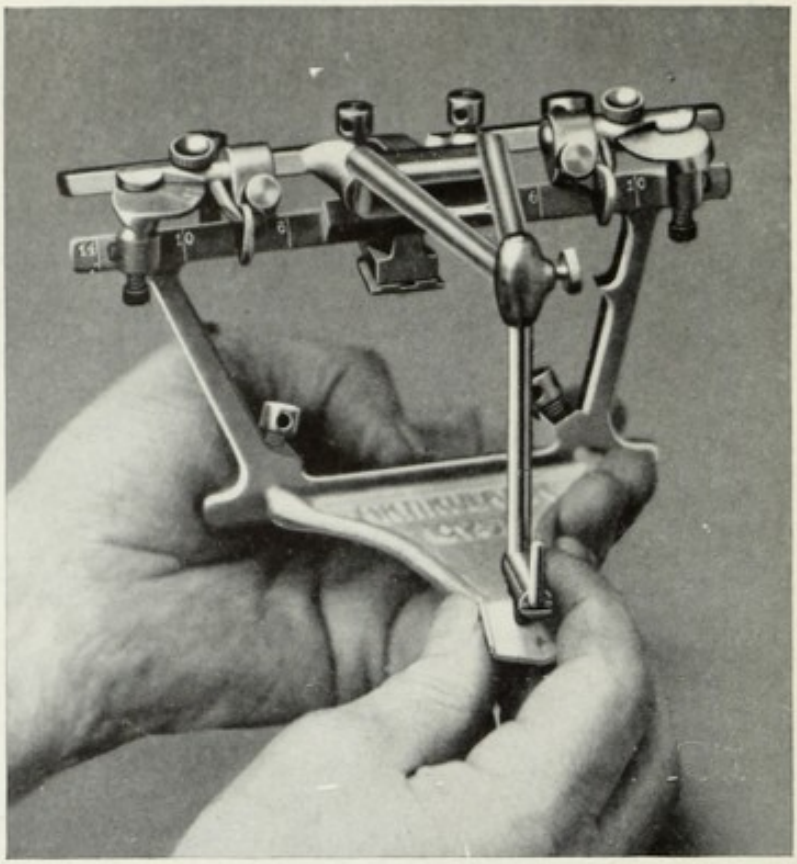
When the upper model is firmly attached, the string which bound the models together is cut and the upper trial plate is separated from the lower, with its attached Horseshoe Plate. The set screws of the Rotation Points are loosened, and the Rotation Points are pushed toward the median line. The registering point in The In-



Ill. No. 26. Mounting the trial plates and models by means of The Condyle Path Register, and the bent Incisor Guide Pin.

cisor Path Register is released and allowed to come again upon the Horseshoe Plate. The upper model bow is now moved laterally and it is noted how closely the registering point follows the pattern traced in the wax on the Horseshoe Plate. If it does not follow, the Rotation Point which is acting as a centre for that movement is moved outward until the registering point follows closely the outline of the pattern in the wax. It is locked in that position. The upper model bow is then moved to the other side and the other Rotation Point adjusted in the same way.

The Horseshoe Plate is now removed. A space will be left between the upper and lower trial plates by this removal. But if the Incisor Guide Pin was firmly locked in position, it will maintain the proper relations of the models. A drop of wax in the molar region



Ill. No. 27. The artificial mandible is now moved laterally to see if the registering point of the Incisor Path Register follows the outline of the pattern traced in the wax. It may be made to follow by moving the Rotation Points laterally. Lateral movements of the mandibles of the Gysi Adaptable Articulator should be secured in the manner shown here, pulling sideways and a little forward.

on each side keeps the trial plates apart. The upper teeth should be set against the lower plate. The teeth may now be articulated by the usual methods.

The pencils are fastened in the pencil holders with wax and may be removed by slightly warming the metal parts.

Succession Of Steps

I. Taking Bite.

1. Make trial plates. Base plates, wired, are shown in illustration No. 1.
2. Draw cheek line, Ill. No. 2.
3. Warm right hand ridge of upper trial plate.
4. Press right hand ridge of upper trial plate with table knife parallel with the cheek line, until it is 1½ m.m. below border of upper lip. Ill. Nos. 3 and 4.
5. Cut left side of upper trial plate outside the mouth to agree with right side.
6. Model fullness of lips and facial expression by adding or cutting away wax. Ill. No. 7.
7. Make upper wax border parallel with pupil lines.
8. Warm wax border of lower trial plate. Ill. No. 5.
9. Have patient bite trial plates together in the mouth until lips touch lightly.
10. Make sure that upper and lower trial plates sit snugly on the alveolar ridges.
11. Smooth off protruding wax borders (outside the mouth).
12. Cut median line of face in the wax of trial plates, also the smiling line (length of incisors) and corners of orifice of mouth.
13. Attach Horseshoe Plate to lower plate outside the mouth Ill. No. 8.
14. Warm upper wax border and have patient bite, in the mouth, on Horseshoe Plate and then level off festoons with knife. See right hand half, Ill. No. 8.

II. Recording Movements of Mandible.

1. Again put upper and lower trial plates into the mouth and attach large register to the horseshoe pattern. Ill. No. 10.
2. Place ends of *vertical pencils* opposite marks over heads of condyles, Ill. No. 10. Record *lateral movements* of mandible upon ground glass holder. Ill. No. 12.

3. Place ends of horizontal pencils opposite marks on face over heads of condyles. Fasten tight in these positions.
4. Mark on a visiting card the forward condyle paths in lateral or opening movements. Ill. No. 13.
5. Remove large register without disturbing pencils.
6. Fasten the Incisor Register to the upper trial plate. Ill. No. 9.
7. Blacken and wax front of horseshoe pattern.
8. Put upper and lower trial plates into the mouth and record lateral movement of region of incisor. Ill. No. 16.
9. Fix normal bite of lower mandible with pin of Incisor Register in pointed pattern, by means of incisions in the wax or by 4 pointed staples.
10. Dismiss patient after shade of teeth has been determined.

III. Measuring Recorded Movements of the Mandible.

1. Measure records made on the ground glass plates. Ill. No. 21.
2. Adjust fossae to reproduce the lateral movements.
3. Measure the records on the cardboard. Ill. No. 24.
4. Adjust glenoid fossae of articulator to reproduce forward and downward paths of condyles.

IV. Mounting Models on the Articulator.

1. Temporarily wax the plaster models to the trial plates, put a rubber band around all and with large register, Ill. No. 26, slide on articulator.
2. Trim plaster models vertically until Ill. No. 26 is possible.
3. Tie plaster models, trial plates, and horseshoe pattern firmly together with a cord. Ill. No. 19. Soak models in water, attach to Condyle Path Register.
4. Stand Articulator with curved Incisor Guide Pin, which must not protrude above the top of the opening, holding it on a glass slab, pour plaster on lower bow, and then put base, register, and models together in their proper places, as in Ill. No. 26, with the tips of horizontal pencils at the same level as the points of the condyle pins of the articulator.

V. Determining Position of the Rotation Points.

1. Remove Condyle Path Register and cut cords.
2. Liberate pin of Incisor Register so that it may follow the pattern in wax.
3. Place Rotation Points at outer ends of paths.
4. Make lateral movements of articulator and push Rotation Points inward until Incisor Register follows the outlines of the pointed arch in the blackened wax.
5. Fix the Rotation Points in position.

VI. Mounting of Teeth.

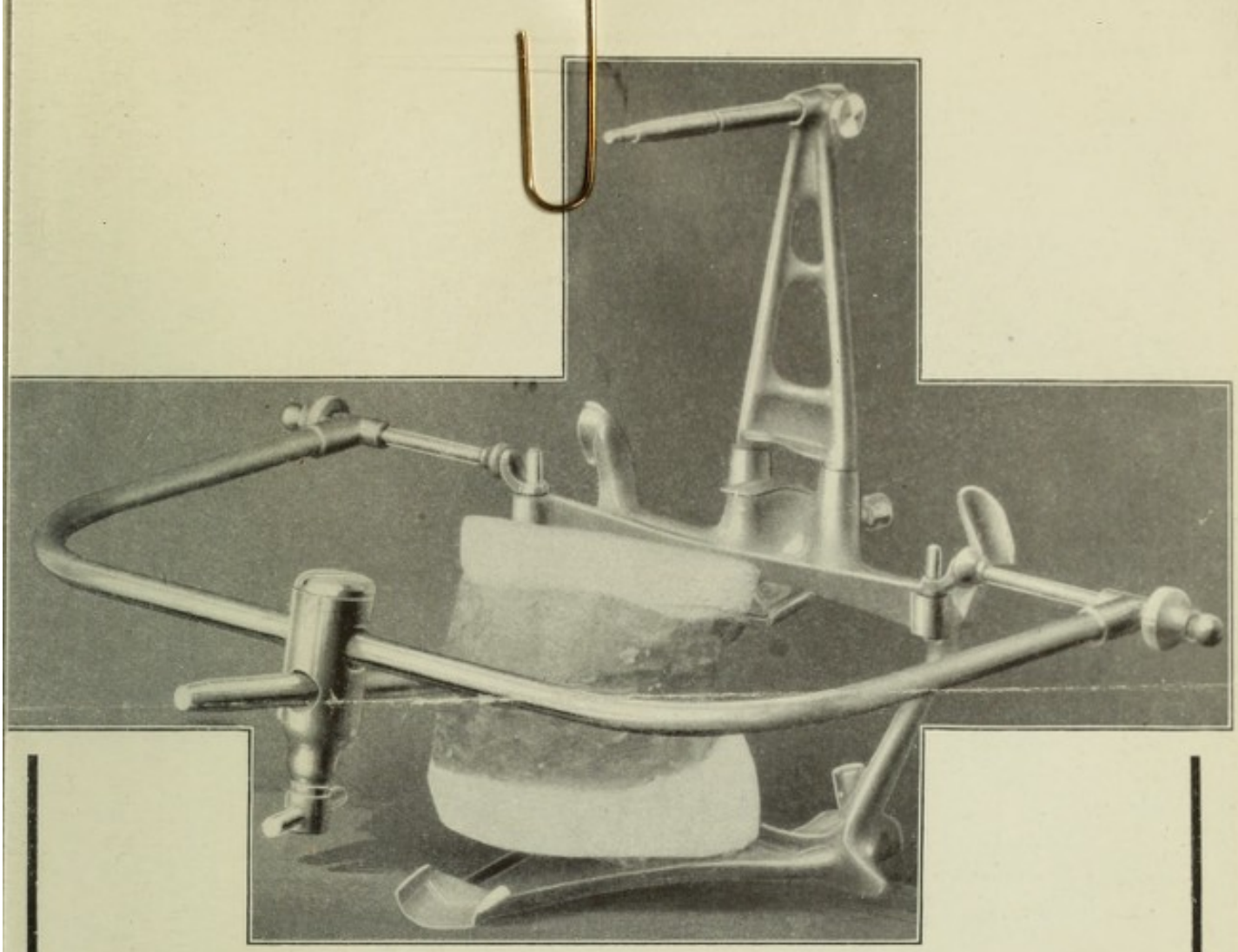
1. Remove Horseshoe Plate and replace its thickness by wax drops in the molar region.
2. Transfer median line, and length of wax border, and horizontal line to plaster model.
3. Cut away wax upper border on one side.
4. Begin at median line of upper and set one half the set. Wax teeth firmly in position. Cut away other half of upper border and set remaining uppers. Cut away half of lower wax border. Set lower first molar, lower second molar, second bicuspid, first bicuspid and cuspid. Do same on other side. Set lower anteriors for desired overbite and expression.

Determine final relations of the teeth by making lateral movements of the articulator in the manner shown in illustration No. 27, page 26.

Changing the Depth of Overbite.

If a somewhat more pronounced overbite of the incisors is to be obtained, wax a piece of sheet metal upon the Incisor Guide Incline, to make it steeper. With a very flat palate it will be well rather to reduce the inclination of this plane by waxing on pieces of sheet metal to be less steep than the plane is. In this way the overbite of the incisors will be less, and in consequence the upper plate be pushed less forward and the lower less backward.

In most cases the inclination of this sliding plane is to be left as it is on the articulator.



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