No. 760,943. PATENTED MAY 24, 1904.

E. P. WRIGHT.

DENTAL MANIKIN.

APPLICATION FILED AUG. 25, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

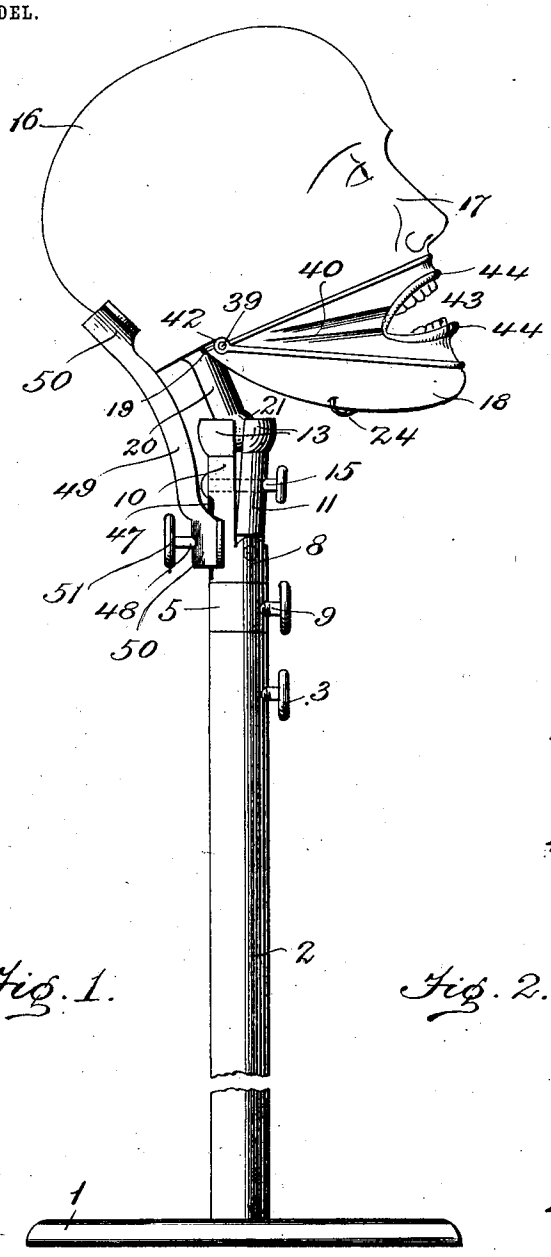

Fig. 1.

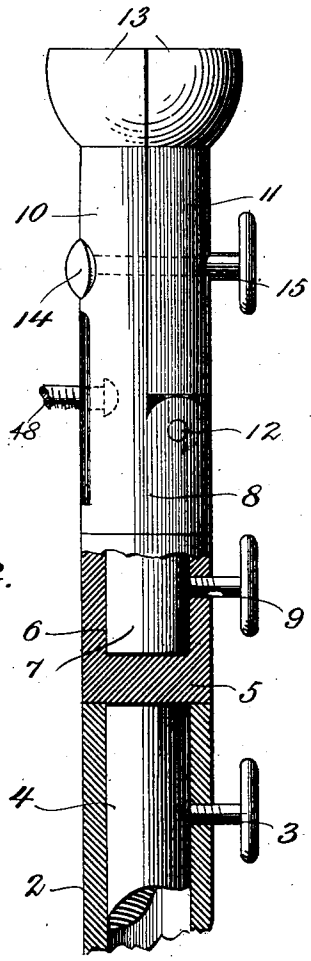

Fig. 2.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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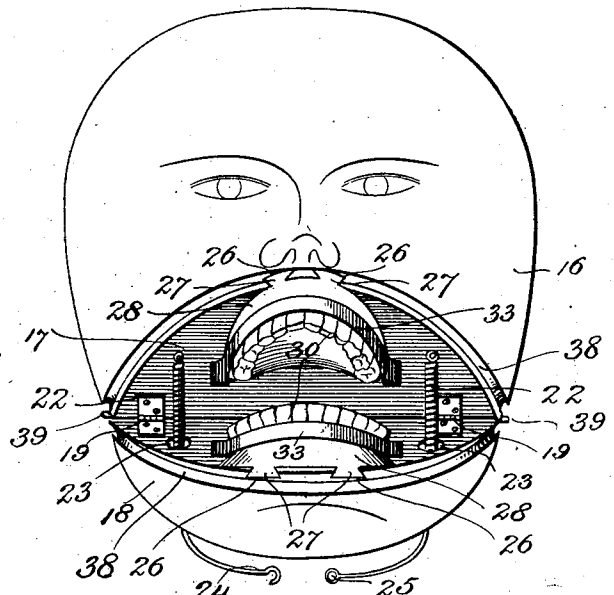
NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.



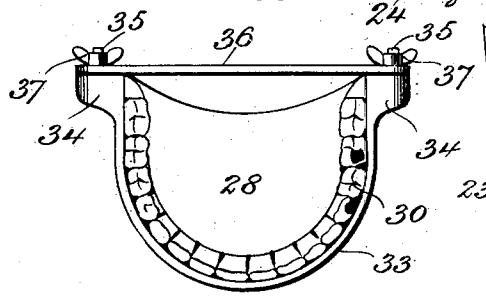


Fig. 4.

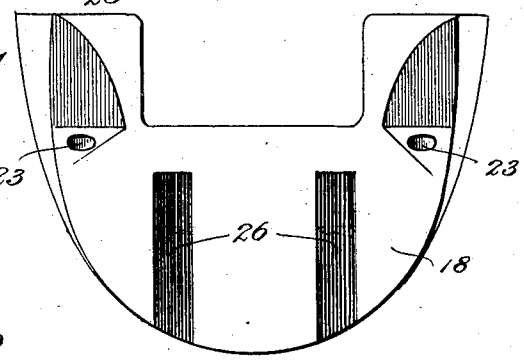


Fig. 5.

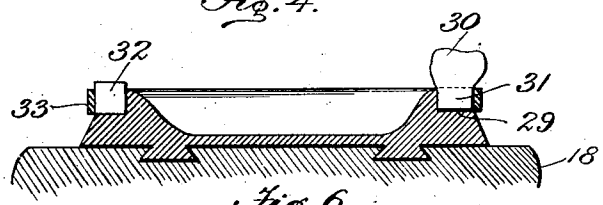


Fig. 6.

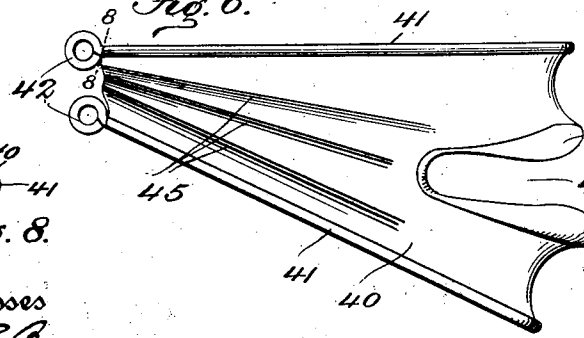


Fig. 7.

Fig. 8.

Witnesses
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No. 760,943. Patented May 24, 1904.

UNITED STATES PATENT OFFICE.

EDWIN P. WRIGHT, OF RICHMOND, VIRGINIA.

DENTAL MANIKIN.

SPECIFICATION forming part of Letters Patent No. 760,943, dated May 24, 1904.

Application filed August 25, 1903. Serial No. 170,706. (No model.)

To all whom it may concern:

Be it known that I, EDWIN P. WRIGHT, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented a Dental Manikin, of which the following is a specification.

This invention relates to educational appliances, and particularly to manikins, having reference to certain important improvements on the construction of manikin forming the subject-matter of Letters Patent granted me May 19, 1903, No. 728,818.

The objects of the present invention are to improve certain details of construction hereinafter apparent and which improvements will be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a side view of a manikin embodying my improvements. Fig. 2 is a similar detail of the upper end of the manikin-support. Fig. 3 is a front elevation in detail of the manikin, the jaws open. Fig. 4 is a detail in plan of a tooth holder or plate. Fig. 5 is a similar view of the lower jaw with tooth holder or plate removed. Fig. 6 is a cross-section of lower jaw and tooth holder or plate. Fig. 7 is a detail of the combined cheek and lip portion hereinafter referred to, and Fig. 8 is a cross-section on the line 8 8 of Fig. 7.

Similar numerals of reference indicate similar parts throughout the drawings.

Inasmuch as the manikin is primarily intended for colleges and schools of dentistry, wherein many times space is limited, I prefer to mount the manikin on a convenient and stable support so constructed as to permit of any desired and necessary manipulation and adjustment of the manikin. Such a support may consist of a flat base 1, provided, if necessary, with the usual screw-holes by which it may be fastened to the floor. The support may further consist of a tubular standard 2, in the upper end of which may be adjustably held by an impinging screw 3 a rod or extension 4, the upper end of which is formed with an enlarged annular head 5, recessed to form a cylindrical socket 6. In the latter may be swiveled the lower tenoned end 7 of an upper clamping-section 8, an impinging screw 9 serving to secure the swiveled clamping-section in desired adjustment. The clamping-section is formed with fixed and movable members 10 and 11, respectively, the latter being pivoted to the former, as at 12, and each terminating in one member of a partly-spherical socket 13. These members 10 and 11 are coupled together by a bolt 14, having a nut 15 at one end.

The head 16, which comprises the manikin, consists of the upper and lower portions 17 and 18, as before, the same, respectively, containing the upper and lower jaws, as in the human head. These two sections of the head may, as in the patent referred to, be connected universally or simply hinged, as at 19, by ordinary hinges. From the under side and near the back of the upper section of the head there may depend a standard 20, at the lower end of which a ball 21 is formed, designed to fit the sockets 13, thus in connection with the same forming a ball-and-socket joint whereby the manikin or head may be tilted in any direction, after the manner of the human head, and when so tilted held by the bolt 14 and its nut.

A pair of coiled springs 22 may be suspended from the upper section of the head adjacent the hinges 19, the springs depending through openings 23 formed for that purpose in the lower jaw 18. The lower terminal of one spring may be bent to form a hook 24 and that of the other spring bent to form an engaging eye 25. As will be obvious, when the hook and eye are in engagement the jaws will be held yieldingly closed, and when disengaged the lower jaw will drop, as shown in Fig. 3.

Both the upper and lower jaws may be provided with one or a number of dovetailed or other convenient form of groove 26, in which are designed to slidably engage corresponding ribs 27, formed on the opposing surfaces of upper and lower tooth holders or plates 28, whereby, as will be obvious, the holders or plates may be conveniently inserted and removed.

Around the outer edge of each tooth holder or plate may be formed an L-shaped groove or seat 29, and in the same may be removably set or mounted the teeth 30. The latter are set on bases 31 of angular formation, and in some

instances, for the purpose of representing missing teeth, blanks 32 (see Fig. 6) may be employed, such blanks being formed, preferably, of rubber, so as to yield similarly to natural teeth when forced to one side out of their normal positions for the purpose of permitting the filling of an interior or inside cavity. Surrounding the series of teeth at about the bases 31 is a U-shaped clamping-band 33, preferably of flexible steel, the ends of the band being thickened, as at 34, and provided with threaded studs 35. A cross-piece 36 connects the two ends of the band and is perforated for the passage of the studs 35, winged nuts 37 being applied to the ends of the studs and serving to clamp the bar and band together and cause the latter to clamp the teeth in position. Of course by loosening one of the nuts any one or number of teeth may be readily removed and others or blanks inserted. Thus the student may have presented to him a cavity of any nature or locality in any tooth.

In the front meeting edges of the two head-sections 17 and 18 may be formed shallow grooves 38, and at the ends thereof may be located outwardly-disposed studs 39.

40 designates a cheek and lip section, (see Figs. 1 and 7,) preferably formed of rubber of a suitable degree of thickness to give proper resistance much the same as the human cheek. The upper and lower edges of this section may be molded about U-shaped frames 41 of spring-wire, see Figs. 7 and 8,) which terminals may end in edges 42, designed to removably engage with the studs 39 when the frames are sprung into the grooves 38 of the manikin. At the middle of this section is formed an opening 43 representing the mouth, and in order that the same may not be torn and also that the simulation may be carried out the section is thickened about the opening to produce flexible and elastic lips 44. Flexibility of the cheek may be provided for by one or more bellows folds 45 at each side of the mouth.

The section 10 may have a longitudinal slot 47, outwardly through which may project a headed bolt 48. A head-rest 49 may support the back of the head of the manikin and be connected to the bolt 48, for which purposes it may terminate in curved flattened ends 50. Through a nut 51 the rest may be held in any of its adjusted positions.

This completes the invention, and the operation and advantages thereof will be readily apparent.

It will be obvious that the invention is of great advantage in teaching to the student practical dentistry and that by it all branches of the profession may be practiced and demonstrated, from the filling of all the various cavities in each tooth to the more complex crown and bridge work, all the parts yielding much the same as the natural subject. Also by my improved manner of mounting the manikin the latter may be closed to assume any position a patient in an operating-chair could and when thus adjusted may be secured.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A tooth plate or holder, having its outer edge provided with a groove adapted to receive the bases of a series of teeth, &c., combined with a band forming the outer wall of the groove and terminating in threaded studs, a cross-piece perforated to receive and connect the studs, and nuts for the studs.

2. A tooth plate or holder, having its outer edge provided with a groove adapted to receive the bases of a series of teeth, &c., combined with a flexible band forming the outer wall of the groove, and means for causing the band to clamp the teeth.

3. A manikin comprising upper and lower jaws loosely connected and adapted to swing apart, combined with coiled springs secured to the upper jaw and extending below the lower jaw, said springs terminating in mutually-attachable ends.

4. A manikin comprising upper and lower jaws loosely connected and adapted to swing apart, combined with coiled springs secured to the upper jaw and extending below the lower jaw, one of said springs terminating in an eye and the other in a hook for detachably engaging said eye.

5. A manikin comprising upper and lower jaws loosely connected and adapted to swing apart, combined with a pair of coiled springs suspended from the interior of the upper jaw and depending through holes in the lower jaw and below the latter removably connected.

6. A manikin, comprising upper and lower hinged jaws, combined with a flexible cheek-section provided with an opening or mouth and connected to the head-section at substantially the hinge-line of the head.

7. A manikin, comprising upper and lower hinged jaws, provided near their hinge-line with outwardly-projecting studs, combined with a flexible cheek-section having a mouth-opening and terminating in eyes for removably engaging the said studs.

8. A manikin, comprising upper and lower loosely-connected jaws each having a groove, combined with a flexible cheek-section embodying upper and lower spring-like edges adapted to be sprung into said grooves.

9. A manikin, comprising upper and lower loosely-connected jaws, each provided with a groove near its edge, combined with a cheek-section of flexible material and having a mouth-opening, U-shaped spring-frames at the upper and lower edges of the said section and adapted to be sprung into the grooves, said frames terminating in eyes, and studs extending from the head at the ends of said grooves and adapted to engage said eyes.

10. A manikin, comprising upper and lower jaws loosely connected, combined with a flexi-

ble cheek-section having a mouth-opening surrounded by thickened rib representing lips.

11. A manikin, comprising upper and lower jaws loosely connected, combined with a flexible cheek-section having a mouth-opening surrounded by thickened rib representing lips and at each side of said opening having bellows folds.

12. The combination with a support, of a manikin loosely supported at the upper end thereof, and a rest for the manikin adjustably connected to said support.

13. The combination with a support, of a manikin adjustably connected to the upper end thereof, a slot formed in the support, a rearwardly and upwardly disposed head-rest, a headed bolt extending through the slot and lower end of the rest, and a nut on the bolt.

14. The combination with a manikin, of a support for the same embodying a base, a hollow post rising therefrom, an extensible section telescoping therewith, means for adjusting the extensible section, a superimposed section swiveled in the extensible section, and means for securing the same therein.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWIN P. WRIGHT.

Witnesses:
W. E. BARKER,
W. L. WALTERS.