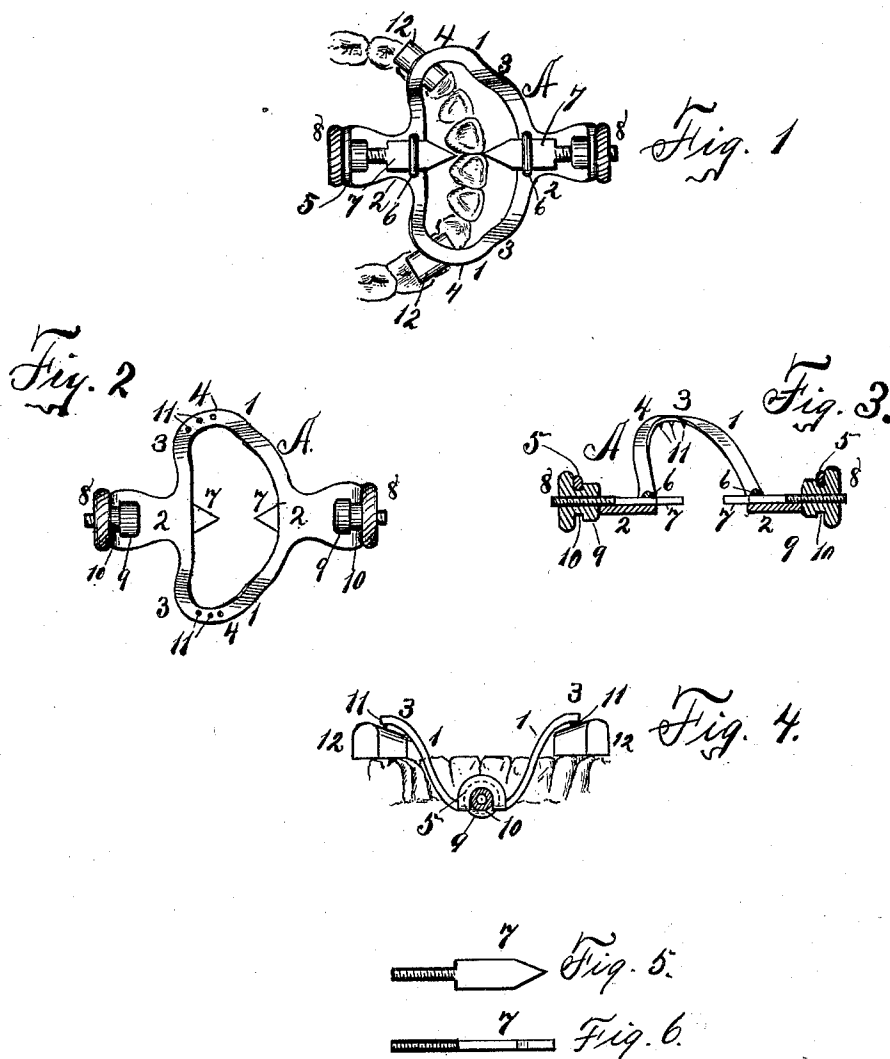


(No Model.)

F. H. CROSS & C. H. DAVIS.
TEETH SEPARATOR.

No. 465,555.

Patented Dec. 22, 1891.



WITNESSES:

H. A. Carhart.
C. B. Kime.

Freeman C. Cross. & INVENTORS.

Clayton H. Davis

BY

Smith & Benson
their ATTORNEYS

UNITED STATES PATENT OFFICE.

FREEMAN H. CROSS AND CLAYTON H. DAVIS, OF PULASKI, NEW YORK.

TEETH-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 465,555, dated December 22, 1891.

Application filed May 4, 1891. Serial No. 391,530. (No model.)

To all whom it may concern:

Be it known that we, FREEMAN H. CROSS and CLAYTON H. DAVIS, of Pulaski, in the county of Oswego, in the State of New York, have invented new and useful Improvements in Teeth-Separators, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

Our invention relates to teeth-separators for spreading teeth apart for examination or filling.

Our object is to provide a teeth-separator comprising a frame arching over the teeth and carrying on its rear side an adjustable wedge and upon its front side an operating-wedge, all so arranged that it can be adjusted to teeth of varying thickness, and also provided in the arches with means to hold blocks inserted under them to prevent any wobbling or rocking of the frame.

Our invention consists in the several novel features of construction and operation hereinafter described, and which are specifically set forth in the claims hereunto annexed.

It is constructed as follows, reference being had to the accompanying drawings, in which—

Figure 1 is a top plan view of our separator as placed upon the teeth. Fig. 2 is a bottom plan of it. Fig. 3 is a vertical section on a line through the thumb-nuts. Fig. 4 is a rear elevation of the same as applied to the teeth. Figs. 5 and 6 are details of one of the separating-wedges.

A is the frame, constructed from sheet metal stamped out and swaged up in dies, creating the upturned sides 1, the flat bottom 2, the bars 3, which constitute each side, being also arched, as at 4, and also creating the flanges 5, and an aperture to receive the head of the thumb-nut. Upon the bottom we secure the guides 6, through which the wedges 7 fit freely. These wedges consist of a single piece of flat metal, having a tapered point on one end and a threaded stem on the other. Thumb-nuts 8, each having a head 9 and a groove 10, are inserted under the flanges 5, with their heads in the apertures, the flanges in the grooves, and the stem of the wedges in the thumb-nuts, substantially as shown. Upon the under side of each of the arches 4 are spurs 11.

When the separator is placed upon the teeth, it is liable to wobble or rock and work itself toward the roots of the teeth, crowding the wedges more tightly against the gums, and to prevent this tapered blocks 12 of rubber or analogous material are inserted under the arches and the spurs engage therewith and hold them from slipping out. These blocks are wedging in order to permit of their use where the teeth are of varying lengths. It will be seen that the rear wedge can be adjusted for different thicknesses of teeth, that both wedges lie in the same plane, and that the whole device is simple, yet positive in its action, and can be readily taken apart for cleaning, and that the flanges are the bearings for the thumb-nuts, which can also be readily removed therefrom when unscrewed from the stems of the wedges.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. A teeth-separator consisting of a frame constructed from an integral piece of metal and having upturned and arching sides and flanged ends, sliding and independently-adjustable wedges mounted in guides upon the bottom and having threaded shanks, and thumb-nuts mounted in the flanges and fitting upon the shanks of the wedges and operated independently to adjust the wedges, in combination, as set forth.

2. A frame having arching sides, wedges mounted in the frame, and blocks removably inserted under the arches and means to hold them there, in combination, as set forth.

3. The combination, with the frame, the guides thereon, the independently-adjustable front and rear wedges mounted in said guides, and means to operate the wedges independently, of the blocks inserted under the arches and means to retain them there.

4. In a separator, spurs under the arches of the frame, in combination with blocks removably inserted under the arches and with which the spurs engage.

5. In a separator, the combination, with the frame, of a rear wedge adjustable independently of the front wedge and mounted in said frame.

6. A separator-frame constructed from a single piece of metal, having arching sides, front and rear arms, flanges upon the ends of

the same and provided with notches in the flanges and in the arms communicating with each other, and independently-adjustable wedges mounted in guides under said arms
5 and having threaded shanks, in combination with thumb-nuts mounted in said notches and engaging with the shanks of the wedges.

7. A separator-frame consisting of a single undivided piece of metal stamped out of a
10 metallic sheet and having arching sides, front

and rear arms, flanges upon the arms, and notches in the arms and flanges.

In witness whereof we have hereunto set our hands this 23d day of April, 1891.

FREEMAN H. CROSS.
CLAYTON H. DAVIS.

In presence of--

HOWARD P. DENISON,
C. B. KINNE.