

(No Model.)

T. S. HOLMES.

DENTAL REGULATING DEVICE.

No. 360,695.

Patented Apr. 5, 1887.

Fig. 1

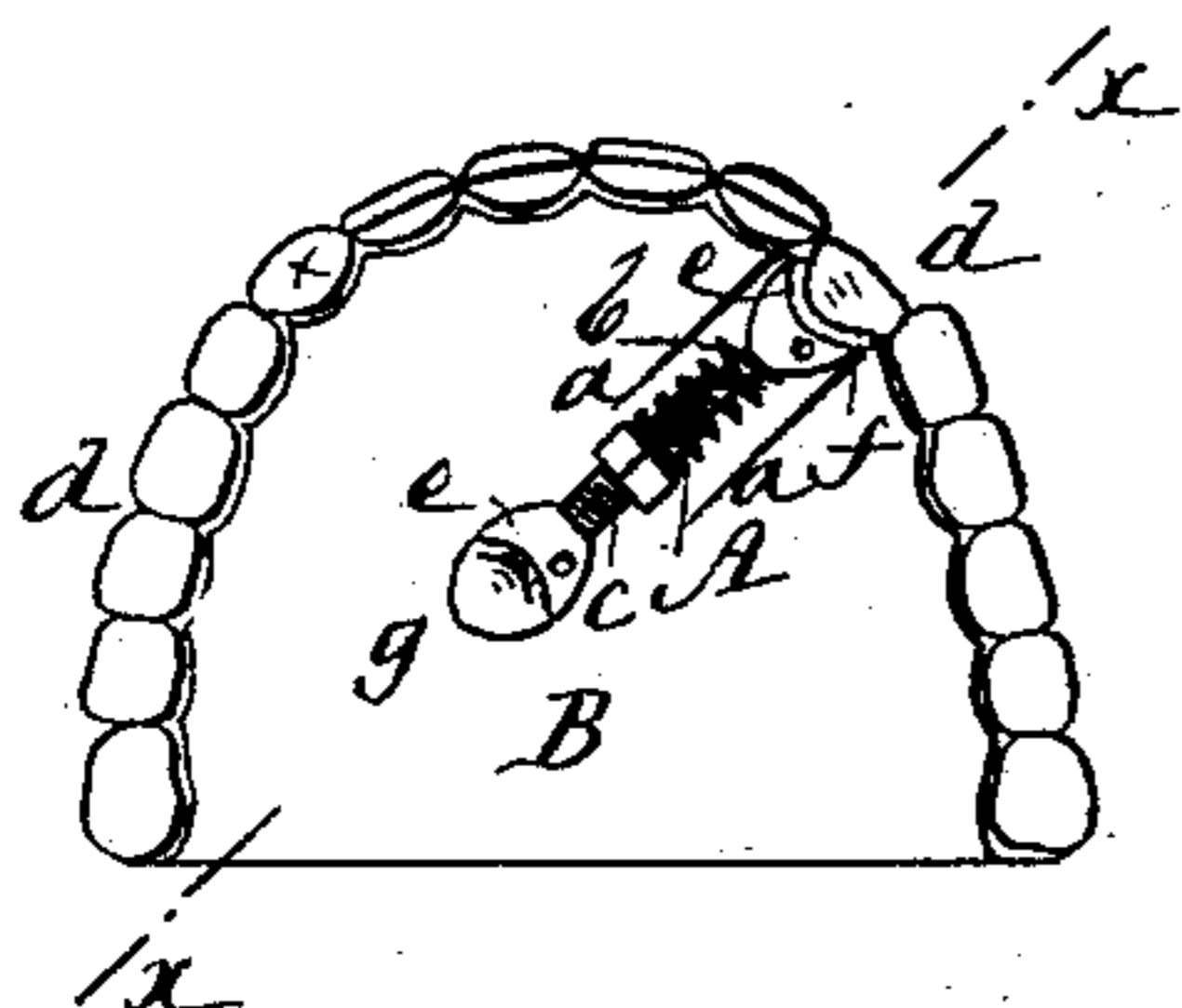


Fig. 3

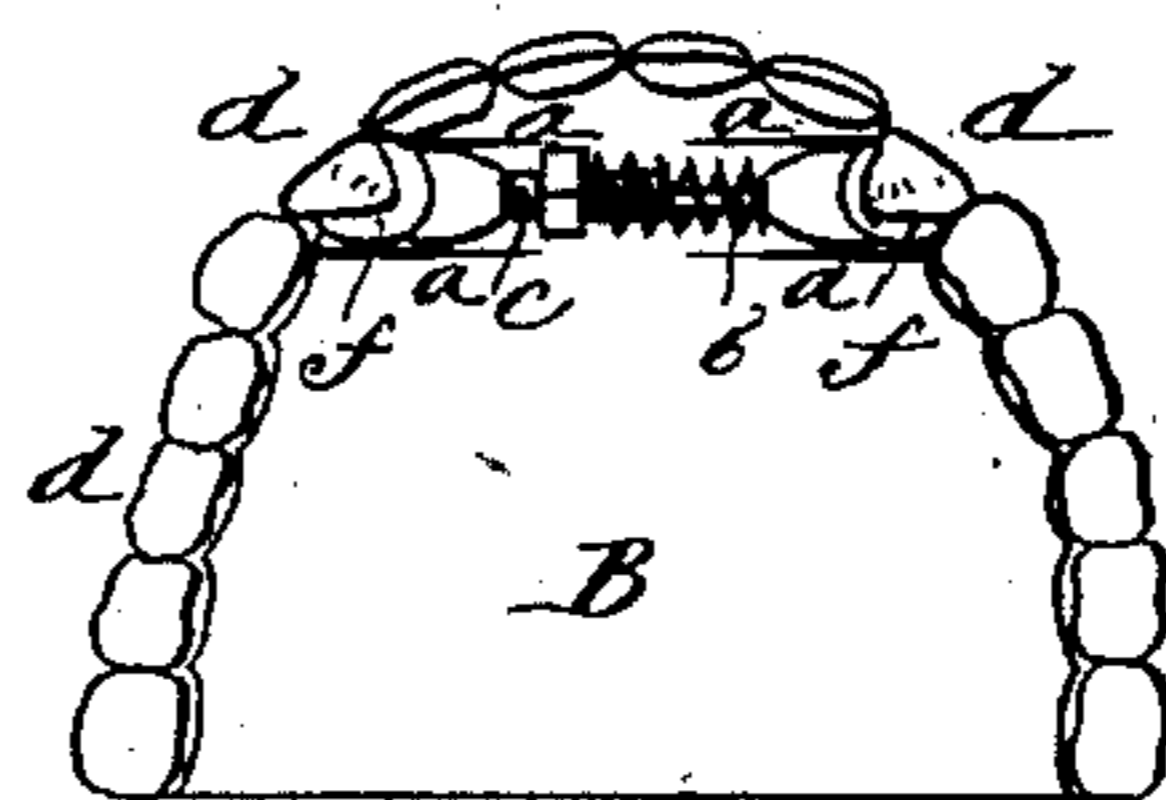


Fig. 2

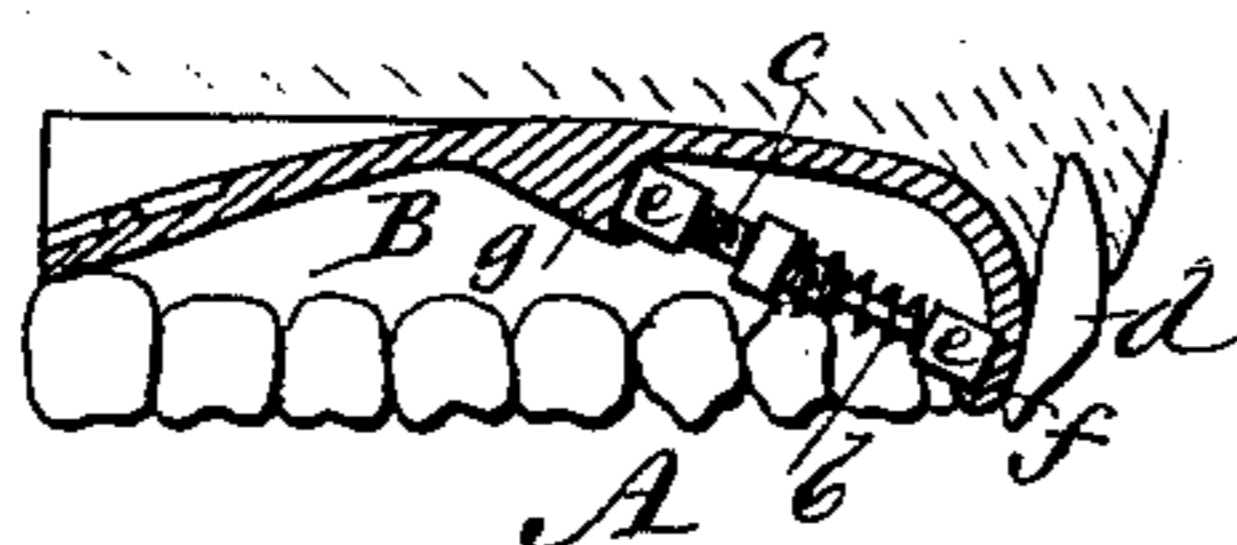


Fig. 6

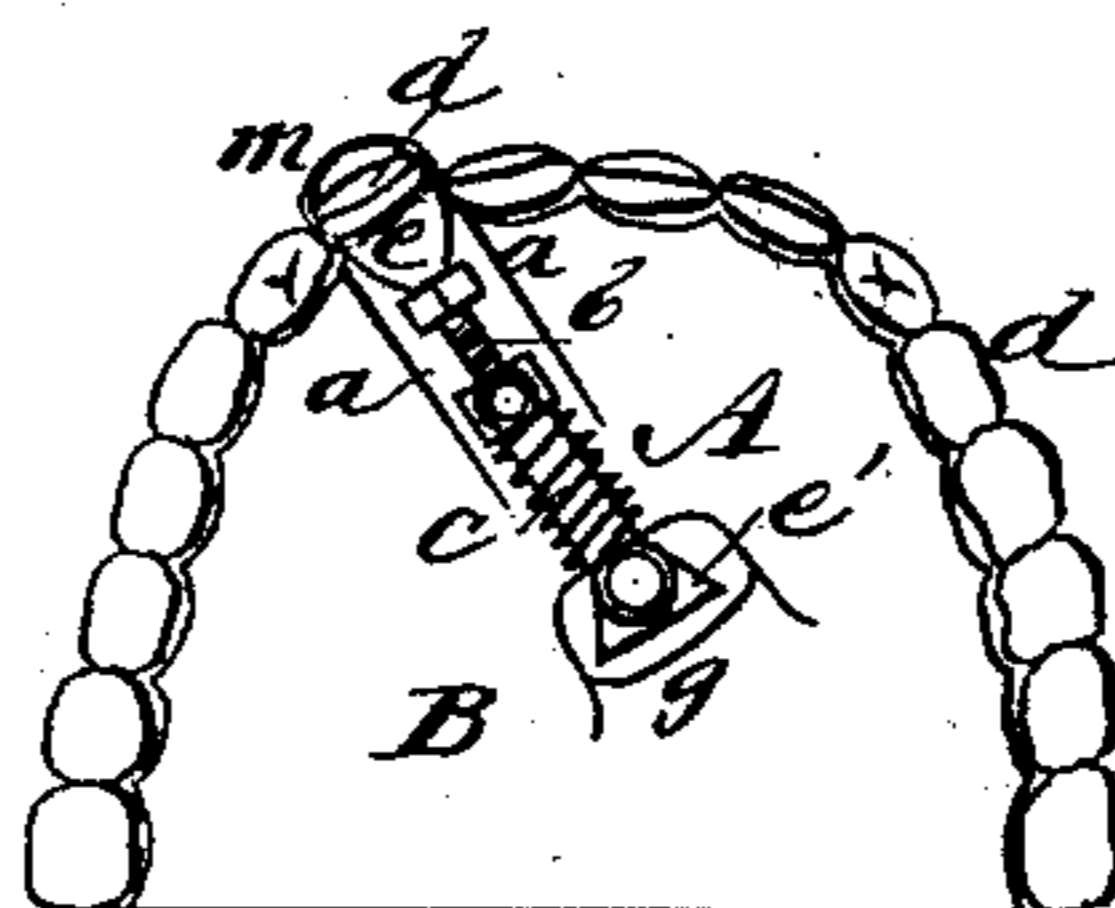


Fig. 4

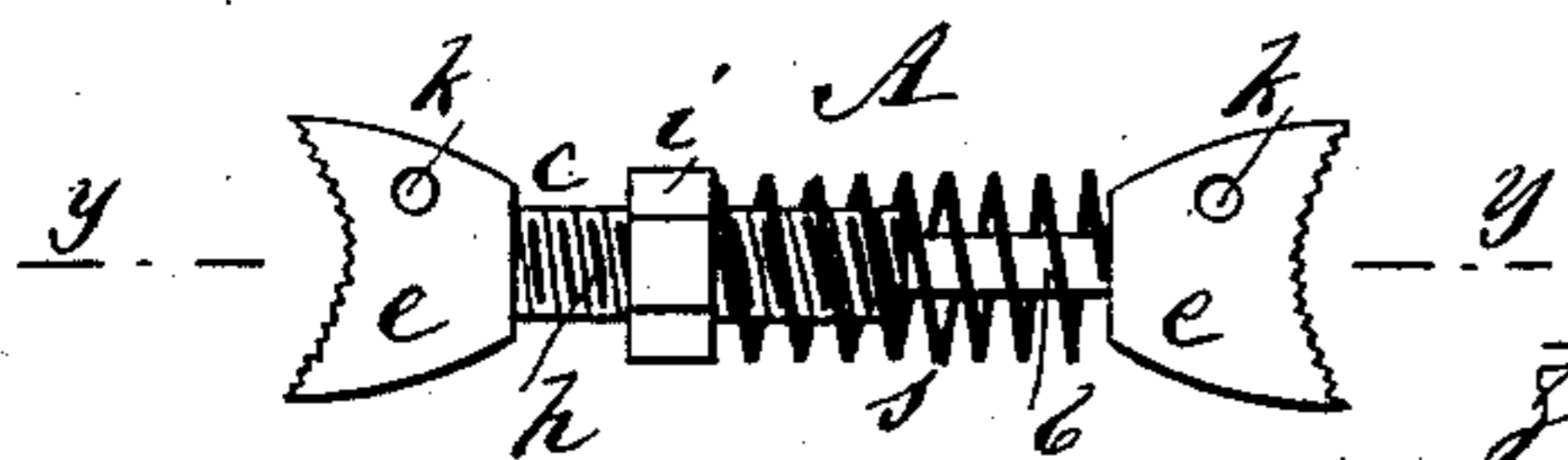


Fig. 7

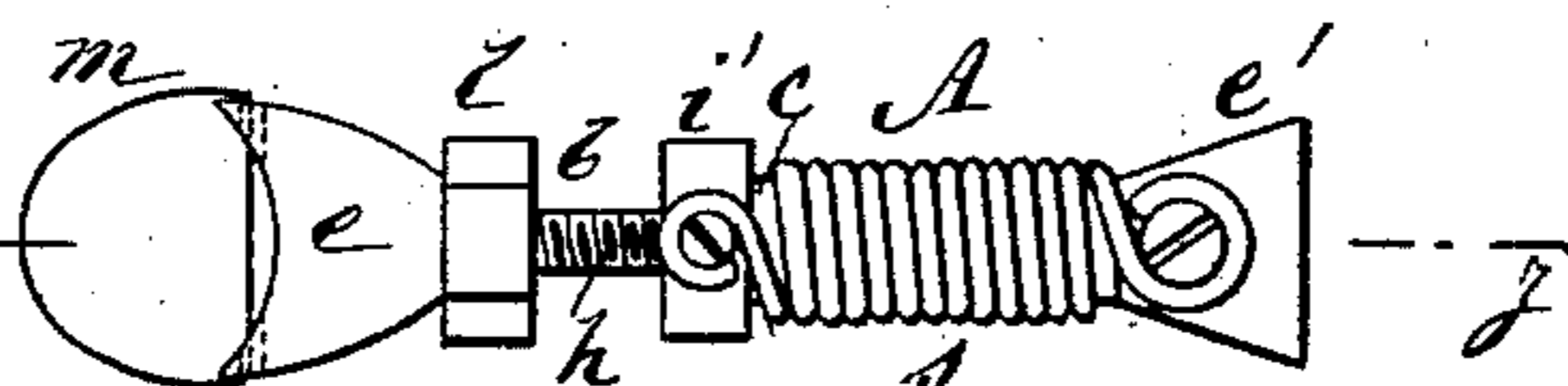


Fig. 5

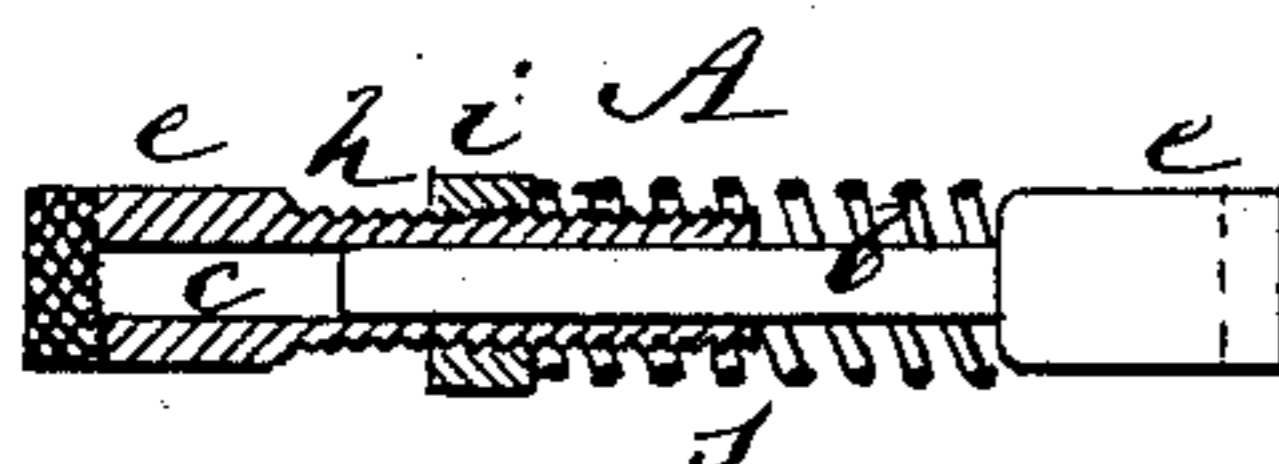
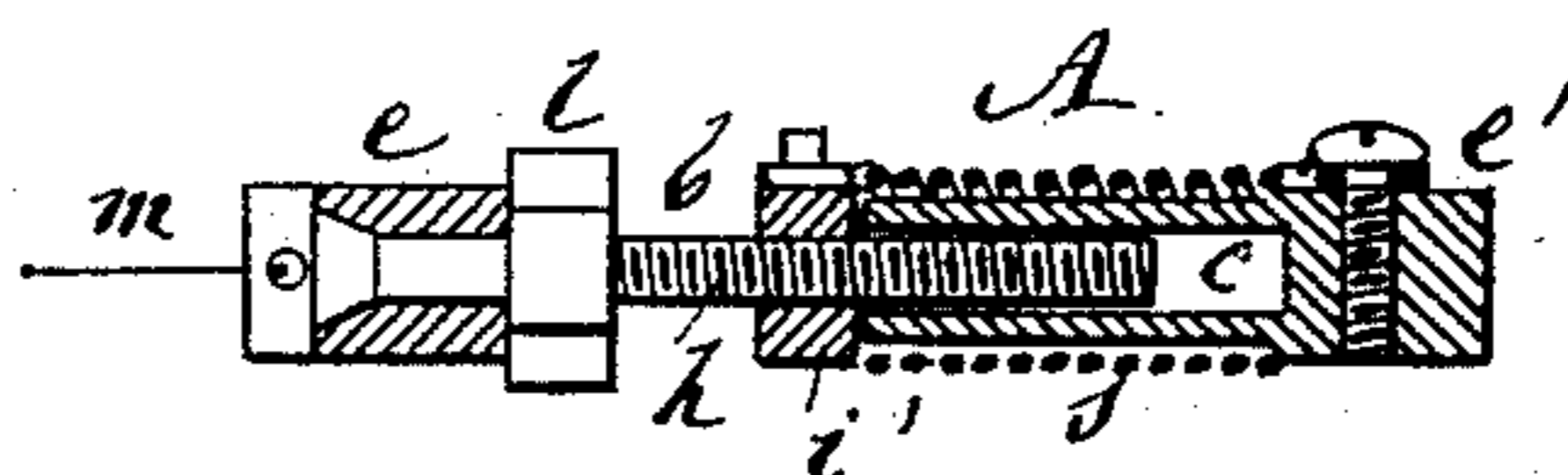


Fig. 8



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UNITED STATES PATENT OFFICE.

THEODORE S. HOLMES, OF BROOKLYN, NEW YORK.

DENTAL REGULATING DEVICE.

SPECIFICATION forming part of Letters Patent No. 360,695, dated April 5, 1887.

Application filed January 10, 1887. Serial No. 223,907. (No model.)

To all whom it may concern:

Be it known that I, THEODORE S. HOLMES, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful
5 Improvement in Dental Regulating Appliances, of which the following is a full, clear, and exact description.

This invention relates to devices for regulating natural teeth—that is, for straightening
10 teeth which are out of line, projecting outward or inward, as the case may be. These devices have usually consisted of a jack-screw applied to push or pull on the tooth which is out of line and adjusted from time to time,
15 said jack-screw usually resting against an opposite tooth and bearing with a dead pressure upon the tooth or teeth direct, which is liable to abrade and injure the teeth, or resting against a temporary plate, and when forcing
20 a tooth outward bearing against said tooth direct. To pull on the tooth, a silk or other thread attached to the jack is passed round the tooth.

My invention, which is mainly designed for
25 the upper teeth, consists in a spring-regulating appliance having a screw adjustment for varying the tension of the spring when required, whereby a constant and steady pressure or pull on the tooth or teeth is kept up; and the
30 invention further consists in the combination, with such an appliance, of a temporary plate applied to the palate or roof of the mouth, constructed to take the bearing-pressure of said appliance against it, instead of against the
35 tooth direct, all substantially as hereinafter described, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate
40 corresponding parts in all the figures.

Figure 1 represents an under view of an upper row of teeth with a temporary plate applied to the palate and the spring-regulating device under one form of construction in position for forcing outward a single tooth. Fig.
45 2 is a sectional inverted view of the same upon the line *x x* of Fig. 1. Fig. 3 is a view similar to Fig. 1, but showing the spring-regulating appliance as applied to force outward two
50 teeth on opposite sides of the mouth. Fig. 4 is a longitudinal view, upon a larger scale, of

the spring-regulating appliance constructed as shown in the hereinbefore-named figures; and Fig. 5 is a further longitudinal view thereof in partial section, as indicated upon the line
55 *y y* in Fig. 4. Fig. 6 is an under view of an upper row of teeth and palate-plate, with the spring-regulating device applied to pull upon a tooth for the purpose of drawing it inward. Fig. 7 is a longitudinal view, upon a larger
60 scale, of the spring-regulating appliance constructed as in Fig. 6, and with the thread attached which pulls upon the tooth; and Fig. 8 is a longitudinal section of such appliance upon the line *z z* in Fig. 7.
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The main or body portion of the spring-regulating appliance A is constructed in two separate lengths or sections, the one in the form of a pin, *b*, and the other in the form of a socket,
70 *c*, in which the pin is free to slide or work, for the purpose of longitudinal adjustment and to vary the tension of the spring *s*, which controls the appliance, subject to regulation by a screw, said appliance being provided with an
75 acting jaw, *e*, at one or both of its ends, according to the work to be done.

Prior to applying the regulating device I make a vulcanite plate, B, from a cast of the crown or palate of the mouth, shaped on its margin to conform to the inner configuration
80 of the upper row of teeth, *d d*, of the mouth. When the regulating appliance A is designed to push upon a single tooth, as in Figs. 1 and 2, or upon two opposite side teeth, as in Fig. 3, the plate B, which is held by suction on the
85 roof of the mouth, is fashioned, as at *f*, to form a bearing-surface for the acting jaw or jaws *e* of the appliance A against the tooth or teeth to be forced outward, whereby direct contact of said regulating appliance and all
90 injury to the tooth or teeth arising therefrom is avoided. Said plate, too, when only one tooth requires to be regulated at a time, is fashioned with a surface projection, *g*, for the
95 inner end of the regulating appliance A to rest against or engage with, as shown in Figs. 1, 2, and 6.

In Figs. 1, 2, 3, 4, and 5 of the drawings the pin-section *b* of the appliance A has an acting jaw, *e*, on its outer end, and the socket-
100 section *c* another acting jaw, *e*, on its outer end. This socket-section has a screw-thread,

5 *h*, on it, upon which is fitted a nut, *i*, between
 which and the jaw *e* on the pin-section *b* a
 spring, *s*, is arranged, having an expanding ac-
 tion, so as to exert a force which will tend to
 10 separate the two jaws *e e*, and thus throw a
 constant and steady strain upon the tooth or
 teeth to be forced outward without that re-
 peated adjustment of the appliance which is
 necessary in a mere jack-screw, the nut *i* here
 15 only being adjusted when it is requisite to
 vary the tension of the spring. The holes *k*
 in the jaws *e e* are for the purpose of passing
 a thread through to anchor the appliance to
 the tooth or teeth and so prevent it from be-
 20 ing accidentally swallowed, of which, how-
 ever, there will be but little risk.

The plate *B* has saw cuts or slits *a a* made
 in or partly across it on opposite sides of the
 tooth or teeth being acted upon, whereby in-
 25 creased flexibility will be given to the lip por-
 tion *f*, that intervenes between the acting jaw
 or jaws *e* of the appliance *A* and the tooth or
 teeth being regulated.

In Figs. 6, 7, and 8 of the drawings the pin-
 30 section *b* only is represented as provided with
 an acting jaw, *e*, and the socket-section *c* with
 a stationary jaw or foot, *e'*, which, however,
 might be an acting jaw when the appliance is
 required to pull upon two opposite teeth at
 35 the same time. The pin of the pin-section *b*
 has the screw-thread *h* upon it, instead of on
 the socket-section, and is fitted to freely turn
 in its attached jaw *e*, and is furthermore pro-
 vided with a head, *l*, by which to turn it. The
 40 screw-thread *h* works through a nut or box, *i'*,
 at the inner end of the socket-section *c*, and
 which does not turn, but is connected with the
 outer end of said section by the controlling-
 spring *s*, that is made to exert a contracting
 45 tendency on the pin-section *b* and its jaw *e*, so
 that upon a loop of silk or other thread, *m*,
 being attached to said jaw and placed over or
 round the tooth to be drawn inward the spring
s will exert a constant and steady tendency in
 that direction, the pin of the pin-section *b* only
 being turned by its head *l* whenever it is nec-
 essary to adjust the tension of the spring, just
 as the nut *i* in the previous figures of the draw-
 ings was turned to adjust or set the tension of

the spring in the regulating appliance adapted 50
 to pushing instead of pulling. These changes
 and the substitution of a contracting for an
 expanding spring are necessary when adapt-
 ing the appliance to a pulling action; but the
 principle of operation is the same and the 55
 means used are substantially similar.

To adjust the tension of the spring *s* in either
 case, a wrench or other tool may be applied to
 the nut *i* or head *l* of the regulating appliance.

Having thus fully described my invention, I 60
 claim as new and desire to secure by Letters
 Patent—

1. In dental regulating appliances, the with-
 in-described tooth-regulating device *A*, com- 65
 posed of an independent pin-section, an inde-
 pendent socket-section, longitudinally adjust-
 able one with and over the other, and an ad-
 justable spring adapted to give a longitudinal
 elastic action to said sections and to vary the
 distance of their outer ends apart, substan- 70
 tially as specified.

2. The longitudinally-adjustable pin and
 socket sections *b c*, having jaws on their oppo-
 site ends and provided with a screw-thread
 and nut or box fitting said thread, in combi- 75
 nation with a tension-regulating spring, *s*, be-
 tween the nut or box and one of said jaws, es-
 sentially as shown and described, and for the
 purposes herein set forth.

3. The combination of the longitudinally- 80
 adjustable spring-tension dental regulating
 appliance *A* and the plate *B*, adapted to hold
 or carry said appliance and constructed with
 a projecting lip or marginal portion, *f*, adapted
 to form a bearing for said appliance between 85
 its acting end or ends and the tooth or teeth
 being regulated, substantially as specified.

4. The combination of the longitudinally-
 adjustable spring-tension tooth-regulating ap-
 90 pliance *A* and the plate *B*, adapted to hold or
 carry said appliance and constructed with a
 bent lip or marginal portion, *f*, and saw cuts
 or slits *a a*, essentially as shown and described,
 and for the purposes herein set forth.

THEODORE S. HOLMES.

Witnesses:

A. GREGORY,
 J. F. ACKER, Jr.