

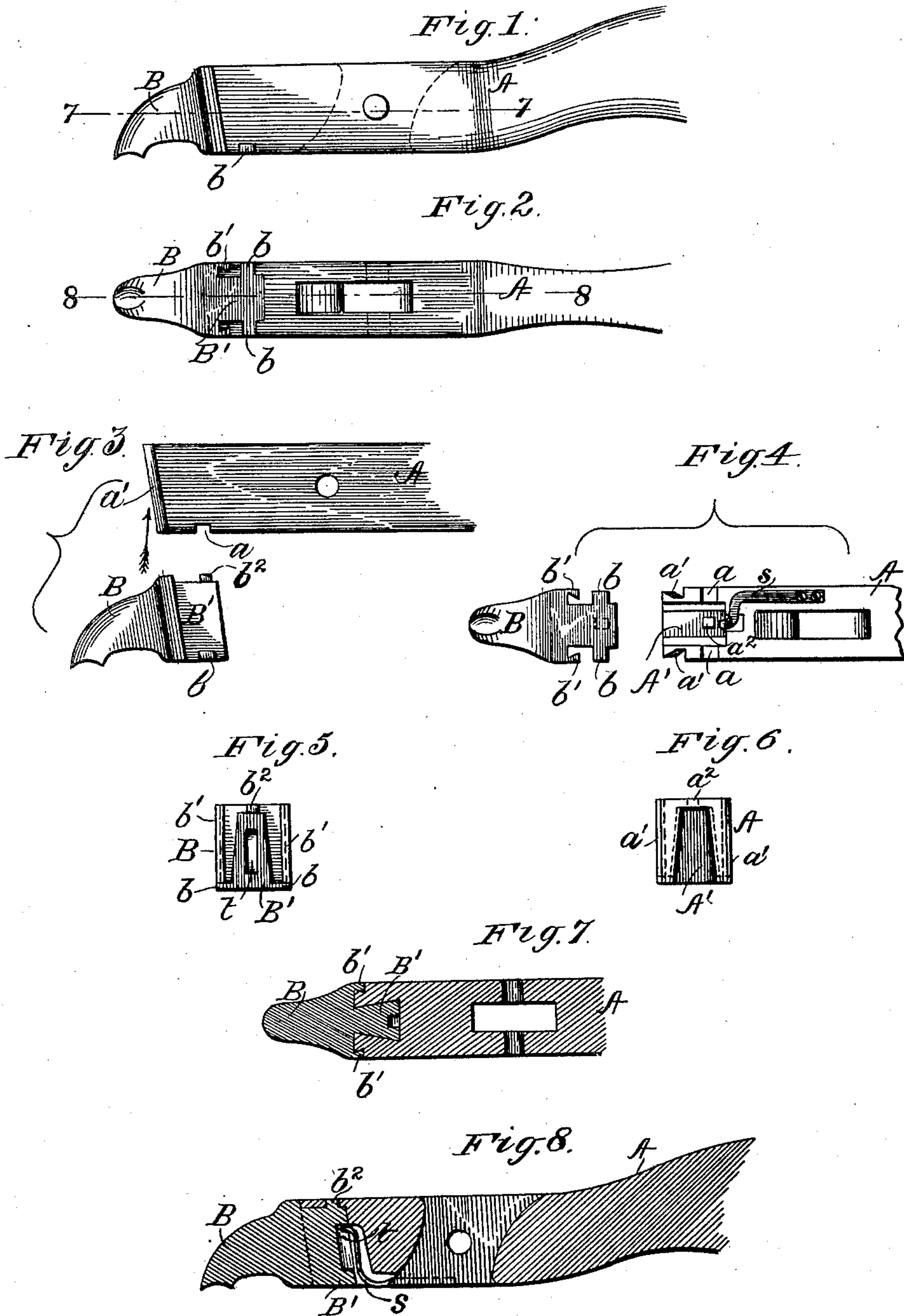
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Patented Dec. 3, 1901.

J. B. DAVIS.  
DENTAL FORCEPS.

(Application filed Mar. 22, 1901.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

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## DENTAL FORCEPS.

SPECIFICATION forming part of Letters Patent No. 688,237, dated December 3, 1901.

Application filed March 22, 1901. Serial No. 52,376. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH BOWEN DAVIS, of Braxton, in the county of Simpson and State of Mississippi, have invented a new and useful Improvement in Dental Forceps, of which the following is a specification.

My invention relates to forceps of that form which have removable beaks, and it is applicable to various kinds of forceps, but more especially to dental forceps.

In movable-beak forceps heretofore devised the pressure from within outwardly on the end of the beak would tilt it in its socket, and thus have a tendency to loosen the beak in the socket. My invention is designed to provide such peculiar construction of joint between the movable beak and the jaw of the handle as will make a firm and secure connection which shall resist this tendency and which in use will have a tendency to tighten instead of loosen at the joint. It consists in the peculiar construction and arrangement of the parts which I will now proceed to describe with reference to the drawings, in which—

Figure 1 is a side view, and Fig. 2 an inner face view with the parts connected. Fig. 3 is a side and Fig. 4 an inner face view with the parts detached but juxtaposed. Fig. 5 is a tenon end view of the beak, and Fig. 6 the corresponding socket end view of the handle-jaw. Fig. 7 is a section through line 7 7 of Fig. 1, and Fig. 8 a section through line 8 8 of Fig. 2.

In the drawings, A represents the handle-jaw, and B is the detachable beak of the forceps. This beak is formed on its end adjacent to the handle-jaw in a peculiar manner. That is to say, it has a tenon B', Figs. 3 and 5, that is adapted to enter a corresponding socket A', Figs. 4 and 6, in the jaw, which tenon and socket are tapered in three dimensions. It has the wedge-shaped form shown in Fig. 5, adapted to enter the recess A' in Fig. 6 by a movement indicated by the arrow in Fig. 3, in which it will be seen the beak B is fitted to the jaw A by a movement from the inner side outwardly, producing a wedging and tightening action, since the tenon has its outer face smaller than the inner face. This tenon B' is also tapered in another direction, as shown in Fig. 7, which gives a dovetail

lock to resist outward longitudinal pull, because of the divergence of the taper of the dovetail. The meeting edges of the sides of the jaw A and beak B are also inclined, as seen in Figs. 1 and 3. These tapered dimensions all cooperate to continually tighten the joint when the pressure on the beak comes against it from the inner face outwardly, as is incident to its use.

To prevent the beak B from rocking outwardly from pressure on its extreme end when in use, the tenon portion B' is on its lower side formed with two opposite extensions *b b*, which fit into recesses *a a* on the under side of the jaw, as seen in Figs. 2, 3, and 4, and a pin *b<sup>2</sup>* on the top of the tenon enters a hole *a<sup>2</sup>* in the jaw, as seen in Figs. 3 and 8, and helps to hold the beak against any pulling or twisting strains. At the meeting edges of the beak B and jaw A along the side there are formed undercut flanges *b' b'*, (see Figs. 4 and 7,) which enter corresponding grooves *a'* in the jaw and form a further lock which strengthens the connection between the beak and the jaw.

To lock the beak to its position in the jaw against accidental movement inward, a recess *t* is formed in the inner end of the tenon B', as seen in Fig. 5, and a spring *s* (see Fig. 8) is arranged to enter the same and act as a detent. This spring is arranged to be released when the beak is to be removed by pressure exerted upon the same from the inner face of the jaw.

My invention is designed to be applied to all sorts of forceps or pliers to which it may be applicable, including the rubber-dam punch, the wedge-cutter, and the crown-forceps.

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

1. A forceps having a detachable beak provided with a tenon tapered transversely to a smaller outer face to produce a wedging action and also diverging in longitudinal direction to a dovetail shape, said tenon being adapted to enter a corresponding socket in the jaw from the inside by a lateral motion as described.

2. A forceps having a detachable beak pro-



vided with a tapered and dovetail tenon carrying locking extensions  $b\ b$  on its inner side adapted to enter corresponding recesses on the inner side of the jaw substantially as described.

5 3. A forceps having a detachable beak provided with a tapered and dovetail tenon carrying a pin  $b^2$  on its outer side entering a corresponding hole in the outer side of the jaw  
10 substantially as described.

4. A forceps having a detachable beak provided with a tapered and dovetail tenon and undercut side flanges  $b' b'$  entering corresponding external grooves in the sides of the  
15 jaw.

5. A forceps comprising a detachable beak provided with a tapered and dovetail tenon

and a locking-recess  $t$  in the end thereof, and a handle-jaw provided with a socket to receive the tenon and a locking-spring  $s$  adapted to enter the locking-recess substantially as and for the purpose described. 20

6. A forceps comprising a handle-jaw with tapered dovetail socket  $A'$ , hole  $a^2$ , recesses  $a$  and side grooves  $a' a'$ , combined with a detachable beak having undercut flanges  $b' b'$  and tapered and dovetail tenon  $B'$  with extensions  $b\ b$  and pin  $b^2$  substantially as shown and described. 25

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Witnesses:

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