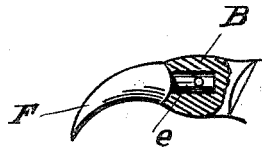
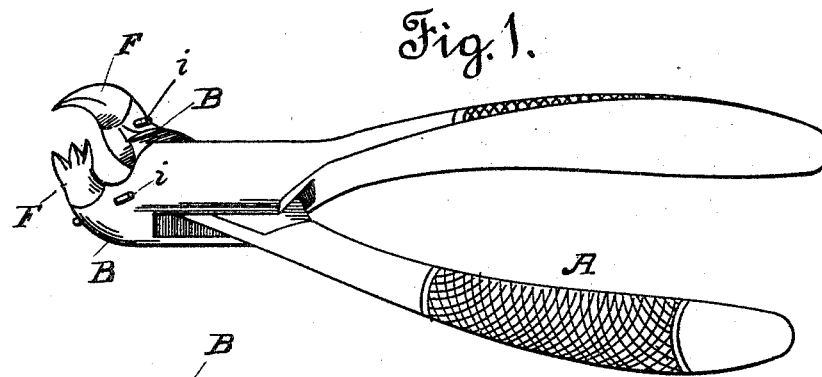


(No Model.)

C. E. BLAKE, Sr.  
DENTAL FORCEPS.

No. 491,516.

Patented Feb. 14, 1893.



Witnesses.  
*Helloutwerde.*  
*J. H. Foster*

Inventor.  
*Chas. E. Blake, Sr.*

# UNITED STATES PATENT OFFICE.

CHARLES E. BLAKE, SR., OF SAN FRANCISCO, CALIFORNIA.

## DENTAL FORCEPS.

SPECIFICATION forming part of Letters Patent No. 491,516, dated February 14, 1893.

Application filed June 30, 1892. Serial No. 438,515. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES E. BLAKE, Sr., a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented certain new and useful Improvements in Dental Forceps; and I do hereby declare the following to be a full, clear, and exact description of said invention, such as will enable others skilled in the art to which it most nearly appertains to make, use, and practice the same.

My improvement in dental forceps consists in adapting removable beaks or gripping points to the jaws of a single forcep handle with irregular lines, by keys in such a manner that when the removable beaks or points are fitted and keyed in place they will be firmly seated and cannot be displaced by the clamping pressure. In this class of instruments the beaks or points used are mostly curved, so that they can reach and grasp the tooth while the handle is at an angle to the gripping points; therefore when pressure is applied, by compressing the handles together, the strain upon the gripping points or beaks is in a great measure a twisting strain, which is liable, when interchangeable beaks are used, to displace or unseat them in their sockets.

My improvement consists in so forming the jointure or shoulders where the base of the beak or point meets and fits against the stubs of the jaws, that they will interlock and form a unit of resistance to twisting, as well as to direct strains.

Referring to the accompanying drawings: Figure "1" represents a forceps handle, with one removable eagle beak and one removable tricuspidate beak; Fig. "2" represents a beak with a portion of the stub of the jaw broken away, to show the tenon and socket; and Fig. "3" is a view of a tricuspidate beak.

In all three of the figures the line of jointure is represented on curved lines.

The forcep handle "A" is made like any or-

dinary dental forceps, only it has no fixed beaks or points on the ends of its jaws. The ends of the jaws "B," "B," are made with sockets to receive the tenon "e" of the beaks "F," and their extremities are formed in an irregular manner. The bases or shoulders of the beaks which fit against the end of the jaws I form in a reverse irregular manner, so that when the tenons of the beaks or points are introduced into the sockets of the jaw stubs, the lines at the base of the beaks will fit, and interlock with the end of the jaw stubs, and form a brace to resist twisting strains. In the present instance I have represented these lines as being curved, so that one of the abutting ends will be concave and the other convex to fit, but it is evident that any irregular interlocking forms or lines can be used.

The beaks or points are keyed, and secured in place by a pin "i," which passes transversely through the stubs and sockets and through the tenon of the beak. By this means I make it possible to use a single forceps handle answer for any number of interchangeable beaks or points, so that by substituting the proper beaks in a properly constructed handle any tooth, upper or lower, buccal or lingual, can be grasped, elevated and extracted, without danger of displacing the points or beaks by the pressure applied to the handle.

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

In a dental forceps adapted to receive interchangeable and removable beaks or points by means of tenons entering sockets in the stub jaws of the forceps, a transverse key adapted to draw the irregular abutting ends together, substantially as described.

CHAS. E. BLAKE, SR.

Witnesses:

THOS. J. STALEY,  
J. WM. MISTER.