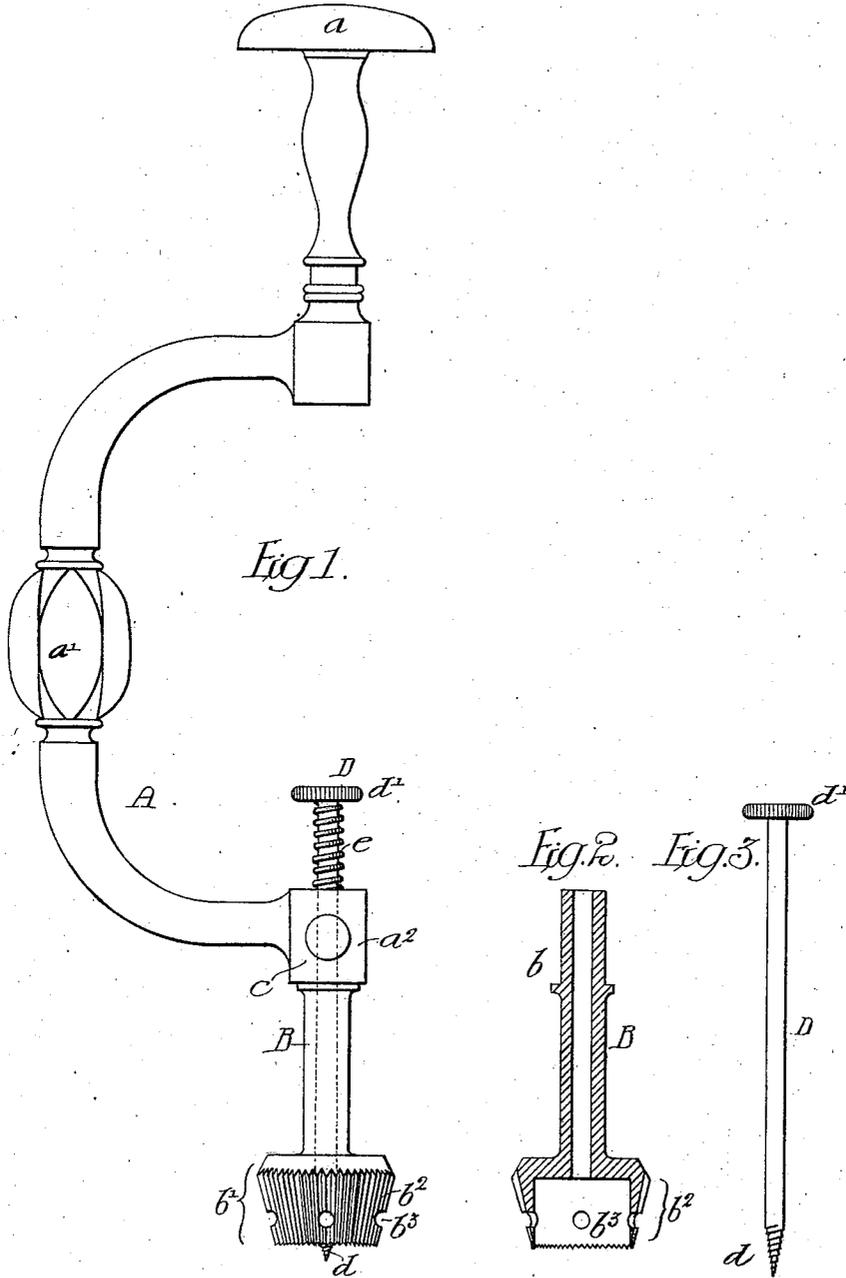


No. 847,133.

PATENTED MAR. 12, 1907.

R. VELASCO.  
TREPAN.

APPLICATION FILED OCT. 28, 1905.



Witnesses:  
Walter F. Pullinger  
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# UNITED STATES PATENT OFFICE.

RAMÓN VELASCO, OF GUADALAJARA, MEXICO.

## TREPAN.

No. 847,133.

Specification of Letters Patent.

Patented March 12, 1907.

Application filed October 28, 1905. Serial No. 284,918.

To all whom it may concern:

Be it known that I, RAMÓN VELASCO, a citizen of the United States of Mexico, residing in Guadalajara, State of Jalisco, Mexico, have invented certain Improvements in Trepan, of which the following is a specification.

My invention relates to certain improvements in trepans for removing portions of the skull.

My invention is so designed that a brace can be used.

The object of my invention is to so construct the apparatus that when the cutters cut through the skull the part removed is instantly withdrawn.

A further object of the invention is to provide means for inserting the saw of Gili when it is desired to cut between two openings.

In the accompanying drawing, Figure 1 is a view showing a brace and bit and illustrating my improved trepanning-tool. Fig. 2 is a sectional view of the cutter illustrated in Fig. 1. Fig. 3 is a view of the screw extractor.

A is an ordinary brace having a pressure-pad, a swivel-handhold  $a'$ , and a socket  $a^2$ . Mounted in the socket in the present instance is the cutter B, having a shank  $b$ , which fits snugly in the socket  $a^2$  and is held therein by a clamping-screw  $c$ . The cutter is enlarged at its lower end  $b'$ , and this portion of the cutter is conical in shape and has teeth  $b^2$  around its periphery, as well as on its lower edge, so that when the cutter makes an incision it not only cuts on the end, but gradually increases the size of the opening as it passes into the skull, forming a conical opening therein. Openings  $b^3$  are preferably formed on the toothed portion of the cutter.

The spindle of the cutter is hollow, as shown, and passing through the spindle is an extractor D, having a screw-threaded end  $d$ , which can be screwed into the skull in advance of the cutter, so as to center the cutter and insure the incision being made in the proper place.

The extractor has at its upper end a button  $d'$ , by which it can be turned and moved. Between this button and the socket  $a^2$  of the brace is a spring  $e$ . When the extractor is screwed into the skull, the spring is compressed, so that the minute the cutter B goes through the skull the section removed will be immediately withdrawn by the spring  $e$ , the under side of the cutter being hollow, as indicated in Fig. 2, so as to receive the cut portion of the skull.

By making the tools in this shape incisions can be made in the skull without danger of penetrating the brain, as after the cutter has passed through the skull it cannot, owing to its conical form, be projected any farther than its conical section will allow, and as soon as the portion has been severed the spring will lift the piece, indicating that the part has been completely severed from the skull.

I claim—

1. The combination in a trepanning instrument, of a hollow cutter, an extractor passing through the cutter and having a screw, with a spring mounted on the extractor to withdraw said extractor and the severed portion of the skull after the cut has been made, substantially as described.

2. The combination in a cutter having a conical cutting-section with cutting-teeth on the edge and on the periphery, an extractor mounted on the cutter having a screw on one end and a button on the opposite end, with a spring mounted between the button and the end of the cutter so that when the cut has been made the spring will withdraw the extractor and the severed portion of the skull, and means for turning the cutter, substantially as described.

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

RAMÓN VELASCO.

Witnesses:

WILL. B. DAVIS,  
PEDRO SIERRA.