

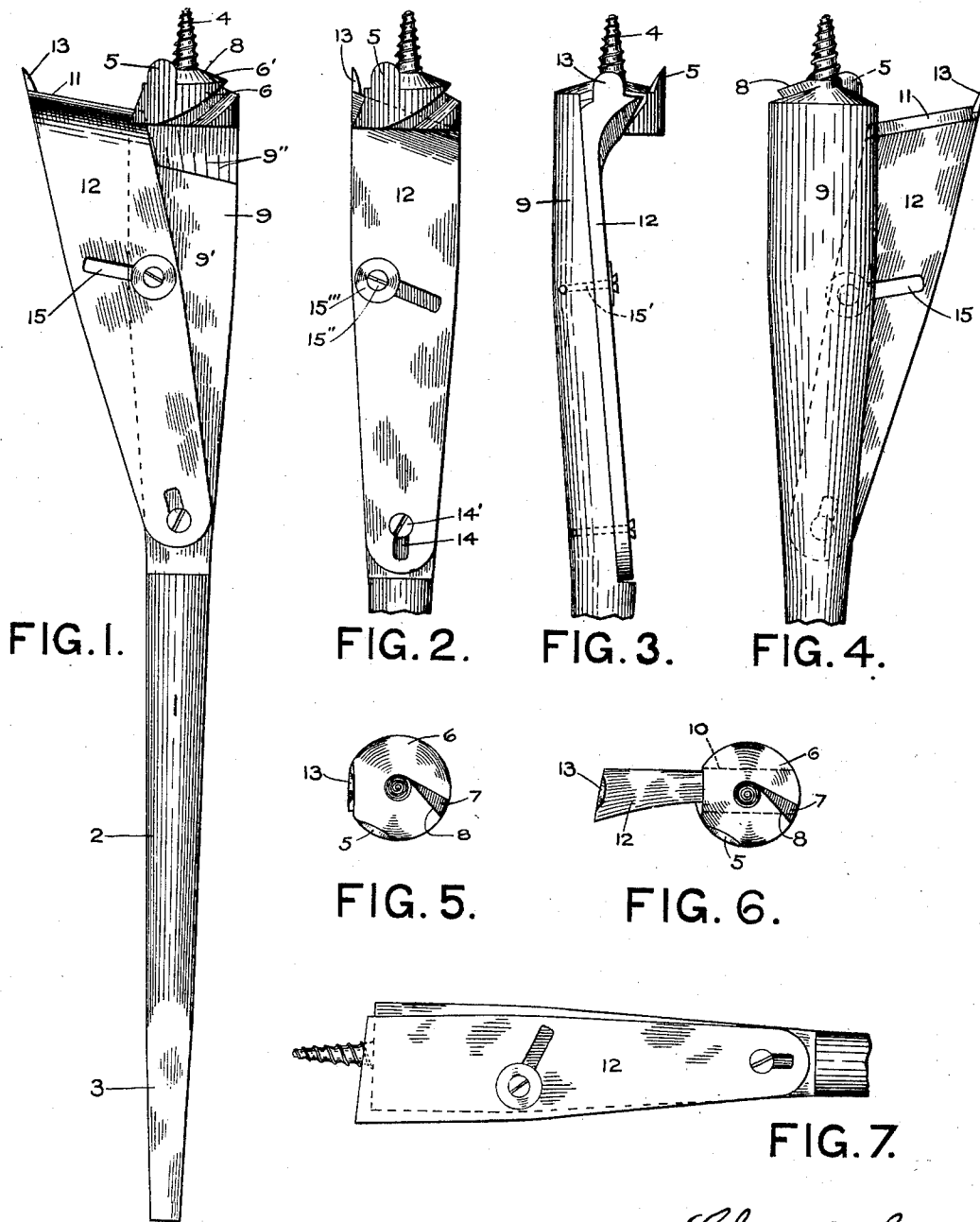
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C. F. SEBLOM.
EXTENSION BIT.

APPLICATION FILED JAN. 27, 1903.

NO MODEL.



Witnesses
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EXTENSION-BIT.

SPECIFICATION forming part of Letters Patent No. 737,501, dated August 25, 1903.

Application filed January 27, 1903. Serial No. 140,768. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. SEBLOM, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Extension-Bits, of which the following is a specification.

My invention pertains to tools such as are used for boring holes and are commonly termed "bits;" but whereas the term mentioned is sometimes used in a somewhat restricted sense and as applying only to tools used for boring holes in wood or other relatively soft material my invention may be adapted in form for use in any material that may be bored by tools which have cutting edges.

The principal object of my invention is to provide a bit which may be suitably adjusted to bore holes of various diametral dimensions, and by my invention said adjustments can be quickly made by means of a cutting member which will at any required adjustment thereof maintain its proper longitudinal position relatively of the bit and of a cutting member which is rigidly attached to the bit. I also provide a graduated scale by means of which the proper adjustments to effect any desired dimensional operation within the capacity of the bit may be readily ascertained. Furthermore, the form of the extensible member of my invention is such, considered in combination with the means for attaching said member to the body of the bit, as to form a strong and unyielding combination of said member and said body, and therefore, in effect, to form a very durable and serviceable tool. These advantages are attained by means hereinafter described and which are fully illustrated in the drawings which accompany and form a part of this specification.

In the drawings, Figure 1 is an elevation of my invention on the plane of an adjustable member thereof, the latter being extended. Fig. 2 is a similar elevation of Fig. 1 except that the bit is closed. Fig. 3 is an elevation on a plane longitudinally transverse of that of Fig. 1. Fig. 4 is an elevation of the reverse side of that which is shown in Fig. 1. Fig. 5 is an end elevation of the bit when closed. Fig. 6 is a similar view, the bit being

extended; and Fig. 7 is an elevation on the same plane as Fig. 1 of a modified form of my invention.

Corresponding parts in all the figures are denoted by the same reference characters.

Referring to the drawings, 1 designates in a general way a boring-bit which has a shank 2, on one end of which is formed a tenon 3, which may be angular in cross-section or otherwise, adapted to be engaged by a bit-stock, chuck, or other rotatable device. (Not shown.) The opposite end of the bit 1, as shown herein, is in the form of a conical lead-screw 4. A cutting-lip 5, which may be integral with the bit 1, is formed on and projects longitudinally of the bit 1 and outwardly of a part 6 thereof, to which the lead-screw 4 is attached. The part 6 is circular in cross-section and has a helical face 6', which is slightly angular in form longitudinally of the bit 1, the apex of the angle being at the outside and forming the base of the lead-screw 4. A recess 7 is formed through one side of and diagonally of the part 6, the part mentioned being thus left in the form of a cutting edge 8.

The body 9 of the bit 1 has a perimeter which is in part formed by a continuation of the peripheral curve of the part 6 toward the shank 2 and in part by a plane face 9', which bisects the curve mentioned. A graduated scale 9" is delineated on and transversely of the body 9 and near an angular recess 10, which is formed in the part 6 and is adapted to receive a cutting edge 11, which may be practically similar in form to the cutting edge 8 and is formed on an adjustably-extensible cutting member 12, which is perimetally so formed as to register with the body 9, except at the ends thereof. A cutting-lip 13 is formed on the cutting member 12 and when the latter is not extended is radially equidistant with the cutting-lip 5 from the center of the bit 1. A slot 14 is formed longitudinally of the member 12, and a pivot, herein shown as a headed screw 14', passes therethrough and is tapped into the body 9, thus allowing the adjustment of the cutting member 12. A slot 15 is formed in and diagonally of the member 12, and a clamping member, herein shown as a guiding-screw 15', having a head 15'', passes through a washer 15''' and through the diagonal slot 15 and is tapped into the body 9. The angle

of the slot 15 is such as to guide the cutting-lip 13 and cutting edge 11, respectively, at all positions of adjustment of the member 12, the slot 14 permitting a complementary longitudinal movement of the cutting member 12 on the pivot-screw 14' for the purpose mentioned. It is evident, however, that the whole device shown may be practically operative whether the slot 15 be formed in the cutting member 12 on the exact angle before indicated or on an angle approximating said angle.

The operation and advantages of my invention will be readily understood and appreciated by those skilled in the arts in which it may be used. If, for instance, my improved extension-bit be used in the form shown in Figs. 1 to 6 and, for instance, with a bit-stock for boring wood, a hole of a diameter equal to that of the bit proper, herein referred to as 1, may be bored either with the member 12 in place on the body 9 or removed therefrom, as may be preferred. If a larger hole is to be bored and the cutting member 12 be attached to the body 9 by means of the screws 14' and 15', as illustrated by both forms shown in the drawings, the screws should be slightly backed out of the body 9, when the cutting member 12 may be adjusted by means of the scale 9" to bore a hole of any diameter which is within the capacity of the tool. When such adjustment has been effected, the member 12 may be secured in position by clamping it on the body 9 by means of the screws 14' and 15'. It should be noted that when any adjustment of the member 12 has been effected the cutting-lips 5 and 13 may operate on a common plane to detach the edges of the stock operated upon, and the cutting edges 8 and 11 will also operate on a common plane to cut said chips transversely of and remove them from said stock, the chips so cut by the cutting-lip 5 and cutting edge 8 being removed through the recess 7, and the circumferentially-surrounding chips, which are cut by the cutting-lip 8 and cutting edge 11, will be removed through the interspace between the outer face of the member 12 and the wall of the hole which is being bored.

For use in relatively hard material it may be necessary to construct my invention without the conical screw 4, whose function of holding the cutting lips and edges against the material which is to be removed thereby may be assumed by means separate and apart from the extension-bit and such as are commonly used for said purpose.

The cutting-lip 5 and cutting edge 8 not being essential to a practical operation of an extension-bit which would embody a form of my invention, one or both of them may, if desired, be omitted, together with a portion of the part 6 which overhangs the recess 7. Should this be done, the cutting edge 11 on

the member 12 should project slightly beyond the free end of the body 9. (See Fig. 7.) With this form of bit, however, the radius of the largest hole that could be bored would not exceed the width of the cutting member 12 plus in practice a slight addition thereto, because of the operation of the lead-screw 4.

I do not desire to be understood as limiting myself to the details of construction and arrangement as herein described and illustrated, as it is manifest that variations and modifications may be made in the features of construction and arrangement in the adaptation of the device to various conditions of use without departing from the spirit and scope of my invention and improvements. I therefore reserve the right to all such variation and modification as properly fall within the scope of my invention and the terms of the following claims.

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

1. In an extension-bit, in combination, a fixed member and an adjustable member, said adjustable member consisting of a plate extending longitudinally of the bit and at one end having a pivotal connection permitting movement of the plate lengthwise of the bit, said bit having a diagonal transverse slot and a clamping-screw passing through said slot into the bit.

2. An extension-bit, comprising a shank; a body; a part integral with the body and having a cutting-lip and a cutting edge respectively formed thereon; a pivot attached to the body; a cutting member having a cutting-lip and a cutting edge formed thereon and pivoted by said pivot, and having a slot formed diagonally thereof; a guiding member secured to the body and passing through the diagonal slot in the cutting member; and means for clamping the cutting member to the body.

3. An extension-bit, comprising, a shank; a body; a part integral with the body having a cutting-lip and a cutting edge respectively formed thereon; a pivot attached to the body; a cutting member having a cutting-lip, a diagonal slot and a cutting edge formed thereon and pivoted by said pivot and adjustable longitudinally of the body; a guiding member secured to the body and passing through the diagonal slot in the cutting member; and means for clamping the cutting member to the body.

In testimony whereof I have signed my name in the presence of the subscribing witnesses.

CHARLES F. SEBLOM.

Witnesses:

CHAS. H. DAVIDS,
J. M. HOCTOR.