(No Model.)

C. WHITUS, J. W. WILKS & N. J. WHITUS.

BRACE AND BIT GAGE.

No. 521,997. Patented June 26, 1894.

[Diagram of the brace and bit gage with labels and numbers for parts a, a', b, c, d, e, f, g, h, and i.]

WITNESSES,

[Names of witnesses: Francis, Annie, and John.]

INVENTOR.

[Signature: J. S. Duffin.]

THE NATIONAL LITHOGRAPHIC COMPANY,
WASHINGTON, D.C.
To all whom it may concern:

Be it known that we, CHARLES WHITUS, JOHN W. WILKS, and NANCY J. WHITUS, citizens of the United States, residing at Chester, in the county of Chester and State of South Carolina, have invented certain new and useful Improvements in Brace-and-Bit Gages; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention is a new brace and bit gage and consists in the novel construction and arrangement of its parts.

In the accompanying drawings: Figure 1 is a side view of our invention, showing the manner in which it is attached to the brace. Figure 2 is a perspective view of the slotted arm A, having the right angle ring foot a. Figure 3 is a perspective view of a nut for clamping the arms A and C, together and provided with loop f, through which the bit works. Figure 4 is a perspective view of a sleeve provided with an integral slotted arm C, having cross arms c'. Figure 5 is a perspective view of the arm A, without the slots a'. Figure 6 is a perspective view of adjustable slotted slide block for securing the arms A and C, together and holding the bit chuck between sleeve C, and itself and provided with a loop for the bit to work through.

Our invention is described as follows: It consists of an arm A, having on its outer end a ring foot a, extending at right angles to the body of the arm. Said arm A may be solid as shown in Fig. 5, or it may be provided with an elongated slot a', running nearly the entire length of the arm.

B represents the bit chuck of the brace which regulates and secures the means which holds the bit b, in place.

C is an open sleeve which surrounds and claps the bit chuck B, around its smaller part, and owing to the fact that it is open it can be made to fit, by expansion or contraction, a larger or smaller bit chuck. Extending from the forward end of said sleeve and integral therewith is an arm c, which is bent up to Cape the larger part of the bit chuck, said arm is provided with a longitudinal slot c', and at its extreme end are smaller cross arms c', extending from the sides of said arm c, which in use are bent up over the arm A, as guides to hold it in place.

D represents a nut provided with the ears d, between which and on the face d', the arms A and C, rest and move. In the upper face of the nut is fitted a thumb screw e, provided with a washer e', said thumb screw passes through the slots a', and c', the washer e', working against the arm A. By this means we can move the said arm A, up and down, thus setting the gage at any desired depth.

The nut D, is provided with a thimble or 65 loop f, through which the bit b, works. This thimble or loop is for the purpose of holding the gage firmly in place when great pressure is brought against the ring foot a, as the bit enters the wood. If it were not for said nut the gage would slip up as the sleeve C, fits loosely around the neck of the brace head, and the loop f, prevents the arms A, and C, largely from springing laterally when the foot a, strikes the wood.

D', represents an adjustable slotted slide block as used when we use the arms A, and C, without the slots, in which case the said arms pass through the slot g, and under the arch g', and washer g'' and are held firmly together by means of said washer, which firmly presses them together by means of a thumb screw g', or any other equivalent device. Said adjustable slotted slide block forms the treble function of holding the arm A, from springing out of place, of securing the bit chuck between sleeve C, and itself, and of securing the relative adjustment of arms A, and C.

The arm A, may be moved up or down and the bit b, can bore no deeper than the distance between its outer end and the ring foot a, of the gage. When the foot strikes the wood, being bored into, we give the bit two or more turns which breaks the hold of the screws from the wood. We then, without turning the bit backward, pull it out of the bored hole and it brings with it the chips and thus clears the hole. Heretofore it has been the custom, when the hole was bored deep enough, to turn the bit backward two or three
times to release it from its hold in the wood and then draw it out, leaving part of the chips in the hole.

The open sleeve of our invention fits all bit chucks that screw off and on and, therefore, the gage is always ready for use, and owing to the fact that our gage is secured to the bit chuck we can gage the smallest and shortest bits or drills. Other gages, when they strike the wood, continue to turn and thus mark and deface the surface. When our gage strikes the wood it stops turning and rests solidly against the wood; the point of friction being centrally located where the point of the bit chuck meets the upper face of the adjustable slotted slide block.

We claim—

1. The bit gage, consisting of the adjustable arm A, having the ring foot a, at right angles with said arm; arm c, adapted to be adjustably secured to said arm A; open sleeve C, integral with or rigidly secured to the rear end of said arm c, and adapted to embrace and clasp a large or small bit chuck, B; and an adjustable slotted slide block D', embracing the arm A, and the arm c, having a face bearing against the face of the bit chuck, and having a clamping means securing the relative adjustment of arms A, and c, and also securing said slide block to hold the bit chuck between sleeve C, and said block, substantially as shown and described and for the purposes set forth.

2. The bit gage, consisting of the adjustable arm A, having the ring foot a, at right angles with said arm; arm c, adapted to be adjustably secured to said arm A; adjustable slotted slide block D', having a face bearing against the face of the bit chuck, and a mortise for said arms to work through, and a 40 washer $g_j$, working in said mortise provided with flanges, and a thumb-screw $g_h$, for securing said arms together; and loop f, for the bit b, to work through; and sleeve C, integral with or rigidly secured to the rear end of said arm c, and adapted to embrace and clasp a large or small bit chuck, B, substantially as shown and described and for the purposes set forth.

3. The bit gage, consisting of the adjustable arm A, having the ring foot a, at right angles with said arm; arm c, provided with cross arms to embrace arm A; said arm adapted to be adjustably secured to said arm A; adjustable slotted slide block D', having a face bearing against the face of the bit chuck, and a mortise for said arms to work through, and a washer $g_j$, working in said mortise provided with flanges, and a thumb screw $g_h$, for securing said arms together; and loop f, for the bit b, to work through; and sleeve C, integral with or rigidly secured to the rear end of said arm c, and adapted to embrace and clasp a large or small bit chuck, B, substantially as shown and described and for the purposes set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

CHARLES WHITUS.
JOHN W. WILKS.
NANCY J. WHITUS.

Witnesses:
Graham l. Gordon,
Anne A. Lansdale.