(No Model.)

T. J. BUSH.

BORING GAGE.

No. 257,288. Patented May 2, 1882.

Fig. 1.

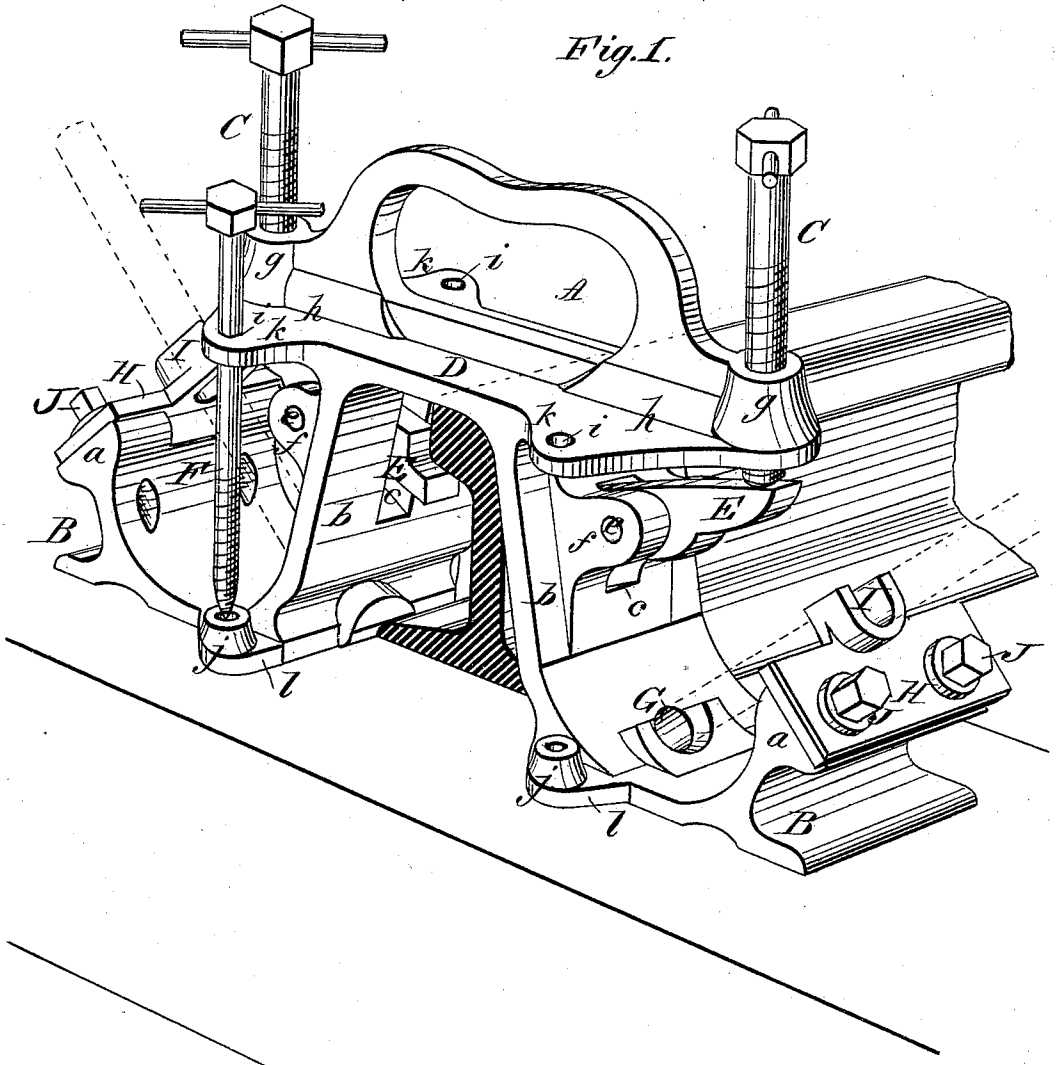
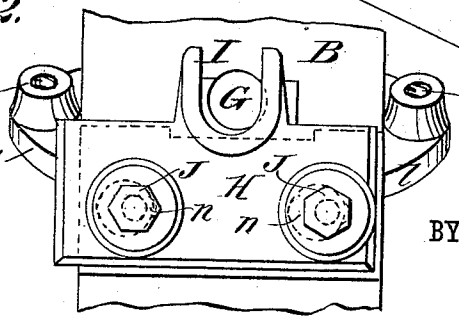


Fig. 2.



WITNESSES:

Donn Twitchell

C. Sedgwick

INVENTOR:

T. J. Bush

BY Munn & Co

ATTORNEYS.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

THOMAS J. BUSH, OF LEXINGTON, KENTUCKY.

BORING-GAGE.

SPECIFICATION forming part of Letters Patent No. 257,288, dated May 2, 1882.

Application filed January 12, 1882. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. BUSH, of Lexington, in the county of Fayette and State of Kentucky, have invented a new and Improved Boring-Gage, of which the following is a full, clear, and exact description.

The object of my invention is to provide a gage whereby diagonal holes may be accurately drilled or bored, and whereby the holes may be made to intersect each other at any desired depth in the object being bored or drilled, the gage being more especially intended for use in connection with my new and improved interlocking bolts, shown and described in my application for Letters Patent therefor which was allowed November 2, 1881.

My invention consists principally of a suitable frame adapted to be secured to the object to be bored or drilled, and provided with oppositely-inclined rests or passages for guiding the boring or drilling tool.

I have shown in the annexed drawings my improved gage applied for boring railroad-ties for the insertion of my said interlocking bolts for securing the railroad-rail. I do not confine myself to such application of the gage; but the means I employ for securing the gage to the rail in position for boring, consisting essentially of two jaws pivoted in the frame and operated by suitable screw-bolts, also constitutes a principal feature of my invention.

The invention also consists in means for securing the gage to the tie itself or other object to be bored or drilled, of the means whereby the direction of the tool may be changed, consisting principally of a universally-movable guide plate or rest, and of the construction, arrangement, and combination of parts, all as hereinafter more fully described.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is a perspective view of my improved boring-gage attached to a railroad-rail in position for boring the tie; and Fig. 2 is a detailed perspective view, showing the movable guide plate or rest.

In the form of gage shown in the drawings the main frame A of the gage is cast or formed with the main base-plates or supports B B, the upright walls *b b*, and the elevated table D, the walls being such distance apart and the table such height as to permit the frame to be placed over a railroad-rail with the supports B B resting upon the tie, as shown in Fig. 1. The walls *b b* of the frame are formed with the slots *c c* and with the outwardly-projecting lugs *f f*. The jaws E E are pivoted in these lugs upon the pivots *e e*, and their inner ends pass through the slots *c c* for engagement with the under side of the tread of the rail when the outer ends of the jaws are depressed for that purpose.

The outer ends of the jaws E E may be depressed for clasping the tread of the rail by a lever, cam, or wedge; but the means I prefer to use for this purpose consists of the screw-rods C C, which pass through the internally-threaded sleeves *g g*, immediately above the outer ends of the jaws, which sleeves form a part of the extensions *h h* of the elevated table D.

In case the rail has not been put in place upon the ties when the gage is to be used, the gage will be secured upon the tie itself by means of the screw-rods F F, (four in number,) which pass down through the guide-passages *i i* and through the internally-threaded sleeves *j j*, the former being made through the side extensions, *k k*, of the elevated table, the latter in the extensions *l l* of the base-plates B B.

G G represent the holes or passages through the base-plates B B, through which the auger-bit or other boring or drilling tool passes; and H H represent the movable rests or plates which are secured upon the inclined upward extensions *a a* of the base-plates. These plates H H are formed with the U-shaped rests I I, in which the tool is placed and by which it is guided, and these plates are made adjustable in all directions by means of the screw-bolts J J, which hold the plates upon the extensions *a a* and the enlarged openings *n n* (shown in dotted lines in Fig. 2) through the said plates, through which openings the bolts pass.

In use the plates H H are first to be adjusted upon the extensions *a a* by the bolts J J, so that the rests will properly register with the

passages G G, to hold the boring-tool (to be placed in the passage and in the rest) at the proper inclination for boring the holes at the proper angle and to give the tool the proper direction, so that the holes will intersect each other the proper depth in the tie or object being bored, according to the length of the bolts to be used. The gage is then to be placed upon the tie and secured to the rail by screwing down the rods C C, or to the tie by screwing down the rods F, as the case may be. In this manner the frame will be held firmly in place upon the tie while both holes are being bored, and by means of the rests I I and passages G G the tool is guided in such manner that both holes will have the same degree of slant and will always properly intersect each other at the desired depth in the object being bored.

It will be understood that for other applications of my improved boring-gage the means for securing the frame upon the object to be bored or drilled may be variously changed, according to the requirements of the particular application or use.

The jaws E E are pivoted in such manner in the frame that the weight of the inner ends of the jaws is greater than that of the outer ends, so that when the rods C C are unscrewed for detaching the frame from the rail the inner ends of the jaws will of their own weight disengage the tread of the rail.

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

1. A gage for boring intersecting diagonal holes, consisting of a suitable frame adapted to be secured upon the object to be bored, and formed with inclined passage rests or supports for the tool, substantially as described.

2. The frame A of the gage, provided with the hinged jaws E E, substantially as and for the purposes set forth.

3. The combination, with the frame A, of the screw-rods F, substantially as and for the purposes set forth.

4. The combination, with the frame A, formed with the passages G, of the adjustable rests or plates H, substantially as and for the purposes set forth.

5. The gage for boring diagonal intersecting holes, made substantially as herein shown and described, consisting of the frame A, formed with the elevated table D, and the passages G, in combination with rests or plates H, jaws E, and the screw-rods C C, substantially as and for the purposes set forth.

THOMAS J. BUSH.

Witnesses:
H. A. WEST,
C. SEDGWICK.