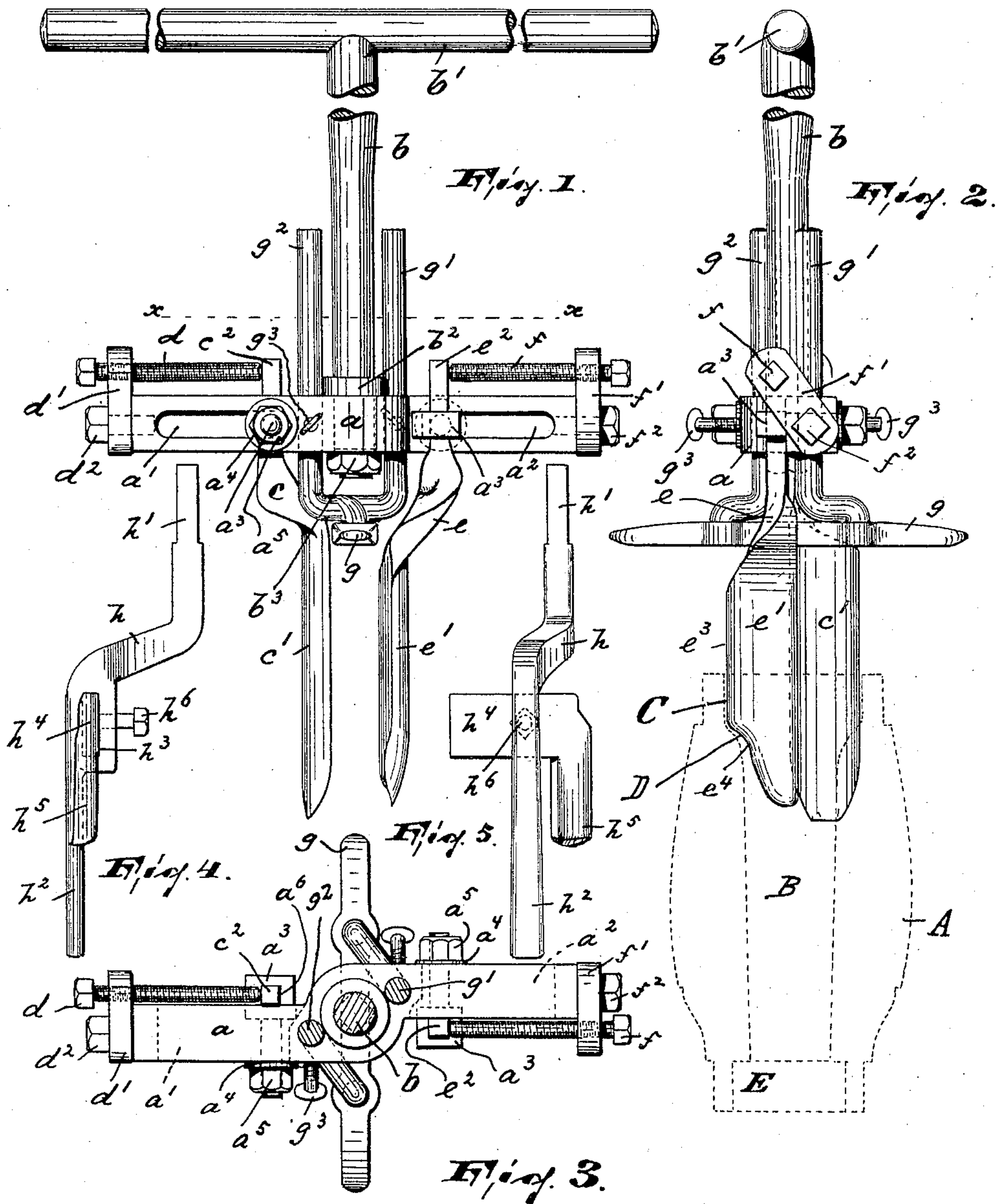


(No Model.)

H. GRUNER.
WHEEL HUB DRILLING DEVICE.

No. 575,835.

Patented Jan. 26, 1897.



WITNESSES:

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UNITED STATES PATENT OFFICE.

HENRY GRUNER, OF PATERSON, NEW JERSEY.

WHEEL-HUB-DRILLING DEVICE.

SPECIFICATION forming part of Letters Patent No. 575,835, dated January 26, 1897.

Application filed July 6, 1896. Serial No. 598,103. (No model.)

To all whom it may concern:

Be it known that I, HENRY GRUNER, a citizen of the United States, residing in Paterson, Passaic county, and State of New Jersey, have
5 invented certain new and useful Improvements in Wheel-Hub-Drilling Devices; and I 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
10 to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

15 The object of this invention is to provide a wheel-hub-drilling device or auger having adjustable guides and cutters, by means of which the holes for the box and the axle-nut can be bored out quickly and uniformly, of
20 simple, strong, and durable construction, reliable in operation, and easily handled.

The invention consists in the improved drilling device, its adjustable guide and cutters, and in the combination and arrangement of the various parts, substantially as
25 will be hereinafter more fully described and finally embodied in the clauses of the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several views, Figure 1 is a front elevation of my improved
30 drilling device; Fig. 2, a side elevation thereof; Fig. 3, a sectional view on the line $x x$ of Fig. 1; and Figs. 4 and 5 show a front and side elevation, respectively, of the cutter used in
35 connection with my improved drilling device.

In said drawings, a represents a brace or arm secured in its center by means of the
40 nut b^3 (and the collar b^2) to the rod b , having the handle-bar b' arranged at its other end and at right angles thereto. The arm a is provided at each side of its center with an elongated horizontal slot a' and a^2 , respectively, in each of which is adjustably
45 ranged, by means of the washer a^4 and nut a^5 , a block a^3 , projecting through its respective slot and provided with a vertical hole or opening a^6 , (see Fig. 3,) adapted to receive the shank c^2 and c^3 of the guide c and cutter
50 e , respectively.

The guide c , provided with the curved guide-plate c' , is horizontally adjustable

within the slot a' and vertically within the hole or opening a^6 of the block a^3 , but can also
55 be adjusted to an angular position with relation to the arm a by means of the set-screw d , arranged in the plate d' , which latter is pivotally and adjustably secured by the set-screw or bolt d^2 to the free end of the said
60 arm a .

The cutter e , having the cutting-blade e' , is capable of being adjusted in the same manner—that is to say, horizontally together with the block a^3 , vertically within the hole of said
65 block—and into an angular position by means of the set-screw f , penetrating the plate f' , adjustably secured to the free end of the arm a by the screw f^2 , as clearly shown in the drawings. The cutting-blade e' is provided with
70 the cutting edges e^3 and e^4 , arranged substantially to conform to the shape of the hole $C D$ to be drilled in the hub A for the reception of the head of the box to be placed within said hub and its central bore B , respectively, as will be manifest.
75

For drilling out the opening E at the outer end of the hub A for the reception of the nut for the axle a cutter is used, substantially as shown in Figs. 4 and 5. In said Figs. 4 and
80 5 h represents a bar provided at its lower portion with the guide-arm h^2 and at its upper portion with the shank h' , adapted to take the place of the shank e^2 of the cutter e when the opening E is to be drilled. The bar h is also provided, substantially in its central
85 portion, with a rectangular slot h^3 , adapted to receive the arm h^4 of the cutter-blade h^5 . The arm h^4 is horizontally adjustable within the slot h^3 and is secured therein by means of the set-screw h^6 , as clearly shown. When said
90 cutter is used, a gage is used in connection therewith. Said gage g is provided with two parallel rods g' and g^2 , arranged at right angles to the gage and adapted to be vertically adjustably secured in the arm a by means of
95 the set-screws g^3 . This gage will determine the depth of the hole E in the hub A , that is to say, when drilling with the cutter h said gage is adjusted so that it will bear against the end of the hub when the blade h^5 has cut
100 the required depth of the hole E .

Before proceeding to bore the holes C , D , and E it will be understood that the hub A has already been provided with the central

bore or opening B by means of any suitable and well-known device.

I do not intend to limit myself to the precise construction shown and described, as various alterations can be made without changing the scope of my invention; but

What I claim as new, and desire to secure by Letters Patent, is—

1. A hub-drilling device, consisting of a T-shaped handle-bar, an arm secured to said handle-bar and provided at each side with an elongated slot, a block adjustably arranged in each slot, a guide vertically adjustable in one of said blocks, and a cutter vertically adjustable in the other block, all said parts, substantially as and for the purposes described.

2. A hub-drilling device consisting of an arm provided at each side of its center with an elongated slot, a block adjustably arranged in each of said slots and provided with a vertical slot or opening, a guide adjustably arranged in the vertical slot of one of said blocks, and a cutter adjustably arranged in the vertical slot of the other block, all said parts, substantially as and for the purposes described.

3. A hub-drilling device, consisting of an arm provided at each side of its center with an elongated slot, a block adjustably arranged in each of said slots, a guide vertically adjustable in one of said blocks, a cutter vertically adjustable in the other block, a plate ad-

justably arranged at each end of the arm, and a set-screw in each of said plates and engaging the guide and cutter respectively, all said parts, substantially as and for the purposes described.

4. A hub-drilling device, consisting of an arm provided at each side of its center with an elongated slot, a block adjustably arranged in each of said slots, a guide vertically adjustable in one of said blocks, a cutter vertically adjustable in the other block, and a gage vertically adjustable in the arm, all said parts, substantially as and for the purposes described.

5. A hub-drilling device, consisting of an arm provided at each side of its center with an elongated slot, a block adjustably arranged in each of said slots, a guide vertically adjustable in one of said blocks, a cutter vertically adjustable in the other block, a cutting-blade horizontally adjustable in the cutter, and a gage vertically adjustable in the arm, all said parts, substantially as and for the purposes described.

In testimony that I claim the foregoing I have hereunto set my hand this 16th day of June, 1896.

HENRY GRUNER.

Witnesses:

ALFRED GARTNER,
ALBIN HAASLEBER.