

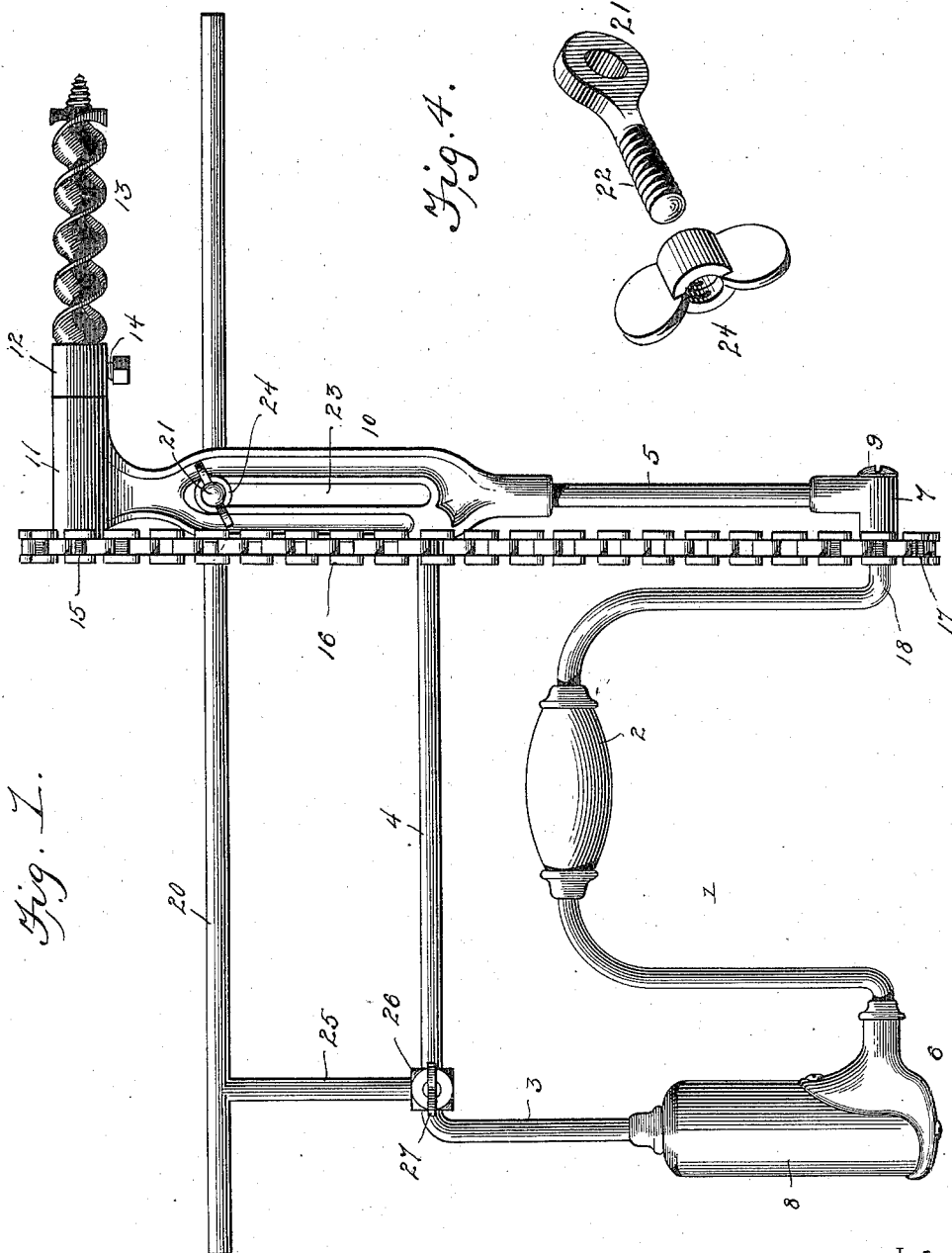
(No Model.)

2 Sheets—Sheet 1.

B. OAKES.
BORING MACHINE.

No. 579,172.

Patented Mar. 23, 1897.



Inventor
Ben Oakes,

Witnesses

E. H. Monroe.
R. M. Smith.

By *his* Attorneys,

C. A. Snow & Co.

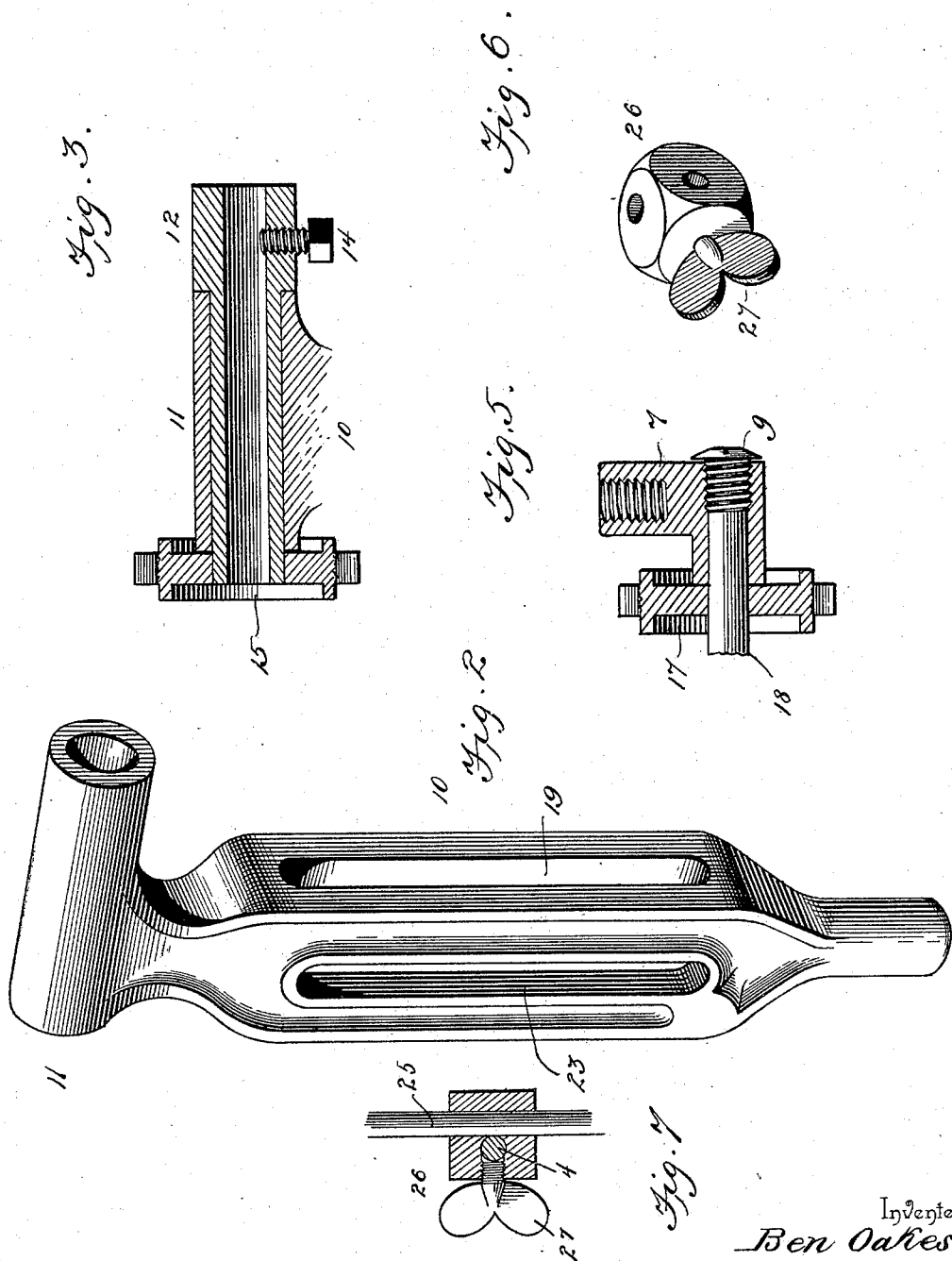
(No Model.)

2 Sheets—Sheet 2.

B. OAKES.
BORING MACHINE.

No. 579,172.

Patented Mar. 23, 1897.



Witnesses

E. N. Monroe.
R. M. Smith.

By his Attorneys,

C. A. Snow & Co.

Inventor
Ben Oakes,

UNITED STATES PATENT OFFICE.

BEN OAKES, OF DETROIT, MICHIGAN.

BORING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 579,172, dated March 23, 1897.

Application filed July 30, 1896. Serial No. 601,114. (No model.)

To all whom it may concern:

Be it known that I, BEN OAKES, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Boring-Machine, of which the following is a specification.

This invention relates to boring-machines; and the object in view is to provide a simple, cheap, and convenient device of the character referred to, in which an adjustable gage is employed for regulating the depth of the hole bored and also the location of said hole and by means of which the boring operation may be effected in circumscribed places which would not be accessible with the ordinary form of brace and bit.

Other objects and advantages of the invention will appear in the course of the ensuing description.

The invention consists in a boring-machine embodying novel features and details of construction and arrangement of parts, as hereinafter fully described, illustrated in the drawings, and incorporated in the claims.

In the accompanying drawings, Figure 1 is a side elevation of the complete machine constructed in accordance with the present invention. Fig. 2 is an enlarged perspective view of the slotted portion of the frame. Fig. 3 is a detail section taken through the bearing-sleeve, in which the bit-holding spindle or chuck is journaled. Fig. 4 is a detail perspective view of the eye-clamp for holding the gage. Fig. 5 is an enlarged detail section showing the manner of mounting one end of the brace in the frame. Fig. 6 is a detail perspective view of the gage-adjusting clip. Fig. 7 is a detail sectional view of the same.

Similar numerals of reference designate corresponding parts in the several figures of the drawings.

Referring to the drawings, 1 designates a brace of the ordinary form and provided with the usual revoluble handle 2. The ends of this brace are journaled in the frame of the machine, a portion of which embodies the bars 3, 4, and 5, which are assembled to form a U-shaped yoke, the same being provided at its extremities with bearings 6 and 7 for the ends of the brace 1. A handle 8 surrounds the bar 3 adjacent to the brace 1 and forms a handhold by means of which the device

may be steadied while in operation, and the bearing 6 is for convenience attached to said handle. The other bearing 7 is provided with a through-bore into which the adjacent end of the brace is inserted, and a set-screw 9 is inserted in the opposite end of the bore and brought to bear against the end of the brace for taking up wear and preventing the same from rattling and becoming loose. The bearing 7 is threaded upon the contiguous end of the bar 5 for the purpose of taking up slack in the drive-chain, hereinafter described.

To the opposite end of the bar 5 from that upon which the bearing 7 is arranged is secured a slotted arm or extension 10, provided at its end with a bearing-sleeve 11, in which is journaled a hollow spindle or chuck 12 for the reception of the auger, drill, or bit 13, the latter being held in the chuck by means of a binding-screw 14 or equivalent device. The hollow spindle or chuck 12 rotates on an axis parallel to the axis of the brace 1 and is provided at the inner end with a sprocket-wheel 15, over which runs a drive-chain 16, the said chain also running around a sprocket-wheel 17 on the shaft portion 18 of the brace 1, whereby rotary motion is transmitted from the brace to the spindle or chuck 12.

The arm or extension 10 is provided with a slot 19, extending longitudinally thereof, through which passes a gage-rod 20, the same being capable of longitudinal or transverse adjustment through or in said slot and being clamped at any adjustment by means of an eye-clamp 21, which embraces the gage-rod and has its threaded shank 22 extended through another longitudinal slot 23 in the arm or extension 10 and engaged by means of a winged nut 24. By tightening the nut 24 the gage-rod 20 may be moved into frictional contact with the side of the slot 19 and held until said nut is loosened. The rod 20 is provided at its inner end with a lateral extension 25, which passes through and is adapted to slide within an opening in a clip 26, slidingly mounted on the bar 4 and held by means of a set-screw 27. By means of the clip 26 the gage-rod 20 may be moved longitudinally and brought to any desired point, while the slotted arm or extension 23, in connection with the eye-clamp 21 and nut 24, permits said gage-rod to be adjusted lat-

erally or toward and away from the auger or bit for regulating the distance of the hole from the edge of a board or other article or the distance between adjacent holes, &c.
 5 By adjusting the gage 20 longitudinally the depth of the hole to be bored may be regulated.

By means of the construction above described it will be seen that power is transferred directly from the shaft of the brace to the spindle or chuck which holds the bit. It will also be seen that the gage is both longitudinally and transversely adjustable, that it may be adjusted quickly and easily, and
 15 that the location and depth of the holes may be accurately regulated thereby.

It will be understood that the device is susceptible of changes in the form, proportion, and minor details of construction, which
 20 may accordingly be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed as new is—

25 1. In a portable boring-machine, a U-shaped frame having an arm extension at one corner, a rotating bit-holding spindle journaled in said arm extension, a brace journaled within the frame, a drive connection between the
 30 brace and the spindle, and a gage-rod ar-

ranged parallel with the spindle and having separate adjustable connections respectively with the frame and the arm extension thereof, substantially as set forth.

2. In a portable boring-machine, a U-shaped 35 frame having an arm extension at one corner provided at its outer end with a bearing-sleeve and formed with longitudinally-disposed slots, a bit-holding spindle journaled in said bearing-sleeve, a brace journaled 40 within the frame, a drive connection between the brace and the spindle, a gage-rod arranged parallel with the spindle and extending through one of the longitudinally-disposed slots of the arm extension, said gage-rod 45 being provided near its inner end with a lateral extension, a clamp slidably engaging the lateral extension of the gage-rod and one side of the U-shaped frame, and a separate clamp slidably receiving the gage-rod and 50 adjustably fitted in one of the slots of the arm extension, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

BEN OAKES.

Witnesses:

THOS. F. NORRIS,
 HENRY CISSEL.