

No. 757,734.

PATENTED APR. 19, 1904.

C. E. GADFIELD.
BORING MACHINE.

APPLICATION FILED JULY 17, 1903.

NO MODEL.

Fig. 1

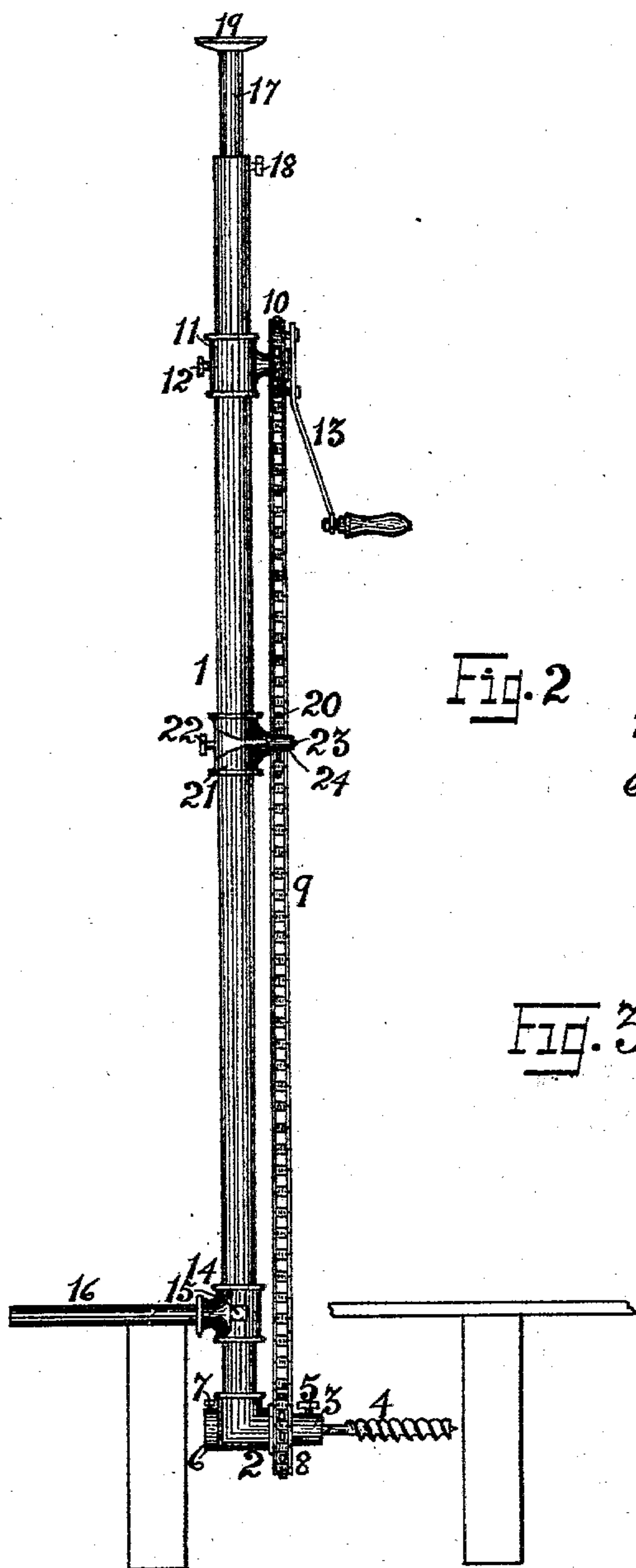


Fig. 2

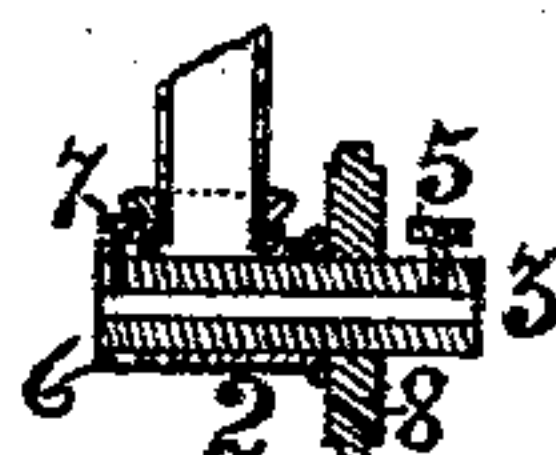
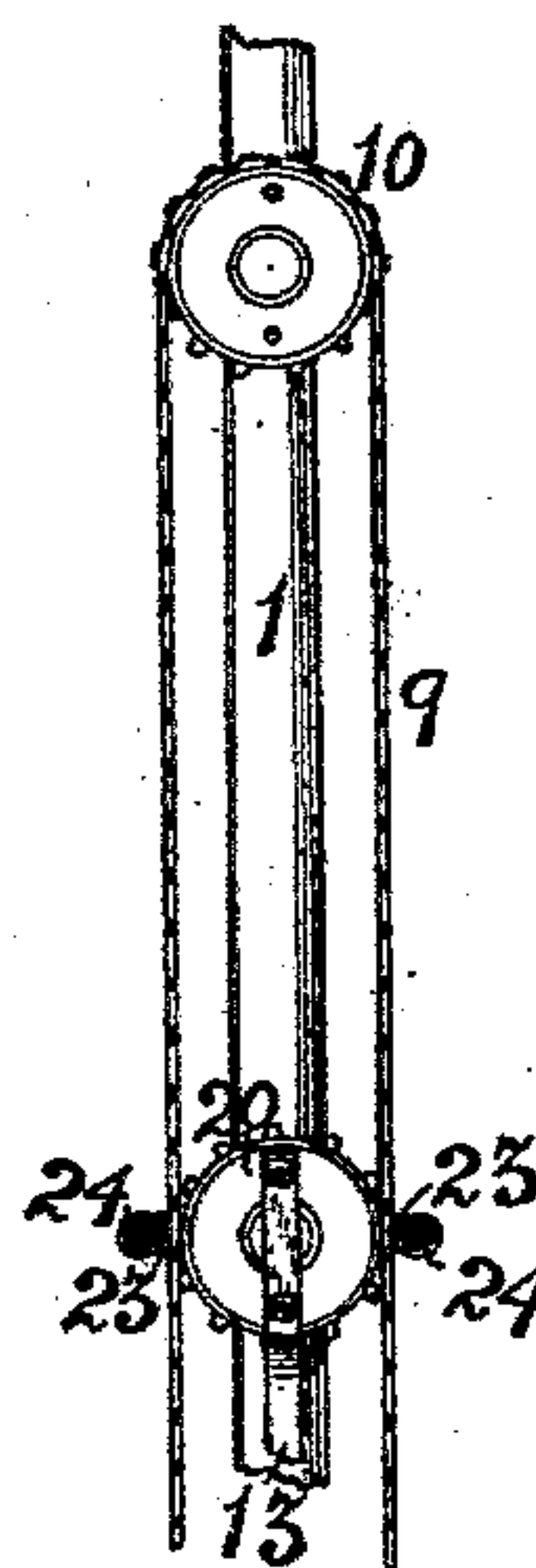


Fig. 3



Witnesses

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CHARLES E. GADFIELD, OF WELLINGTON, OHIO.

BORING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 757,734, dated April 19, 1904.

Application filed July 17, 1903. Serial No. 166,064. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. GADFIELD, a citizen of the United States, residing at Wellington, in the county of Lorain and State of Ohio, have invented certain new and useful Improvements in Boring-Machines, of which the following is a specification.

My invention relates to improvements in "boring-machines;" and the primary object of the invention is to produce a generally improved device of this class which will be exceedingly simple in construction, efficient in operation, and which will be better adapted to its intended purposes than any other device of the same class with which I am acquainted.

The invention is especially designed for the use of electricians in installing electric lights in houses, public buildings, &c., for boring horizontal holes in the stringers beneath floors and in floors close to washboards, in walls, corners, and similar places where an ordinary brace cannot be used. It can also be used to advantage by plumbers, gas-fitters, and others for boring holes for the reception of water-pipes, gas-pipes, &c.

With these ends in view the invention consists in the novel construction hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims.

Referring to the accompanying drawings, forming a part of this specification, Figure 1 is a plan view of my improved tool in its operative position for boring holes in the stringers beneath floors and similar places. Fig. 2 is a horizontal sectional view of the lower portion of the tool, showing a more detailed view of the reversible chuck. Fig. 3 is a detail view of the adjustable sprocket-wheels and the sprocket-chain.

Similar numerals of reference indicate like parts throughout all the figures of the drawings.

1 designates the main body portion of the machine made up of a piece of gas-pipe or bicycle-tubing and provided at its lower end with a part of a "T-pipe" 2, screwed thereto, which is adapted to receive and form a bearing for a reversible chuck 3, mounted

therein, which said chuck 3 is provided with a central opening adapted to receive at either of its ends the shank or head of the bit 4.

5 designates a set-screw for holding the same securely in position. Upon the other end of this chuck 3 is secured a sleeve or shoulder 6, provided with a set-screw 7 for holding the chuck 3 in its bearing and preventing lateral movement, and also for holding the shank or head of the bit 4 in position when the same is mounted at this end of the chuck 3. By removing this sleeve or shoulder 6 the chuck 3 may be reversed in the bearing 2. When it is desired to have the bit on the reverse side opposite that upon which the handle and sprocket wheels and chain are placed when boring overhead in side walls and similar places and when desiring to change the tool from right-handed to left-handed, the set-screw 5 is loosened and the bit 4 reversed and mounted in the central opening of the opposite side of the chuck 3 and the set-screw 7 tightened, holding the bit 4 firmly therein.

Carried by and mounted on the chuck 3 is a sprocket-wheel 8, by means of which the same is revolved, and which said sprocket-wheel 8 receives its motion from a sprocket-chain 9, passing over a sprocket-wheel 10, mounted on a sleeve or ferrule 11, adjustably mounted on the main body portion 1, near the top portion thereof, by means of a set-screw 12.

Secured to the sprocket-wheel 10 in any suitable manner is an operating-crank 13, by means of which motion is transmitted to the mechanism hereinbefore described.

14 designates a sleeve or ferrule adjustably secured to the main body portion 1, near the lower end thereof, by means of a set-screw 15. Secured in said ferrule 14 is a supporting arm or bar 16, designed to steady and support the tool when working and to regulate the distance of the bit from the top of the timber upon which said arm or bar 16 rests.

When the chuck 3 is reversed in the bearing 2 and when the bit 4 is placed in the opposite end of the chuck 3, when it is desired to use the machine for boring in side walls

and when boring in side walls overhead and when otherwise desirable or necessary, the supporting arm or bar 16 is removed or reversed, so as not to interfere with any position desired.

17 designates a lengthening and supporting bar adjustably mounted in the main body portion 1 by means of the set-screw 18 and having secured to the lower portion thereof or integral therewith a bracket or base-plate 19, which rests on the floor or ground when it is desired to use the machine in a vertical position when boring in side walls and for other overhead work. The lengthening and supporting bar 17 may be removed, if desired, when not needed when used in the position shown in Fig. 1 and similar positions.

20 designates an auxiliary sprocket-wheel slidably and adjustably mounted on the main body portion 1 by means of a sleeve or ferrule 21, secured in any desired position by means of a set-screw 22.

Secured to the sleeve or ferrule 21 in any suitable manner or formed integral therewith are laterally and forwardly projecting arms 23, carrying on their ends rollers 24, which take over the outside of the sprocket-chain 9, holding the same in proper position and preventing said sprocket-chain 9 from jumping off of the sprockets of the sprocket-wheel 20 when the operating-crank 13 is secured thereto, as shown in Fig. 3 of the drawings.

It will thus be seen that when it is desired, by reason of certain positions in which it is desired to use the tool, to apply the source of power at a certain position along the main body portion 1 of the tool the operating-crank 13 is removed from the sprocket-wheel 10 and attached to the auxiliary sprocket-wheel 20, as shown in Fig. 3, and the same may be adjusted to any desired position by means of the sliding sleeve or ferrule 21 and set-screw 22, hereinbefore described.

From the foregoing description, taken in connection with the accompanying drawings, the operation and advantages of my invention will be readily understood.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principles or sacrificing any of the advantages of this invention.

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

1. A boring-machine, consisting of a main body portion provided at its base end with a suitable bearing, a chuck mounted in said bearing, a sprocket-wheel carried by and mounted on said chuck, a sleeve or shoulder secured to

said chuck, an adjustable sleeve or ferrule secured to said main body portion, a sprocket-wheel mounted thereon and adapted to carry an operating-crank, an auxiliary sleeve or ferrule slidably and adjustably mounted on said main body portion, an auxiliary sprocket-wheel mounted thereon and adapted to carry said operating-crank, and a sprocket-chain passing over said sprocket-wheels whereby motion is transmitted to said chuck.

2. In a boring-machine, the combination with the main body portion provided at its lower end with a suitable bearing, a chuck mounted in said bearing, a sprocket-wheel mounted on said chuck, a sleeve or shoulder secured to said chuck, and an adjustable sleeve or ferrule secured to said main body portion and carrying a supporting-bar; of a second adjustable sleeve or ferrule secured to said main body portion, a sprocket-wheel mounted thereon, an operating-crank secured to said sprocket-wheel, and a sprocket-chain passing over said sprocket-wheels whereby motion is transmitted to said chuck.

3. In a boring-machine, the combination with the main body portion provided at its lower end with a suitable bearing, a chuck mounted in said bearing and provided with a sprocket-wheel, a second adjustable sleeve or ferrule secured to said main body portion and carrying a sprocket-wheel, and a sprocket-chain passing over said sprocket-wheels; of a third or auxiliary sleeve or ferrule, carrying an auxiliary sprocket-wheel, slidably and adjustably mounted on said main body portion, an operating-crank secured to said auxiliary sprocket-wheel, and arms projecting from said auxiliary sleeve or ferrule and carrying rollers which take over the outside of the sprocket-chain to hold the same in contact with the sprocket-wheel.

4. In a boring-machine, the combination with the main body portion provided at its lower end with a suitable bearing, a chuck mounted in said bearing and provided with a sprocket-wheel, an adjustable sleeve or ferrule secured to said main body portion and carrying a sprocket-wheel, and a sprocket-chain passing over said sprocket-wheels; of a sleeve or ferrule slidably and adjustably mounted on said main body portion, and an auxiliary sprocket-wheel mounted on said sleeve or ferrule and provided with an operating-crank.

In testimony whereof I have affixed my signature in presence of two witnesses.

CHARLES E. GADFIELD.

Witnesses:

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R. HATHAWAY.