

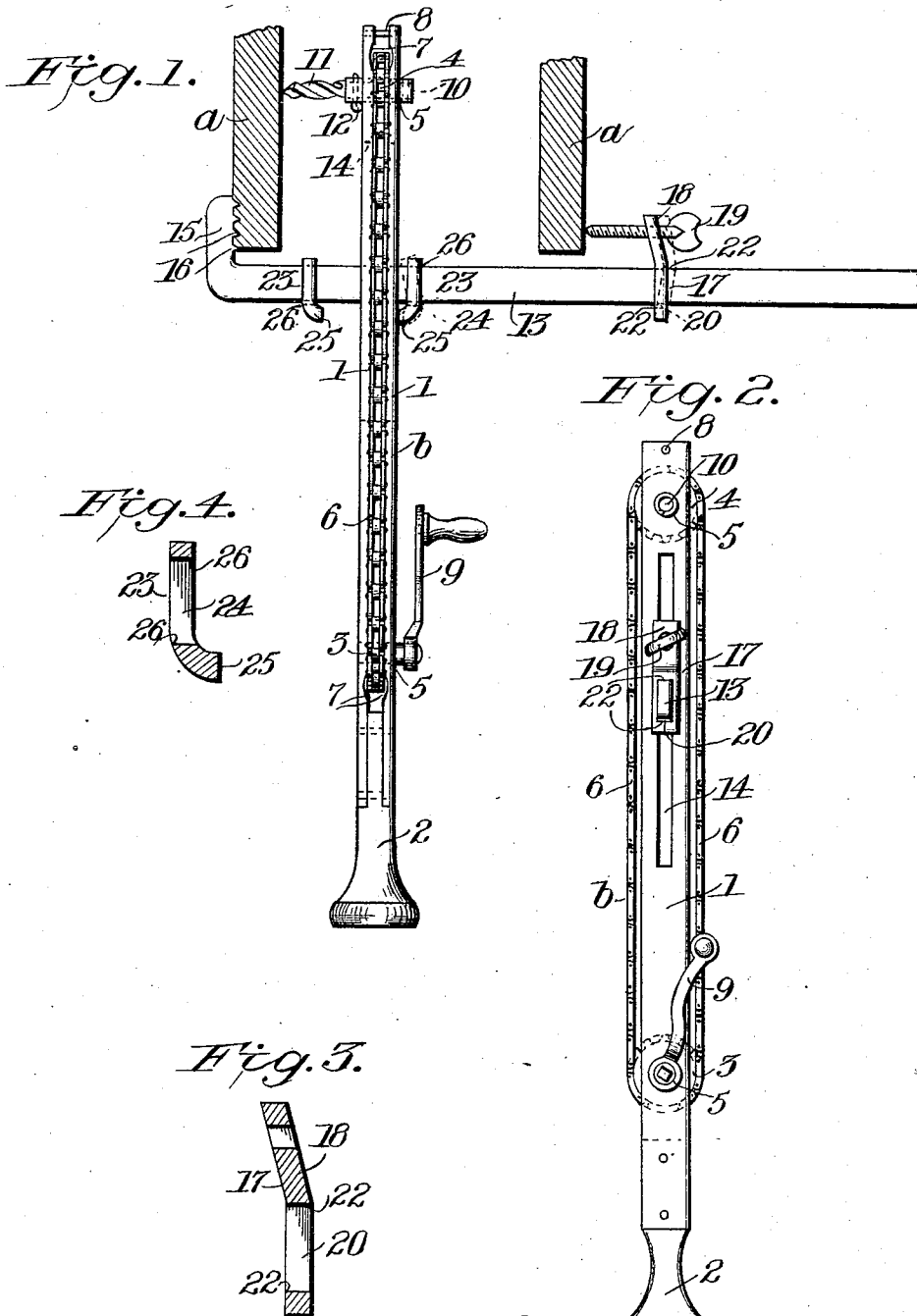
J. P. WEDDLE & G. A. ROBINSON.

BORING MACHINE.

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968,298.

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Witnesses
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UNITED STATES PATENT OFFICE.

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BORING-MACHINE.

968,298.

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To all whom it may concern:

Be it known that we, JOHN P. WEDDLE and GEORGE A. ROBINSON, both citizens of the United States, residing at Memphis, in the county of Shelby and State of Tennessee, have invented certain new and useful Improvements in Boring-Machines, of which the following is a specification.

Our invention relates to boring machines of the class in which the bit is adapted to be operated in positions inaccessible by means of the ordinary longitudinal bit-brace.

The objects of our invention are to provide a device of this class in which after the device has been fixed in position for the boring operation several holes may be bored without removing and re-clamping the attaching part; in which means of a very simple construction are provided to obtain the necessary starting pressure on the bit and the necessity of employing a special mechanism exerting pressure on the bit during the boring operation is avoided, and in which means are provided whereby the bit may be shifted from one side to the other to bore opposite holes without removing the brace member or the brace member supporting means and in which the necessity of employing a large and comparatively inexpensive supporting structure is avoided.

Our device is preferably adapted for use in boring holes in the beams or sills of railway cars but it is obvious that it may be used wherever a boring tool operating above the head of the workman is desired.

With these objects in view, our invention is embodied in preferable form in the device hereinafter described and illustrated in the accompanying drawings.

In these drawings, Figure 1 is a front view in elevation of the machine; Fig. 2, a side view thereof, and Figs. 3 and 4, detail sectional views of the clamp-lug and the dogs, respectively.

Referring to the drawings, *a* represents beams or sills of a railroad car, which are diagrammatically shown, and *b* represents the brace member of the machine.

1 are uprights or standards extending from a base 2 of the machine. Between the uprights in a suitable space provided for the purpose, sprocket wheels 3 and 4 revolve and such sprocket wheels are suitably journaled in the uprights 1 at 5. A chain 6 passes over the sprocket wheels. Portions 7 are cut into

the uprights to provide for the clearance of the chain 6. A pin 8 connects the uprights at the portion of the machine nearest the bit. A crank 9 is adapted to be turned by hand to operate the sprocket 3, which through the medium of the chain 6 operates sprocket 4, whose journal is provided with a hole 10 to receive the shank of a bit or boring instrument 11. A pin 12 passes through apertures in the bit and in the journal and holds the shank in place thereon. It will be seen that the journal extends on opposite sides of the machine so that the bit may be inserted in either side. It will also be seen that if it is desired to bore holes in each of the sills between which the machine is operating that when a hole is bored in one sill that it is not necessary to reverse the whole machine in order to bore a hole in the other sill but all that is done is to remove the bit and clamp it in working position on the opposite side of the machine.

A clamping bar 13 moves in elongated slots 14 in registry with each other which are provided in the uprights 1. A right-angle extension 15 of the bar 13 is provided with claw teeth 16. On the bar 13 is adapted to slide a clamp-lug 17 having an angular projection 18 through which extends in a suitable threaded hole therein a winged clamping screw 19. A slot 20 of this lug through which the bar 13 extends is of sufficient height to permit a very slight tilting movement of the clamp upon the bar which provides a biting or gripping action at the edge 22.

To clamp the machine in operating position, the claw teeth 16 are placed in engagement with a beam and the winged clamping screw 19 is turned so as to clamp against a beam which forces the edge 22 into biting engagement with the bar 13 which holds the device stationary and prevents any movement of the clamp-lug 17. Dogs 23 also slide on bar 13 and are provided with a slot of sufficient height to allow the same to be slightly tilted on the bar. To maintain these dogs in stationary position they are tilted slightly and an extension 25 thereof serves as a fulcrum against which the adjacent upright of the brace member bears, which presses an edge 26 of the slot into biting engagement with the bar 13.

We have found that it is unnecessary to provide means to exert a positive pressure

on the bit during the turning operation as the said boring action carries the bit and brace member inward, such pressure being merely required to start the bit or to force the bit through the hole after the hole has been bored.

When the machine is operated the bar 13 is clamped in position and the brace member is held in one hand of the operator at the base 2 and it is then raised to any suitable height. The device is generally operated by the workman from a stooping position or when he is lying upon his back. The bit is placed against the beam and one of the lugs 23 is moved along the bar 13 to a position where the extension 25 will be adjacent one of the uprights 1. To operate the device, the brace member is pulled against one of the dogs 23 which acts as a fulcrum therefor, edge 26 of the dog being thereby forced into biting engagement with the bar 13, whereby the bit end of the brace is forced inward and positive pressure is exerted upon the bit to start the same. The device is operated by the crank 9 and as the bit works into the beam it causes the brace member to ride along the bar 13. The device is generally so clamped that the claw teeth engage one beam and the lug 17 will bear against another beam. By this means holes can be bored in two sills without unclamping the bar 13 by merely reversing the auger or bit and adjusting the machine and dog 23 accordingly.

If a knot or other obstacle is encountered while boring and pressure is needed to overcome the same, the adjacent dog 23 may be moved to a position where the device can be held against the extension on the lug and the necessary pressure exerted as is done when the bit is started.

Having thus described our invention, what we claim is:

1. A boring machine comprising a brace member, a bit, means to operate said brace member whereby said bit will be turned, a transverse bar, means to secure said bar to a support, said brace member mounted upon and freely movable along said bar and adapted to be tilted directly thereon, and a member carried by said bar against which the brace member bears when tilted upon said bar, substantially as described.

2. A boring machine comprising a clamping member adapted to be secured to a fixed part, a bit, a brace member adapted to carry said bit and adapted to ride upon said clamping member, means on said clamping member against which the brace member is adapted to bear upon starting a boring operation, said brace member comprising an elongated body mounted on said clamping member and movable in a plane at right angles to the clamping member and having a part adapted to be manually held to main-

tain and guide the brace at different heights and means carried by the brace member for operating said bit, substantially as described.

3. A boring machine comprising a brace member, a bit, a transverse bar on which said brace is slidably mounted, clamping means carried by said bar, and a movable member on said bar adapted to act as a fulcrum for the brace member at the start of a boring operation to impart positive pressure to start the bit, substantially as described.

4. A boring machine comprising a brace member, a bit, a transverse bar on which the brace member rides, clamping means carried by said bar, and means freely movable on said bar adapted to act as a fulcrum for the brace member, substantially as described.

5. A boring machine comprising a brace member, a bit, means to operate the same, said brace member provided with an elongated slot extending in the same general direction as the brace-member, a transverse brace-supporting bar extending through said slot and freely movable therein, and clamping means on said bar, substantially as described.

6. In a boring machine, a brace member comprising a base, uprights provided with longitudinal slots, said slots being in registry with one another, sprocket wheels between and mounted in said uprights, a crank connected to one of said sprocket wheels, a bit held by one of said sprocket wheels, a transverse bar extending through the slots in the uprights on which the brace member rides, and clamping means on said bar, substantially as described.

7. A boring machine comprising a brace member, a bit, a transverse bar on which said brace is slidably and tiltably mounted, said bar supporting the brace, a dog on said bar adjustably mounted and movable independently of the said bar and brace, said dog acting as a fulcrum for the brace member, substantially as described.

8. A boring machine comprising a brace member, a bit, a transverse bar, means carried by said bar to clamp the same to a support, said brace member adapted to ride directly on said bar, movable dogs on said bar disposed on either side of the brace, either of said dogs adapted to act as a fulcrum for the brace member, substantially as described.

9. A boring machine comprising a brace member, a bit, a transverse bar, said brace member carried by said bar, said bar provided at one end thereof with claw teeth, a clamp lug freely movable and adjustable along said bar and tiltingly mounted thereon and having an edge adapted to bite against the bar to hold the bar in adjusted

position, said brace member being positioned on said bar between said claw teeth and said clamp lug, and a member carried by said bar against which the brace is adapted to bear when tilted to start a boring operation, substantially as described.

10. A boring machine comprising a brace member, a bit, a transverse bar on which the brace member rides, means carried by said bar for clamping the same to a support, movable dogs on said bar disposed one on each side of the brace member and adapted to be tilted whereby edges of the same will be brought into biting engagement with the bar, either of said lugs adapted to act as a fulcrum for the brace member, substantially as described.

11. A boring machine comprising a brace member, a bit, a transverse bar on which the brace rides, a lug adapted to be tilted into engagement with the bar, and means to clamp said bar and lug to a support, movable dogs on said bar adapted to be tilted into engagement with the bar, either of said dogs adapted to act as a fulcrum for the brace member, substantially as described.

In testimony whereof we have affixed our signatures, in presence of two witnesses.

JOHN P. WEDDLE.

GEORGE A. ROBINSON.

Witnesses:

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