

No. 770,607.

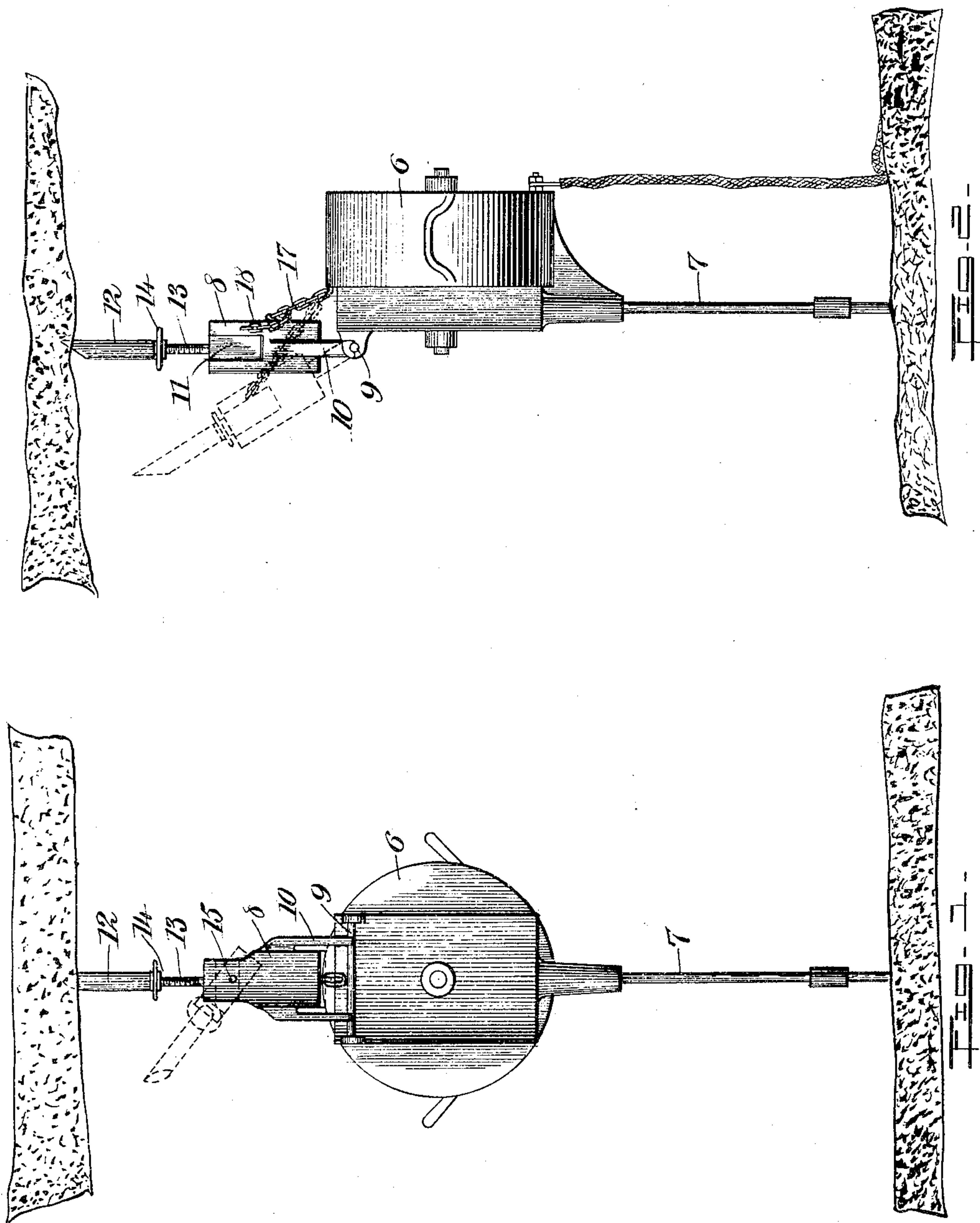
PATENTED SEPT. 20, 1904.

M. RAINES.
JACK FOR MINING MACHINES.

APPLICATION FILED MAR. 18, 1904.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:

C. A. Jarvis.
A. E. Fay

INVENTOR

Matthew Raines

BY

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ATTORNEYS

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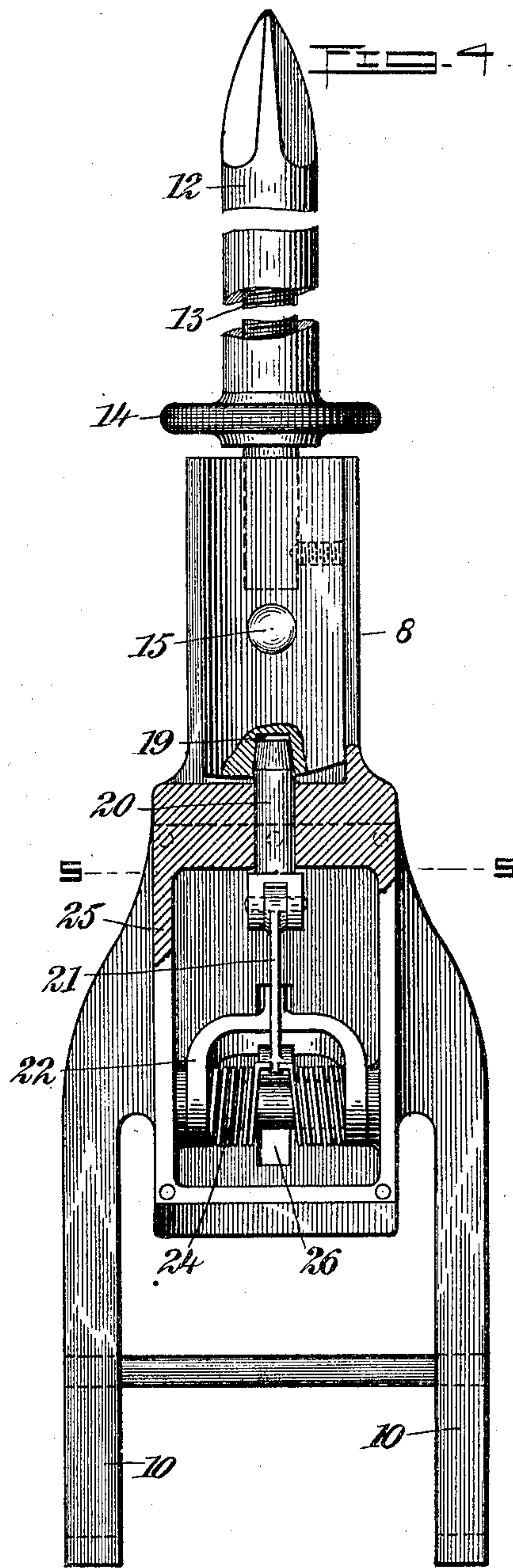
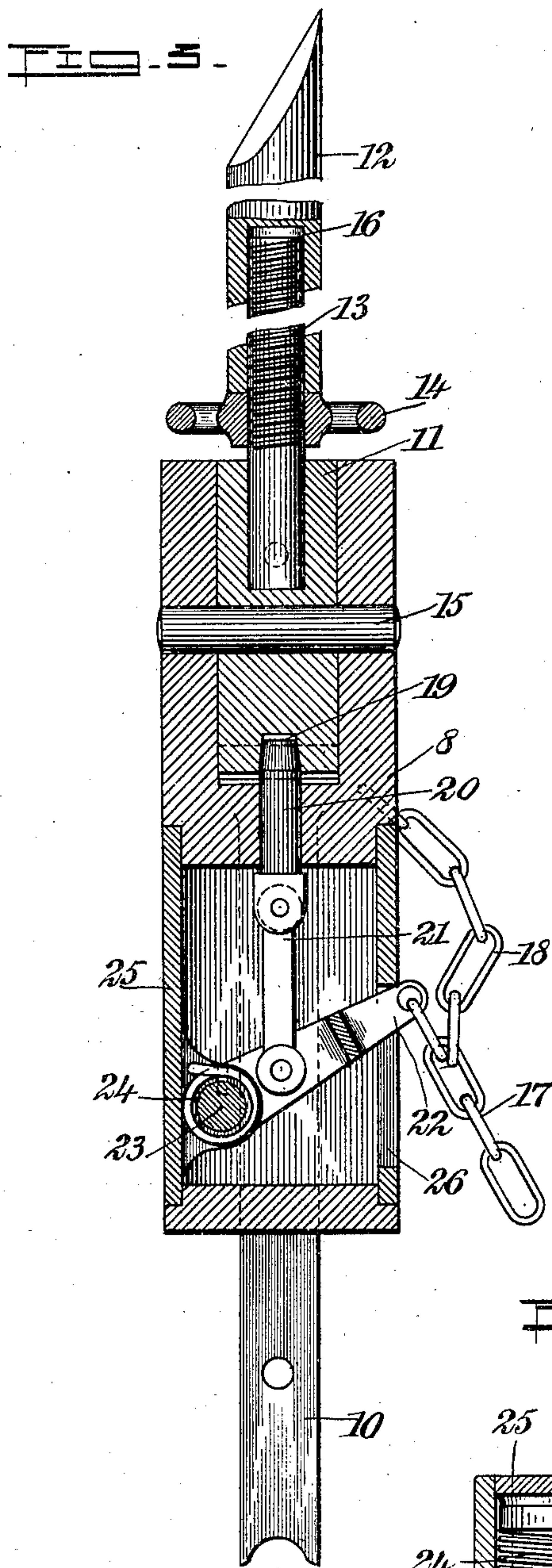
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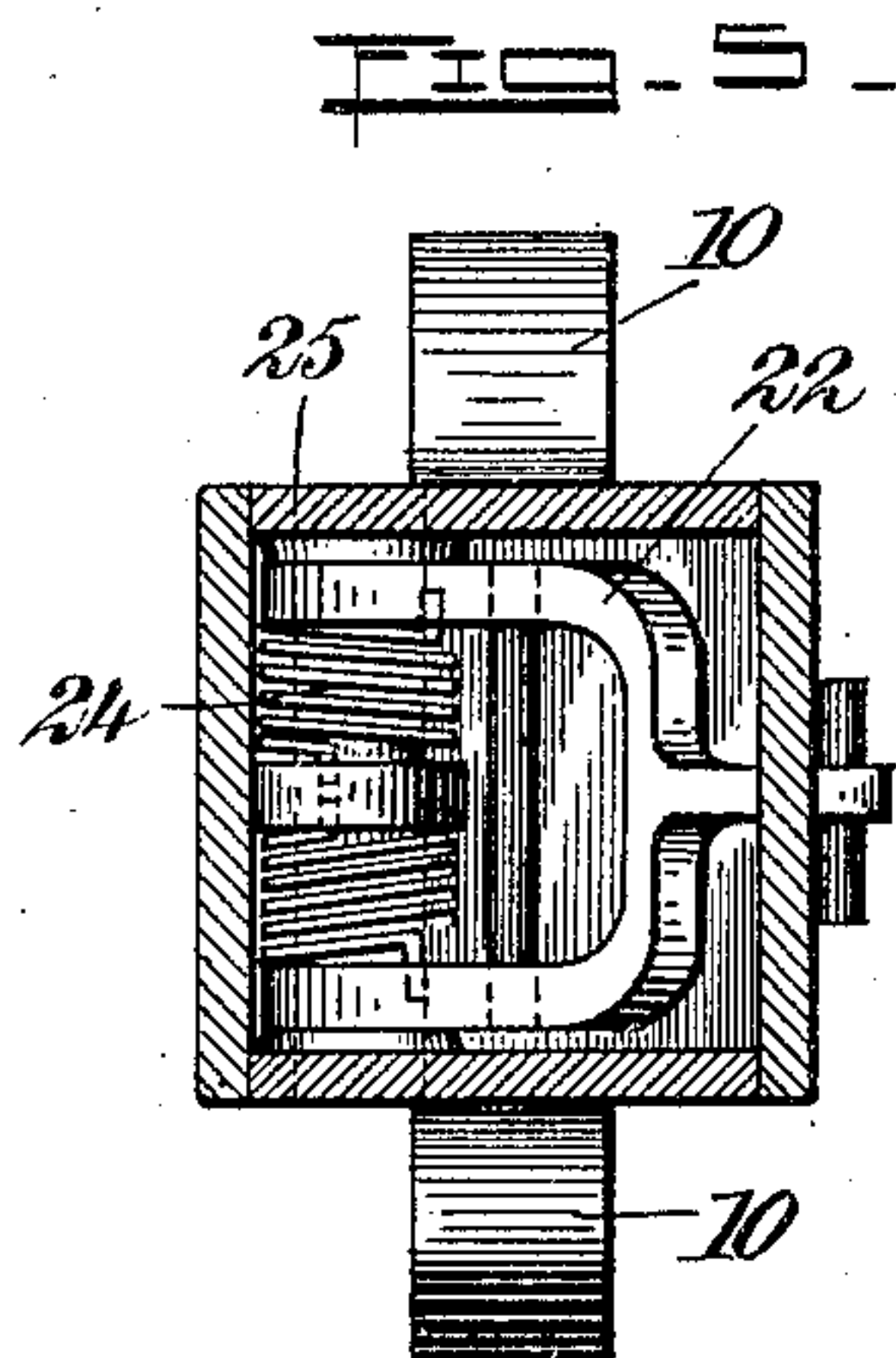
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2 SHEETS—SHEET 2.



WITNESSES:
C. A. Jarvis.
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UNITED STATES PATENT OFFICE.

MATTHEW RAINES, OF DECOTA, WEST VIRGINIA.

JACK FOR MINING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 770,607, dated September 20, 1904.

Application filed March 18, 1904. Serial No. 198,755. (No model.)

To all whom it may concern:

Be it known that I, MATTHEW RAINES, a citizen of the United States, and a resident of Decota, in the county of Kanawha and State of West Virginia, have invented a new and Improved Jack for Mining-Machines, of which the following is a full, clear, and exact description.

My invention relates to a new and improved jack adapted for use on a mining-machine, and is especially adapted for that form of mining-machines in which a drill is used and which have to be braced between the roof and the floor of a vein in order to secure the proper pressure for operation. It is applicable, however, to various forms of mining-machines and is not limited to the mining of any particular material, although I desire it specially to apply to the mining of coal.

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

Figure 1 is a front elevation of a mining-machine with a preferred form of my improvement attached thereto. Fig. 2 is a side view of the same. Fig. 3 is a sectional view of the jack shown in Figs. 1 and 2. Fig. 4 is a sectional view of the same, taken at right angles to Fig. 3; and Fig. 5 is also a sectional view taken on the line 5 5 of Fig. 4.

In the drawings, 6 represents a mining-machine of any ordinary or desired design, having a drill 7. To this mining-machine I preferably attach my improved jack 8 by means of pivots 9 and legs 10. To the upper end of the jack 8 is pivoted a block 11, from which is supported a jack-pipe 12, which acts as a pressure-exerting device against the roof of the vein for the purpose of securing sufficient pressure upon the drill to force it rapidly into the material to be mined. This jack-pipe is adjusted by means of a screw 13, secured in the block 11, and the jack-wheel 14, which is used to operate the jack-pipe on the screw.

15 is a pivot on which the block 11 is supported, and 16 a passage in the jack-pipe for the screw 13. The jack is preferably connected to the mining-machine 6 by means of

chains 17 and 18 in a manner which will be described.

In the lower end of the block 11 is a cavity 19, in which is adapted to fit a bolt or pin 20 for the purpose of locking the block and the jack-pipe 12 in vertical position. This pin 20 is operated by means of a link 21, a lever 22 on a shaft 23, and a spring 24, in connection with the chain 17. These parts, except the chain, are inclosed in a casing 25, having an opening 26, through which the end of the lever 22 projects for the attachment of the chain.

In use the jack will be placed in an upright position on its pivots 9 and the wheel 14 operated to force the jack-pipe against the roof in order that sufficient pressure may be secured upon the drill 7. As the drill sinks into the coal or ore to be mined the screw 14 has to be operated to force the jack-pipe upwardly in order to keep the desired pressure upon the drill. When it is desired to move the machine along, the screw 14 is operated to bring the jack-pipe downwardly, which loosens the latter from the roof and permits the jack to swing over on its pivot to the position shown in dotted lines in Fig. 2. This operation will obviously bring the weight of the jack 8 to bear upon the chain 17, which will cause the lever 22 to rotate about its shaft 23 against the force of the spring 24 and pull the locking bolt or pin 20 out of its seat 19, which will permit the block 11 to swing on its pivot 13 into the position shown in dotted lines in Fig. 1. The object of this arrangement is to get the jack-pipe down to a lower position in order to permit the device to be moved along without a laborious and time-consuming unscrewing of the wheel 14. After the chain 17 has been pulled to a certain point with respect to the casing 25 the chain 18 will be caused to straighten out and take most of the strain from the lever 22 in an obvious manner.

It will be apparent that many changes from the construction specifically represented in the drawings may be made without departing from the spirit of my invention, and I do not wish to be limited to the exact construction shown.

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

1. A jack for mining-machines, comprising a pivoted adjustable jack-pipe, and means for locking the jack-pipe against pivotal motion with respect to the body of the jack.
2. A jack comprising a body, a jack-pipe, means for pivotally connecting said jack-pipe with the body, a pivoted lever, and a locking-pin connected with said lever and adapted to lock said means against pivotal motion.
3. A jack comprising a body, a jack-pipe, means for pivotally connecting said jack-pipe with the body, a pivoted lever, a locking-pin connected with said lever and adapted to lock said means against pivotal motion, and holding means for normally securing said pin in its locking position.
4. A jack comprising a body, a jack-pipe, means for pivotally connecting said jack-pipe with the body, a lever, a locking-pin connected with the lever, for locking said means against pivotal motion, a spring for normally holding said pin in locking position, and means for unlocking the pin.
5. The combination of a mining-machine, a jack movable relative thereto, said jack comprising a body, a jack-pipe, means for pivotally connecting said jack-pipe with the body, means for locking the said means, and means for causing the weight of the jack when in inclined position to unlock said locking means.
6. The combination of a mining-machine, a jack pivotally mounted thereon and comprising a body, a jack-pipe adjustably and pivotally mounted with respect to said body, means for securing said jack-pipe against pivotal motion with respect to the body, and means for causing the weight of the jack when in inclined position to release said means for securing the jack-pipe.
7. The combination of a mining-machine, and a jack pivotally supported on the front of the upper part thereof, said jack having a jack-pipe, means for holding said jack-pipe, means for locking said means, and means for unlocking the same, comprising a connection from the jack to the mining-machine.
8. The combination of a mining-machine, a jack pivoted thereto, a jack-pipe on said jack, means for locking said jack-pipe against pivotal movement with respect to the body of said jack, and means for causing the weight of said jack to unlock said jack-pipe, comprising a lever, and a flexible connection attached to said lever and to said mining-machine.
9. The combination with a mining-machine, of a jack pivoted thereto, a jack-pipe on the

jack, means for locking said jack-pipe against pivotal movement with respect to the body of the jack, comprising a locking-pin, a link connected with said pin, a lever and a spring, and means for causing the weight of said jack to unlock said jack-pipe.

10. A jack for mining-machines, comprising a block pivotally attached to the body of the jack, means for locking the block with respect to the body of the jack, and means for mounting a jack-pipe on the block.

11. A jack comprising a pivoted lever, a locking-pin connected with said lever, and means for holding a jack-pipe pivotally connected with the jack and adapted to be locked by said pin.

12. A jack having a pivoted lever, a locking-pin connected with said lever, means for holding a jack-pipe pivotally connected to the jack and adapted to be locked by said pin, and holding means for normally holding said pin in its locking position.

13. A jack having a lever, a locking-pin connected with said lever, means for holding a jack-pipe pivotally connected with the jack, a spring for normally holding said pin in locking position with respect to said means, and means for unlocking the pin.

14. In combination with a mining-machine, a jack movable relative thereto, a jack-pipe, movable means for holding said jack-pipe pivotally connected with the jack, means for locking said means, and means for causing the weight of the jack when in inclined position to unlock said holding means.

15. The combination of a mining-machine and a jack pivotally supported on the front of the upper part thereof, said jack having a jack-pipe, means for holding said jack-pipe pivotally connected to the jack, means for locking said means, and means for unlocking the same, comprising a connection from the jack to the mining-machine.

16. The combination of a mining-machine, a jack pivoted thereto, a block pivotally connected to the jack, a jack-pipe mounted on said block, means for locking said block with respect to the body of the jack, and means for causing the weight of said jack to unlock said block, comprising a lever and a flexible connection attached to said lever and to said mining-machine.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MATTHEW RAINES.

Witnesses:

T. B. BALLARD,
J. G. BALL.