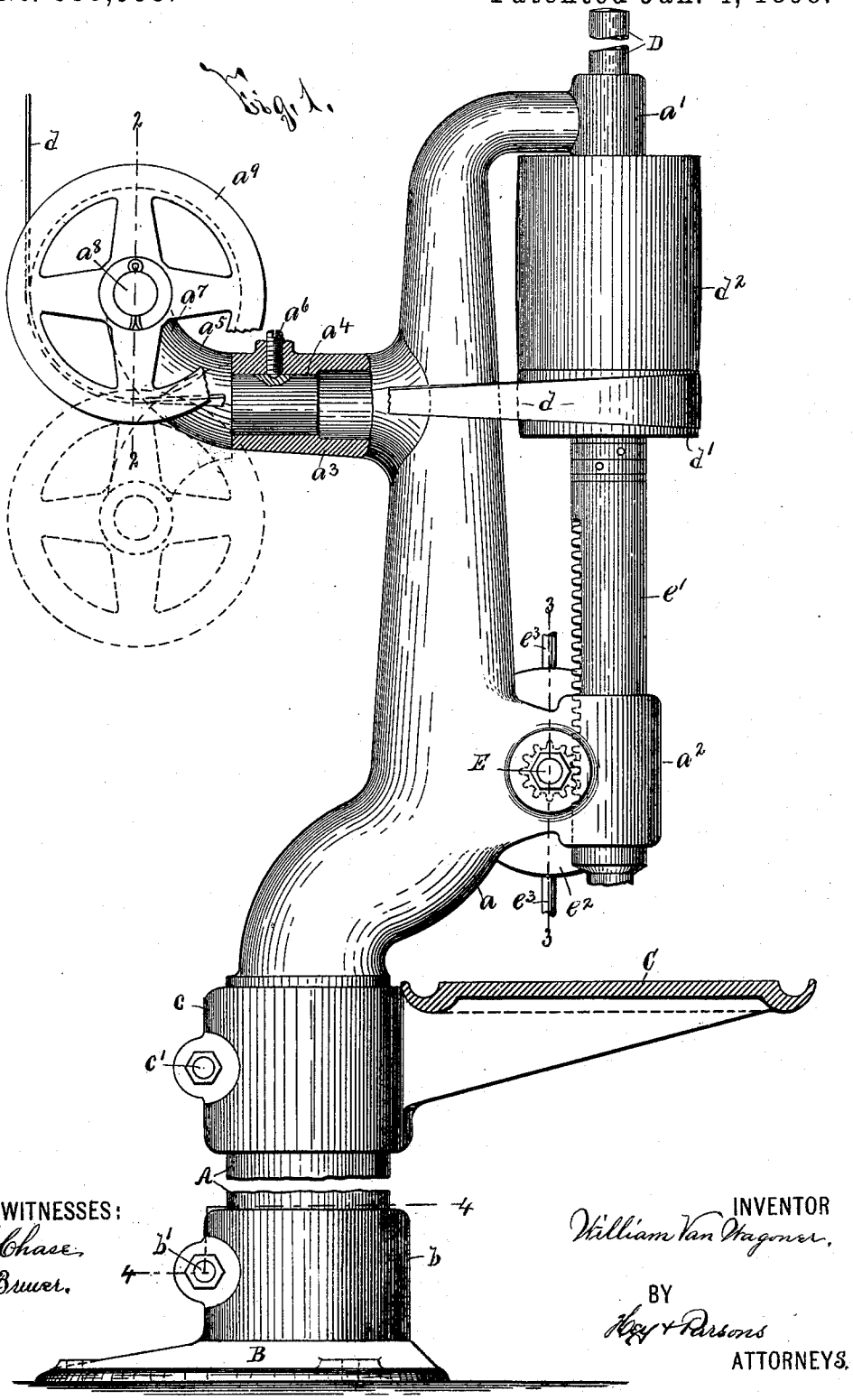
(No Model.) 2 Sheets—Sheet 1.

W. VAN WAGONER.

DRILLING MACHINE.

No. 596,558. Patented Jan. 4, 1898.



WITNESSES:
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(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

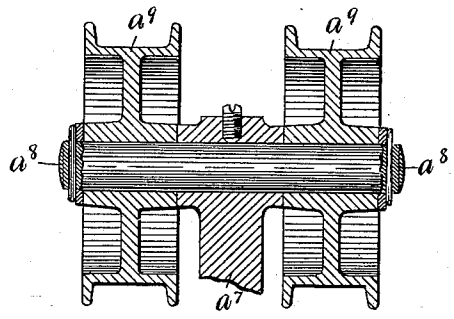


Fig. 3.

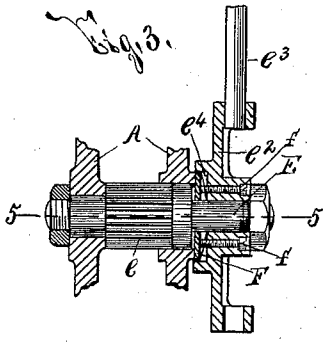


Fig. 4.

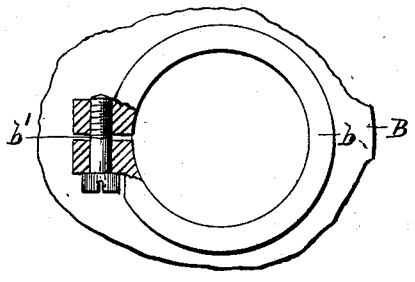


Fig. 5.

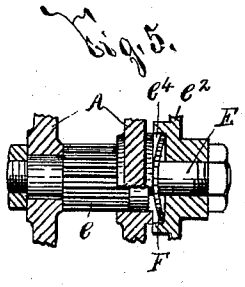
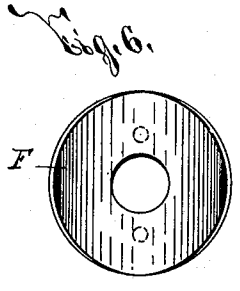


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM VAN WAGONER, OF SYRACUSE, NEW YORK.

DRILLING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 596,558, dated January 4, 1898.

Application filed May 5, 1896. Serial No. 590,368. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM VAN WAGONER, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Drilling-Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to improvements in drilling-machines, and has for its object the production of a device which is economically manufactured and is particularly practical and efficient in operation; and to this end it consists, essentially, in the general construction and arrangement of the component parts of the drilling-machine, all as hereinafter more fully described, and pointed out in the claims.

In describing this invention reference is had to the accompanying drawings, forming a part of this specification, in which like letters indicate corresponding parts in all the views.

Figure 1 is an elevation, partly in section, of my improved drilling-machine, a portion of its supporting-frame being broken away. Figs. 2 and 3 are vertical sections taken, respectively, on lines 2 2 and 3 3, Fig. 1. Figs. 4 and 5 are horizontal sections, partly in elevation, taken, respectively, on lines 4 4 and 5 5, Figs. 1 and 3; and Fig. 6 is an elevation of the detached friction-piece for holding the tool-carrying spindle in its elevated or inoperative position.

A represents the supporting-frame, B the base, C the table, and D the tool-carrying spindle, of my improved drilling-machine. The lower end of the supporting-frame A is preferably formed cylindrical, and the base B and the table C are respectively provided with split collars b c, which are arranged one beneath the other upon the lower end and central portion of said supporting-frame and are clamped in their adjusted position by suitable screws or other clamps b' c'. The upper end or head of the supporting-frame A is provided with a forwardly-extending offset a and substantially parallel forwardly-extending arms a' a^2, which form bearings for the tool-carrying spindle D. Said upper end or head of the supporting-frame A is also preferably provided with a rearwardly-extending arm a^3, formed with a lengthwise socket a^4 for receiving the cylindrical end of a movable arm a^5, which is held in its adjusted position by a screw or other clamping device a^6, that is longitudinally adjustable in the arm a^3 and projects into the socket a^4. The opposite or free end of the arm a^5 is formed with a lateral extension a^7, which supports a spindle or shaft a^8, provided with a pair of pulleys a^9 for guiding a belt d, that is preferably utilized to drive the spindle D. When the belt d extends downwardly from a plane above the pulleys a^9, the arm a^5 is arranged so that its lateral extension a^7 extends upwardly, as seen by full lines at Fig. 1, and when the belt d extends upwardly from a plane beneath said pulleys a^9 the arm a^5 is rocked to its position indicated by dotted lines at said figure.

The tool-carrying spindle D is reciprocated longitudinally by any suitable means, presently described, is revolved by the belt d or any other desirable driving mechanism, and is preferably so arranged and connected to said driving mechanism that when reciprocated it is automatically thrown into and out of action. The spindle D is preferably provided with a loose pulley d', arranged above the arm a^2, and a pulley d^2, of substantially the same diameter as the pulley d', beneath the arm a', arranged above said pulley d' and suitably fixed to said spindle. The pulley d' is arranged in front of the rearwardly-extending arm a^3 and the pulley a^9, and the belt d is normally movable around said pulley d'. As the spindle D is alternately depressed and elevated the belt d passes from the pulley d' to the pulley d^2, and vice versa, and thereby effects revoluble movement of the spindle D and permits said spindle to remain idle.

The means for reciprocating the spindle D preferably consists of a rocking spindle E, provided with a pinion e, meshing with teeth upon a sleeve e', surrounding the spindle D and prevented from revoluble movement by any suitable means. (Not illustrated.) A suitable actuating-wheel e^2 is usually fixed to one extremity of the spindle E and is provided with a hand-lever e^3. The inner face of the actuating-wheel e^2 is preferably formed with a socket e^4, and arranged therein is a friction-piece F, having its adjacent face engaged with the outer face of a boss or hub

projecting from the supporting-frame A. The friction-piece F is preferably formed concavo-convex in cross-section, as clearly seen at Figs. 3, 5, and 6, and is adjusted toward and away from the adjacent face of the frame A by suitable adjusters, here illustrated as screws *f*, reciprocally movable in the hub of the wheel e^2 on opposite sides of the spindle E. The frictional engagement of the friction-piece or washer F with the adjacent face of the frame A is readily varied by the adjusters *f* and is normally sufficient to hold the spindle D in its elevated position without necessitating the use of the counterbalance, a spring, or any other similar device for this purpose.

The operation of my invention will now be readily understood upon reference to the foregoing description and the accompanying drawings, and it will be particularly noted that the same is simple in construction and facilitates rapid drilling owing to its ready manipulation and the means for automatically connecting and disconnecting the tool-carrying spindle and its driving mechanism.

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

1. In a drilling-machine, the combination of a supporting-frame, a reciprocating revoluble tool-carrying spindle provided with tight and loose pulleys of substantially equal diameter arranged end to end, a belt passing over the loose pulley and movable upon the tight pulley as the spindle is moved lengthwise, a friction-piece engaged with the supporting-frame for holding the spindle in its inoperative position, and means for adjusting the friction-piece, substantially as and for the purpose described.

2. In a drilling-machine, the combination of a stationary frame having projecting arms, a reciprocating tool-carrying spindle provided with tight and loose pulleys of substantially equal diameter arranged end to end between said arms, a belt passing over the loose pulley and movable upon the tight pulley as the spindle is reciprocated, and a rocking pinion connected to the spindle for reciprocating the same, substantially as and for the purpose set forth.

3. In a drilling-machine, the combination of a supporting-frame, a reciprocating tool-carrying spindle provided with tight and loose pulleys of substantially equal diameter arranged end to end, a belt passing over the loose pulley and movable upon the tight pulley as the spindle is moved lengthwise, a friction-piece connected to the spindle and having a curved face engaged with the supporting-frame, and means for varying the curvature of said curved face of the friction-piece, substantially as and for the purpose specified.

4. In a drilling-machine, the combination of an upright reciprocating tool-carrying spindle provided with tight and loose pulleys of substantially equal diameter, the loose pulley being arranged beneath the tight pulley, and adjacent thereto, a belt passing over the loose pulley and movable upon the tight pulley as the spindle is depressed, and means for holding the spindle in its elevated position, substantially as and for the purpose described.

5. In a drilling-machine, the combination of an upright reciprocating tool-carrying spindle provided with tight and loose pulleys of substantially equal diameter, the loose pulley being arranged beneath the tight pulley and adjacent thereto, a belt passing over the loose pulley and movable upon the tight pulley as the spindle is depressed, a rocking pinion connected to the spindle for reciprocating the same, and means for holding the pinion in its retracted position, substantially as and for the purpose set forth.

6. In a drilling-machine, the combination of an upright reciprocating tool-carrying spindle provided with tight and loose pulleys of substantially equal diameter, the loose pulley being arranged beneath the tight pulley and adjacent thereto, a belt passing over the loose pulley and movable upon the tight pulley as the spindle is depressed, a rocking spindle connected to the former spindle, a friction-piece for holding the rocking spindle in its inoperative position, and means for adjusting the friction-piece, substantially as and for the purpose described.

7. In a drilling-machine, the combination of a reciprocating tool-carrying spindle, means for driving the spindle, connections between the spindle and its driving means, whereby as the drill is reciprocated said means is automatically connected to the spindle, a rocking spindle connected to the former spindle, a supporting-frame, a friction-piece connected to the rocking spindle and having a curved face engaged with the frame, and means for adjusting the friction-piece, substantially as and for the purpose set forth.

8. In a drilling-machine, the combination of a reciprocating tool-carrying spindle provided with tight and loose pulleys of substantially equal diameter, the loose pulley being arranged beneath the tight pulley and adjacent thereto, a belt passing over the loose pulley and movable upon the tight pulley as the spindle is depressed, a rocking spindle connected to the former spindle, a supporting-frame, a friction-piece connected to the rocking spindle and having a curved face engaged with the frame, and means for adjusting the friction-piece, substantially as and for the purpose described.

9. In a drilling-machine, the combination of a tool-carrying spindle, provided with a pulley, a supporting-frame provided with a rearwardly-extending arm arranged opposite to the pulley and formed with a lengthwise socket, a belt for driving the spindle, a second arm provided at one end with a lateral extension and having its opposite end journaled in the socket, means supported by the rearwardly-extending arm for holding the

second arm in its adjusted position in said socket, and a pulley for the belt having its shaft or spindle journaled in the lateral extension of said arm, substantially as and for the purpose set forth.

In testimony whereof I have hereunto signed my name, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 30th day of April, 1896.

WILLIAM VAN WAGONER.

Witnesses:
E. A. WEISBURG,
K. H. THEOBALD.