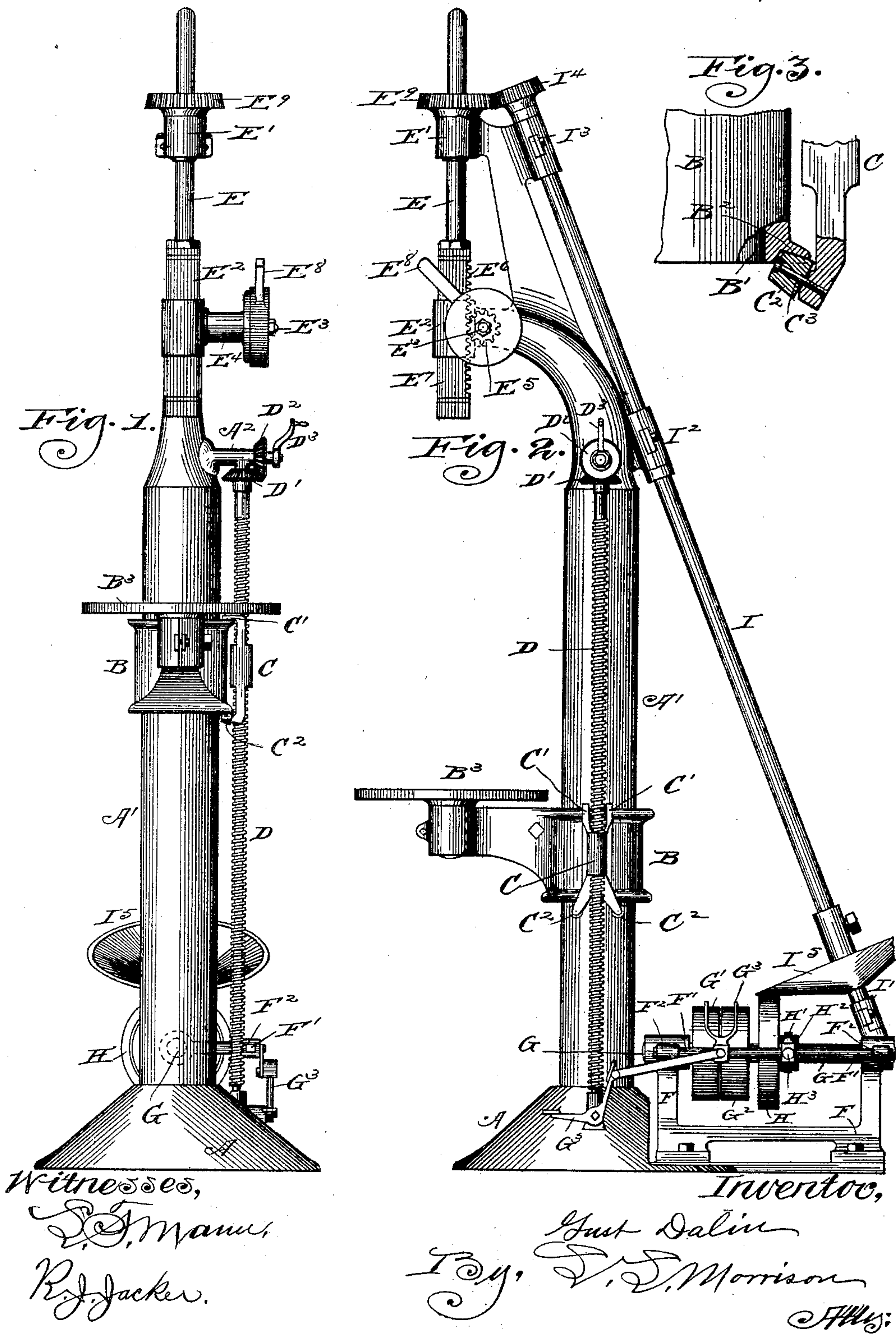


(No Model.)

G. DALIN.  
DRILLING MACHINE.

No. 462,397.

Patented Nov. 3, 1891.





# UNITED STATES PATENT OFFICE.

GUST DALIN, OF ROCKFORD, ILLINOIS, ASSIGNOR TO THE MECHANIC'S  
MACHINE COMPANY, OF SAME PLACE.

## DRILLING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 462,397, dated November 3, 1891.

Application filed August 24, 1891. Serial No. 403,529. (No model.)

*To all whom it may concern:*

Be it known that I, GUST DALIN, a citizen of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Drilling-Machines, of which the following is a specification.

The principal object of my invention is to provide means for increasing and decreasing the speed of drilling-machines by the employment of friction-wheels; and it consists of certain new and useful features of construction and combinations of parts hereinafter described, and specifically pointed out in the claims.

Referring to the accompanying drawings, which form a part of this specification, Figure 1 is a front elevation of a drilling-machine embodying my improvements. Fig. 2 is a right-side elevation of the same. Fig. 3 is a view of a fragment of the platen-bracket of the drilling-machine and devices for supporting the same, broken to better show the construction and connection.

Like letters of reference indicate corresponding parts throughout the several views.

A is the base of the drill-frame.

A' is a vertical tubular column rigidly connected therewith.

B is a platen-bracket having a vertical tubular opening B' extending therethrough to admit the column A', whereon it may be vertically slid and horizontally revolved for adjustment, and being provided with an annular grooved way B<sup>2</sup> in the lower end thereof, for a purpose to be fully explained hereinafter.

B<sup>3</sup> is a platen connected with the platen-bracket B and operated in the usual manner.

C is an elevator-bracket for raising and lowering the platen B<sup>3</sup> and platen-bracket B, engaging with the latter by means of the integral lugs C' and rolls C<sup>2</sup>, mounted on the axes C<sup>3</sup> and adapted to fit into and be traversed by the annular grooved way B<sup>2</sup> in the platen-bracket B. The sole function of the lugs C' is to prevent the rolls C<sup>2</sup> from being accidentally dislodged from the grooved way B<sup>2</sup> in the platen-bracket B and to cause the latter to always descend simultaneously with

the elevator-bracket C. They are therefore not indispensable to the successful operation of the machine.

D is a rotatable platen-adjusting screw-rod passing through and operative in a counter-part interiorly-threaded vertical passage in the elevator-bracket C and mounted vertically on the base of the drill-frame and in the arm A<sup>2</sup>, projecting from the columnar portion thereof.

D' D<sup>2</sup> are meshed mitered pinions, the former rigidly connected with the screw-rod D and the latter mounted on the free end of the arm A<sup>2</sup> and provided with a crank D<sup>3</sup> fast thereto.

E is a drill-spindle mounted in the usual manner in the bearings E' E<sup>2</sup> in the bracketed portion of the drill-frame.

E<sup>3</sup> is a horizontal shaft mounted in the bearing E<sup>4</sup>.

E<sup>5</sup> is a pinion fast to the shaft E<sup>3</sup> and meshing with the rack E<sup>6</sup> of the drill-spindle sleeve-bearing E<sup>7</sup>.

E<sup>8</sup> is an endwise-detachable hand-lever for raising and lowering the drill-spindle E.

E<sup>9</sup> is a bevel-gear rigidly connected with the upper portion of the drill-spindle E and mounted therewith in the bearing E'.

F is a frame for supporting parts to be described hereinafter.

F' is a shipper-supporting rod mounted in the brackets F<sup>2</sup> on the frame F.

G is a shaft mounted in the bearings on the frame F parallel to the shipper-supporting rod F'.

G' G<sup>2</sup> are respectively fast and loose pulleys on the shaft G.

G<sup>3</sup> is a belt-shipper mounted and adapted to be slid on the shipper-supporting rod F'.

H is a friction-pulley having spline connection with the shaft G in order that it may be freely slid thereon laterally and yet revolve therewith.

H' is a shipper mounted and adapted to be slid on shipper-supporting rod F' and engaging with the integral hub H<sup>2</sup> of the pulley H in such a manner as to allow it to freely revolve with its shaft G.

H<sup>3</sup> is a set-screw for detaining the pulley



H (through its shipper H') at any desired point along the shaft G.

I is a shaft mounted obliquely in the bearings I' I<sup>2</sup> I<sup>3</sup> on the drill-frame and frame F.

5 I<sup>4</sup> is a bevel-gear rigidly connected with the upper end of the shaft I and meshing with the bevel-gear E<sup>9</sup> on the drill-spindle E.

I<sup>5</sup> is a cone friction-pulley mounted on the lower portion of the shaft I in such a manner  
10 that any part of its periphery may be caused to engage frictionally with the periphery of the friction-pulley H, which last-mentioned periphery should be covered with leather or other suitable elastic material. Obviously  
15 the periphery of the cone friction-pulley I<sup>5</sup> might be covered with leather instead of the periphery of the pulley H, if desired.

The pulleys H I<sup>5</sup>, as shown, are in position to propel the drill-spindle at the lowest rate  
20 of speed attainable by the machine. To increase the rate of speed of the drill-spindle, shift the pulley H toward the shaft I by means of the shipper H<sup>2</sup> and secure the latter to the rod F' by means of the set-screw H<sup>3</sup>.

25 The drill taken as a whole will be found to be of the simplest and most compact construction practicable.

I claim—

1. In combination, in a drilling-machine, the  
30 column of the drill-frame, the platen-bracket constructed to slide thereon and having an annular grooved way in the lower end thereof, the

elevator-bracket provided with rolls adapted to fit into and be traversed by the annular  
35 grooved way in the platen-bracket, and the platen-adjusting screw-rod passed through the elevator-bracket, substantially as and for the purpose specified.

2. In combination, in a drilling-machine, the cone friction-pulley, the friction-pulley en-  
40 gaging therewith, the obliquely-mounted and horizontal shafts whereon said friction-pulleys are mounted, the drill-spindle, and the necessary bearings for operatively supporting and connecting all of said parts, substantially as  
45 and for the purpose specified.

3. In combination, in a drilling-machine, the drill-frame, the platen-bracket constructed to slide thereon and having an annular grooved  
50 way in the lower end thereof, the elevator-bracket provided with rolls adapted to fit into and be traversed by the annular grooved way in the platen-bracket, the platen-adjust-  
55 ing screw-rod passed through the elevator-bracket, the cone friction-pulley, the friction-pulley engaging therewith, and the obliquely-mounted and horizontal shafts whereon said friction-pulleys are mounted, substantially as and for the purpose specified.

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Witnesses:

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