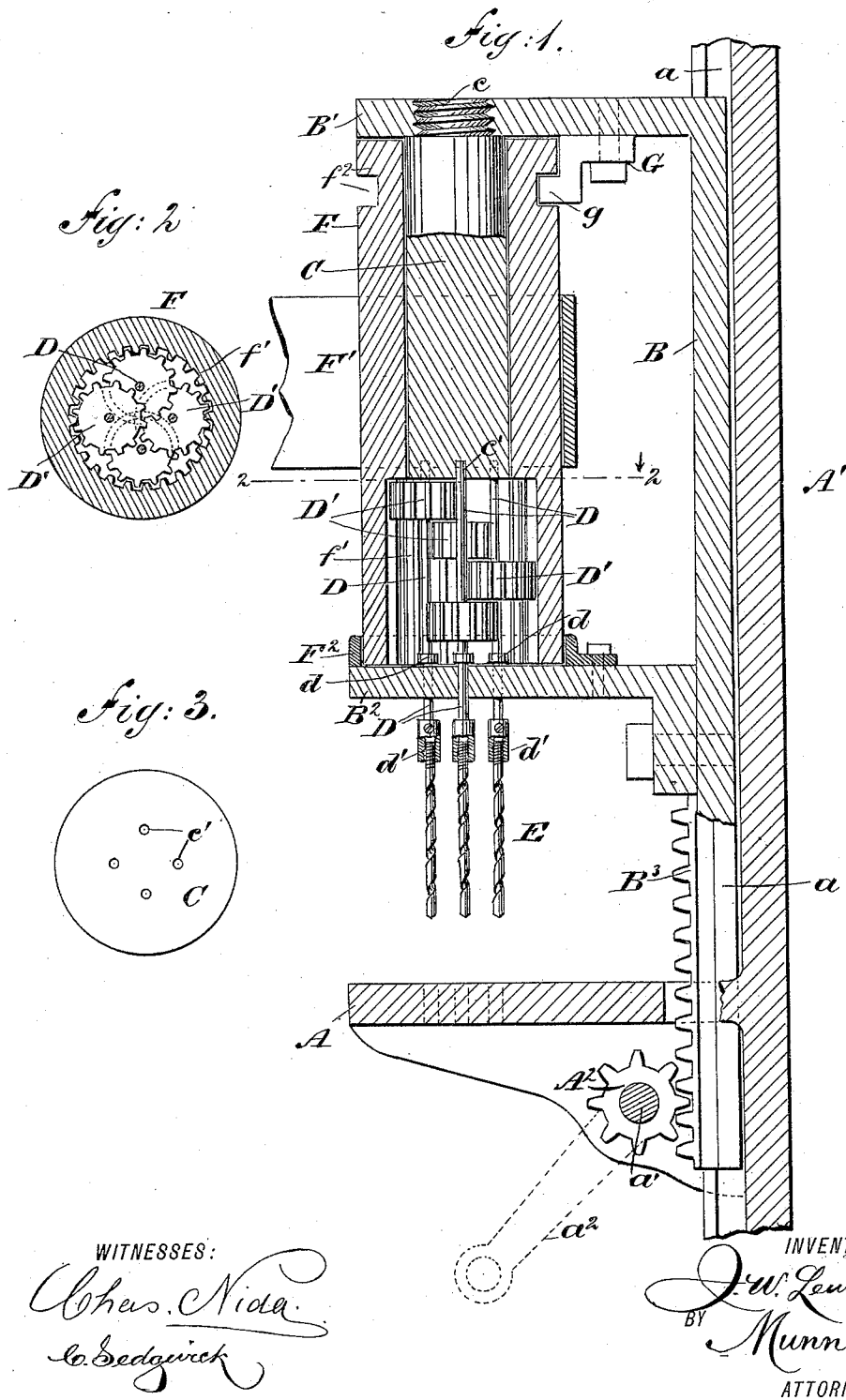


(No Model.)

J. W. LEWERTH.
MULTIPLE BUTTON DRILLING MACHINE.

No. 466,610.

Patented Jan. 5, 1892.



UNITED STATES PATENT OFFICE.

JOHN W. LEWERTH, OF NEW YORK, N. Y.

MULTIPLE BUTTON-DRILLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 466,610, dated January 5, 1892.

Application filed May 1, 1891. Serial No. 391,241. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. LEWERTH, of the city, county, and State of New York, have invented a new and Improved Multiple Button-Drilling Machine, of which the following is a full, clear, and exact description.

The invention relates to machines for producing a series of holes in buttons for receiving the thread in securing the buttons in place.

The object of the invention is to provide a compact and efficient boring-machine for this purpose and by which the several holes may be drilled simultaneously and expeditiously.

The invention consists in the novel construction and combination of parts, as hereinafter particularly described, and defined in the claims.

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

Figure 1 is a sectional elevation of a button boring or drilling machine constructed in accordance with my invention. Fig. 2 is a horizontal section on line 22, Fig. 1; and Fig. 3 is an inverted view of the depending stud in which the upper end of the drill-stocks have a bearing.

In constructing a button-drilling machine in accordance with my invention a suitable table A is provided, which in practice may have any ordinary or approved button-clamping device. At one side of the table A there is a standard A', having a vertical guide-groove *a* at its inner face, in which is fitted for vertical movement the upright or inner side B of the frame which carries the drills and their driving mechanism.

From the upright B an upper overhanging arm B' extends, the same being formed integrally with or rigidly secured to the upright, and a lower arm B² extends also from the upright parallel to the overhanging arm B'. To the arm B' a depending stud C is secured by a threaded or other suitable connection *c*, and at the lower end the depending stud C is formed with a series of recesses *c'*—four in the present instance—which form bearings for the upper ends of the drill stocks or spindles D. The lower ends of the spindles D pass through vertical apertures in the horizontal arm B²,

and each spindle is formed with a collar *d*, that rests on the upper side of such arm B².

The drills E are secured at their upper ends in sockets *d'*, formed on or secured to the lower ends of the spindles D, the connection between the drills and sockets being effected by a screw connection or by set-screws, or both.

Above the arm B² of the movable frame the spindles D are each provided with a pinion D', each of the said pinions being arranged at a different height on its spindle, so that one pinion overlaps another. With this arrangement the several drills and their driving spindles and pinions are arranged in close relation and in compact form.

The pinions D' are driven by a sleeve F, which is fitted to revolve on the depending stud C, and the lower end of the sleeve is preferably of enlarged diameter, and it is formed with internal teeth *f'*, which mesh with all the pinions D' of the drill-spindles D for actuating said spindles and their drills.

At the upper end the sleeve F is formed with an annular groove *f*², into which projects the toe or stud *g* of a hanger-bracket G, which is bolted or otherwise secured to the overhanging arm B'. Thus the toe *g* serves to steady the sleeve F and to lessen the friction at the lower end of the sleeve. The latter may, if desired, be further stepped in a flanged ring or step F² on the upper side of the horizontal arm B².

With this construction it will be seen that a housing is provided for the gears by the sleeve F and arm B². Motion is imparted to the sleeve F from any convenient power by a belt F'.

The frame B B' B² may be raised and lowered to raise and lower the drills to and from the work, as desired, by any suitable means. In the instance shown the upright B is formed or provided with a rack B³, with which a pinion A³ meshes, the said pinion being secured on a shaft *a'*, mounted below the table A, whereby by turning the shaft *a'*—by a crank *a*², for instance—the drills will be raised and lowered as required.

It will thus be seen that the machine is of compact and durable form and is efficient for its purpose, enabling the several holes to be simultaneously and quickly produced.

Having thus described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. The combination, in a button-drilling machine, of a frame having a depending stud, 5
spindles having a bearing in the lower end thereof and adapted to receive drills, pinions on said spindles, and a sleeve fitted for rotation on said depending stud and having internal teeth meshing with the said pinions, 10
substantially as described.

2. The combination, in a button-drilling machine, of a table and a frame vertically movable relatively to said table, drill-carrying spindles having bearings in said frame 15
and provided with pinions, and a driving-sleeve having internal teeth engaging all of said pinions and forming a housing therefor.

3. The combination, in a button-drilling machine, of a stud, a series of spindles having a bearing at one end in said stud and provided with pinions, the pinions of the several 20
spindles being in advance of and overlapping or overlying the others, and a revoluble sleeve fitted on said stud and having internal teeth meshing with the several pinions, substantially 25
as described.

4. In a button-drilling machine, the combination of a table and a frame movable to and

from said table and having parallel arms, a stud secured to one of said arms, spindles 30
adapted to receive drills and having a bearing at one end in said stud and passing through the opposed arm of the said frame, pinions on said spindles, and a sleeve revolubly fitted on said stud and having internal 35
teeth meshing with the several pinions, substantially as described.

5. The combination, in a button-drilling machine, of a frame having a depending stud, spindles having a bearing at one end in said 40
stud and formed with sockets for receiving drills, pinions on said spindles arranged one in advance of the other and overlapping, a sleeve revolubly fitted on said stud and having internal teeth meshing with the said spindles, and a projecting toe or stud projecting 45
from the frame and entering an annular groove in the sleeve, substantially as described.

JOHN W. LEWERTH.

Witnesses:

J. L. MCAULIFFE,
C. SEDGWICK.