

(No Model.)

N. B. GARRIGUES & S. DAVIS.

MACHINE FOR BORING WELLS.

No. 336,403.

Patented Feb. 16, 1886.

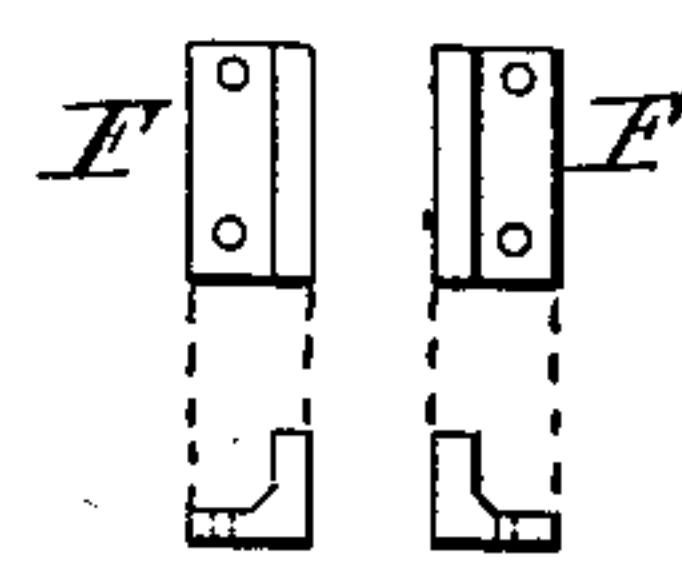
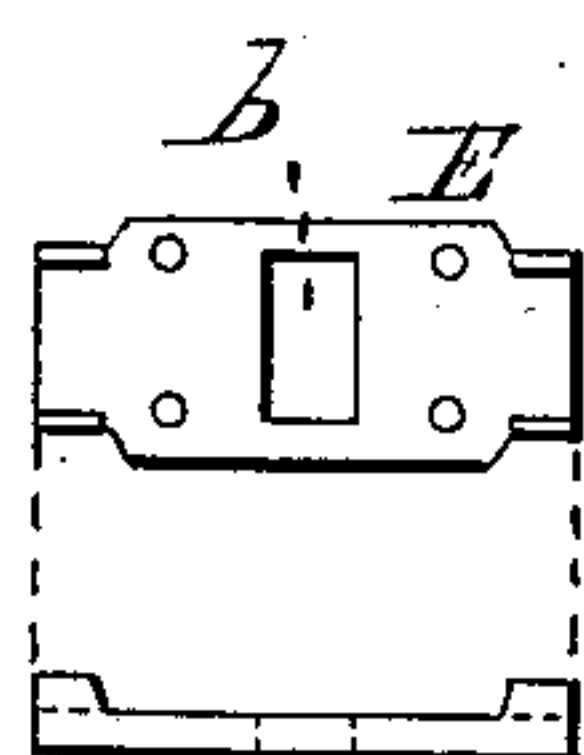
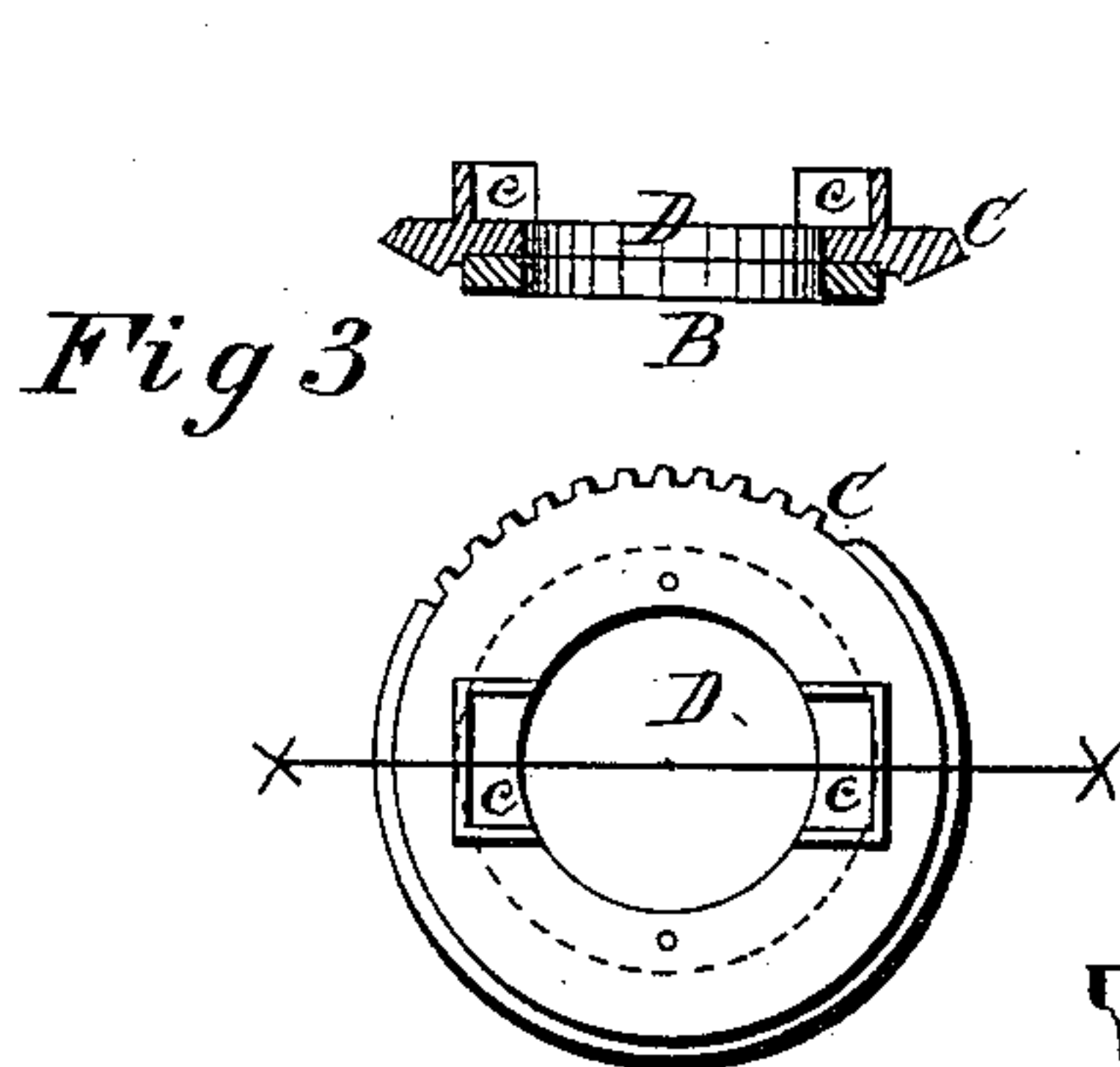
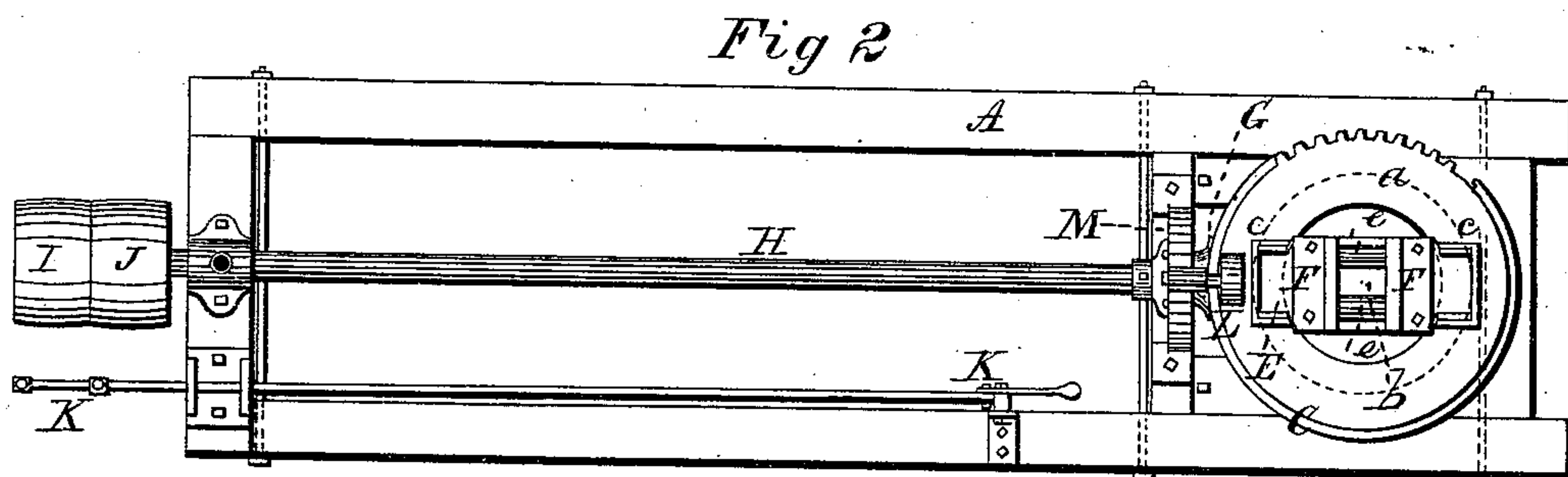
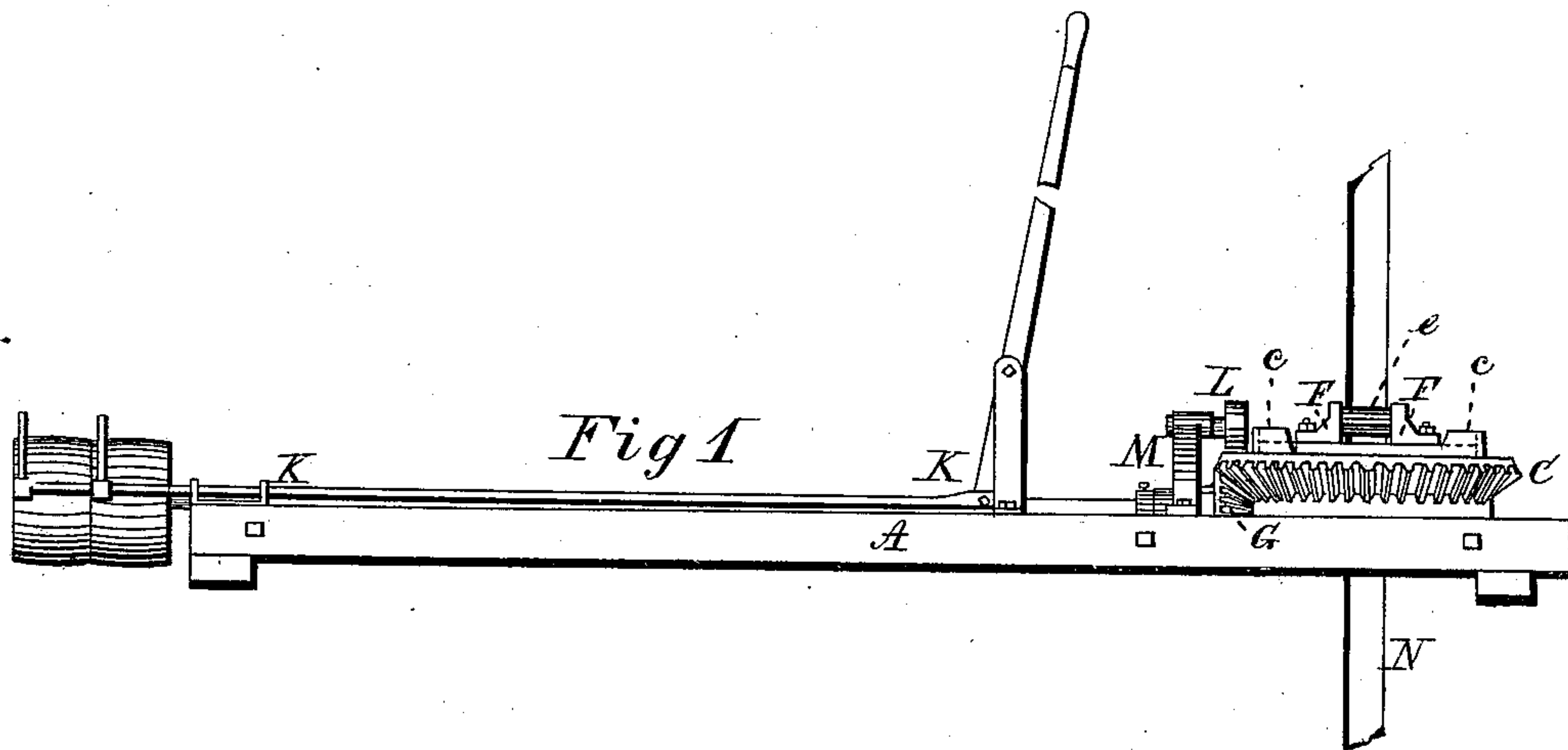
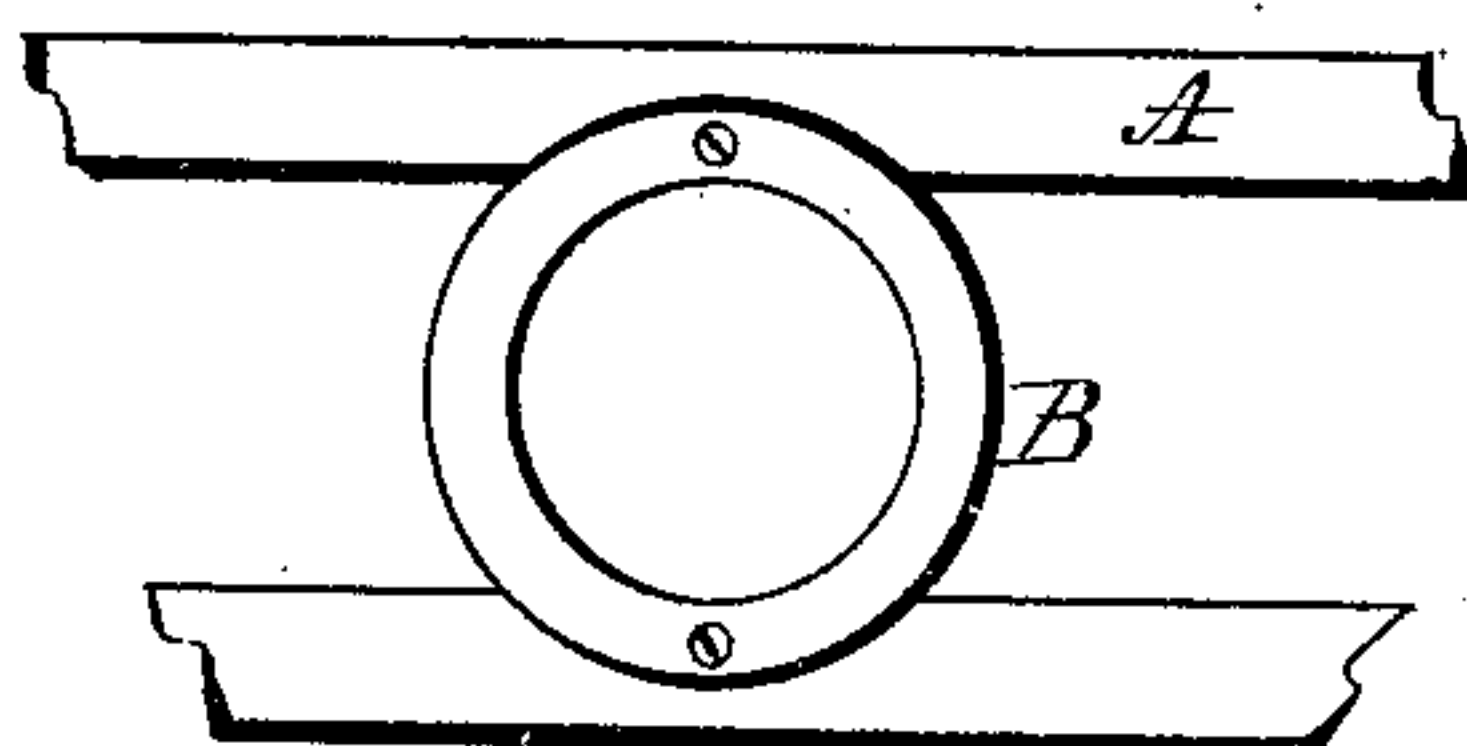
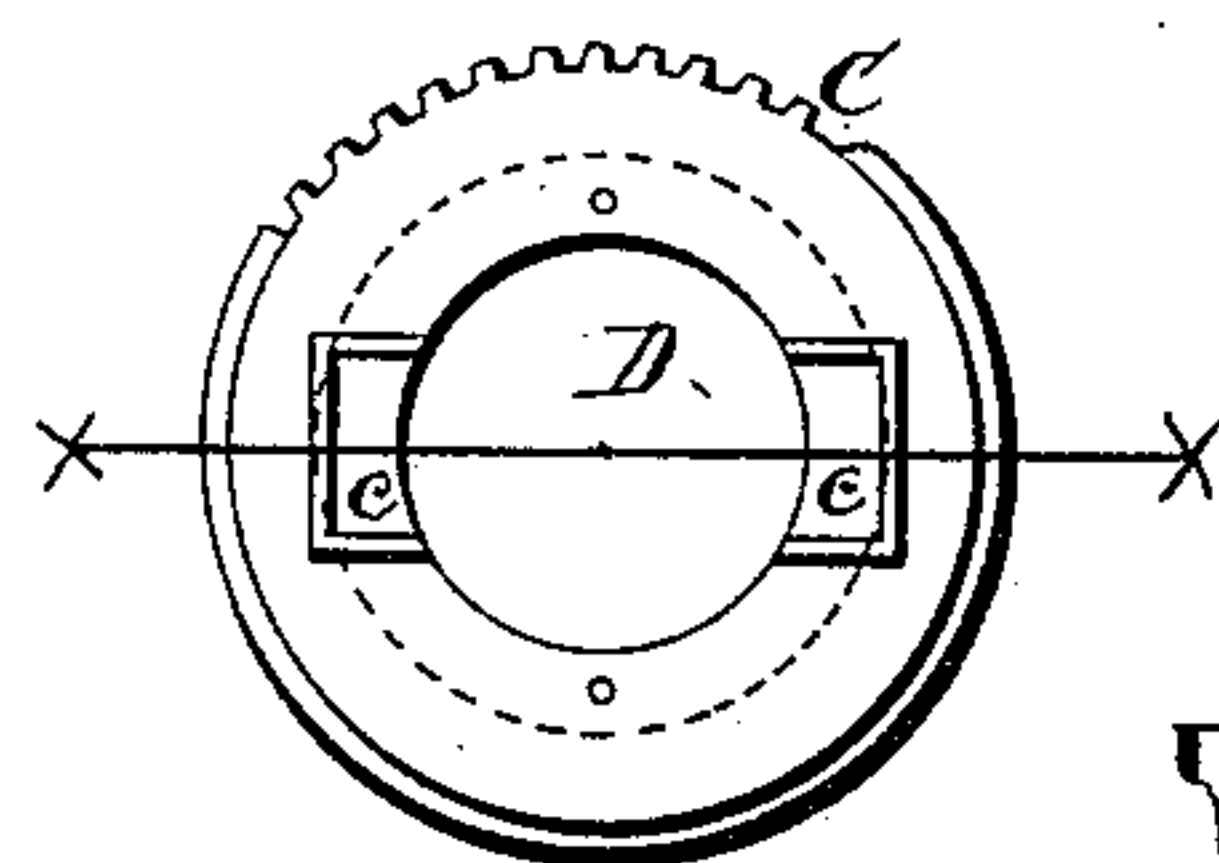


Fig. 6.



Witnesses

J. H. Burridge  
John Enright

Inventors.

N. B. Garrigues & S. Davis  
W. H. Burridge  
Atty.

# UNITED STATES PATENT OFFICE.

NORMAN B. GARRIGUES AND SAMUEL DAVIS, OF SALEM, OHIO.

## MACHINE FOR BORING WELLS.

SPECIFICATION forming part of Letters Patent No. 336,403, dated February 16, 1886.

Application filed June 30, 1885. Serial No. 170,265. (No model.)

*To all whom it may concern:*

Be it known that we, NORMAN B. GARRIGUES and SAMUEL DAVIS, of Salem, in the county of Columbiana and State of Ohio, have  
5 invented new and useful Improvements in Machines for Boring Wells; and we do hereby declare that the following is a full and complete description of the same.

In boring Artesian wells, and in boring for  
10 oil or for gas, it often becomes necessary to pass through considerable surface earth, sand, gravel, &c., before reaching the underlying rock through which to work the drill. This loose superficial material is usually penetrated  
15 by boring with an auger, operated mainly by hand, and, as ordinarily performed, requiring more time, expense, and labor than the drilling of the underlying rock in proportion to the depth of the surface material as compared with  
20 the rock. Especially is this the case when the surface material is of considerable depth.

To penetrate the loose material overlying the rock is the purpose of the following-described machine, and shown in the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a side view of the machine. Fig. 2 shows a plan view of the same. Fig. 3 is a sectional view through the line *x x*.  
30 Figs. 4, 5, 6, and 7 are detached sections.

Like letters of reference denote like parts in the several views.

On one end of a suitably-constructed frame, A, is secured a flat ring, B, Fig. 7, a detached  
35 view of the ring. Said ring is indicated in Fig. 2 by the dotted line *a*, and a transverse sectional view of the same is shown in Fig. 5. It will be noticed that the ring has a smooth uniform flat surface, as seen in Fig. 7 of the  
40 drawings.

C is a crown-wheel having a large central opening, D, Fig. 6, corresponding to the opening in the ring B, alluded to. Said crown-wheel is without arms, and therefore is without a hub.  
45

Immediately around the opening D of the crown-wheel, and on the under side thereof, is an annular rabbet having a diameter adapted to receive the ring B, as shown in the cross-sectional view, Fig. 3, in which it will be seen  
50 that the teeth of the crown-wheel surround the ring. Said ring forms a bearing-surface

whereon the wheel revolves, as and for a purpose presently shown.

*c c*, Fig. 6, are gains, in which are closely  
55 but loosely fitted the ends of a driver, E, as seen in Figs. 1 and 2. In the driver is a slotted opening, *b*, on the sides of which are a pair of rollers, *e e*, respectively, that have their bearings in the angle-irons F F, secured to the  
60 driver and arranged in relation thereto, as seen in the drawings. The crown-wheel is revolved on the ring B by a pinion, G, terminating the end of the shaft H, having its bearings in the frame, as shown in Fig. 2, in which  
65 I is the driving-pulley and J the idle one, and K a belt-shifter.

L is a roller journaled in the standard M, directly over the pinion G, and in contact with the verge of the crown-wheel on which it runs  
70 as the wheel revolves, and prevents the said wheel from being lifted from its seat (the ring) by the pinion G when the machine is in operation, and which is as follows: The spot in which the hole is to be bored being fixed upon,  
75 the machine is then adjusted in respect to it, so as to bring the center of the crown-wheel over the said spot. The shaft or rod N, for carrying the auger, is passed between the rollers *e e* down through the crown-wheel. To  
80 the lower end of the rod is attached an earth-boring auger. (Not shown in the drawings.) The upper end of the rod is in the usual way connected to the lifting mechanism of a derrick. (Not shown in the drawings, as it forms  
85 no part of this invention.) Power being applied to the pulley J the crown-wheel is made to revolve by the pinion G. As the wheel revolves, the driver E rotates the rod or shaft M, and thereby the auger, which bores its way  
90 into the ground, fed down by the weight of the shaft, and made to pass freely down by the rollers *e e*. The auger, when full, is lifted from the bore or well by the mechanism of the derrick, which draws up the rod until the coupling  
95 by which the auger is connected to the rod comes to the under side of the driver, which, as the rod is continued to be drawn upward, lifts the driver from out of the gains *c c*, and is carried upward until the dirt-loaded  
100 auger is above the machine so far that it may be swung off one side for discharging the dirt therefrom. The unloaded auger is then returned to the opening D of the crown-wheel,



down through which it passes into the well and the driver again into the gains. The crown-wheel is again revolved and the work of the auger continued, which in due time is again withdrawn, as and for the purpose above described. This operation of the machine is continued until the underlying rock is reached. The use of the auger is then discontinued and the machine removed to give place to the drill for boring the rock, which is done in the usual way.

As herein-before mentioned, the use of the machine for the purpose of removing the free earth overlying the rock to be drilled results in the saving of much time, labor, and consequent expense in sinking wells to obtain the various natural elements above specified.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In combination with the crown-wheel, the driver detachably connected therewith and

provided with rollers *e e*, arranged, respectively, on each side of the opening therein for the purpose specified, and substantially as described.

2. In a machine for boring Artesian wells and other similar wells, the frame A, crown-wheel and bearing-ring B, driving-pinion, and roller adapted to run upon the verge of said wheel, detachable driver provided with rollers *e e*, and a rod or shaft, N, constructed and arranged to operate in the manner substantially as described, and for the purpose specified.

In testimony whereof we affix our signatures in presence of two witnesses.

NORMAN B. GARRIGUES.  
SAMUEL DAVIS.

Witnesses:

J. H. BURRIDGE,  
G. J. HARDWAY.