

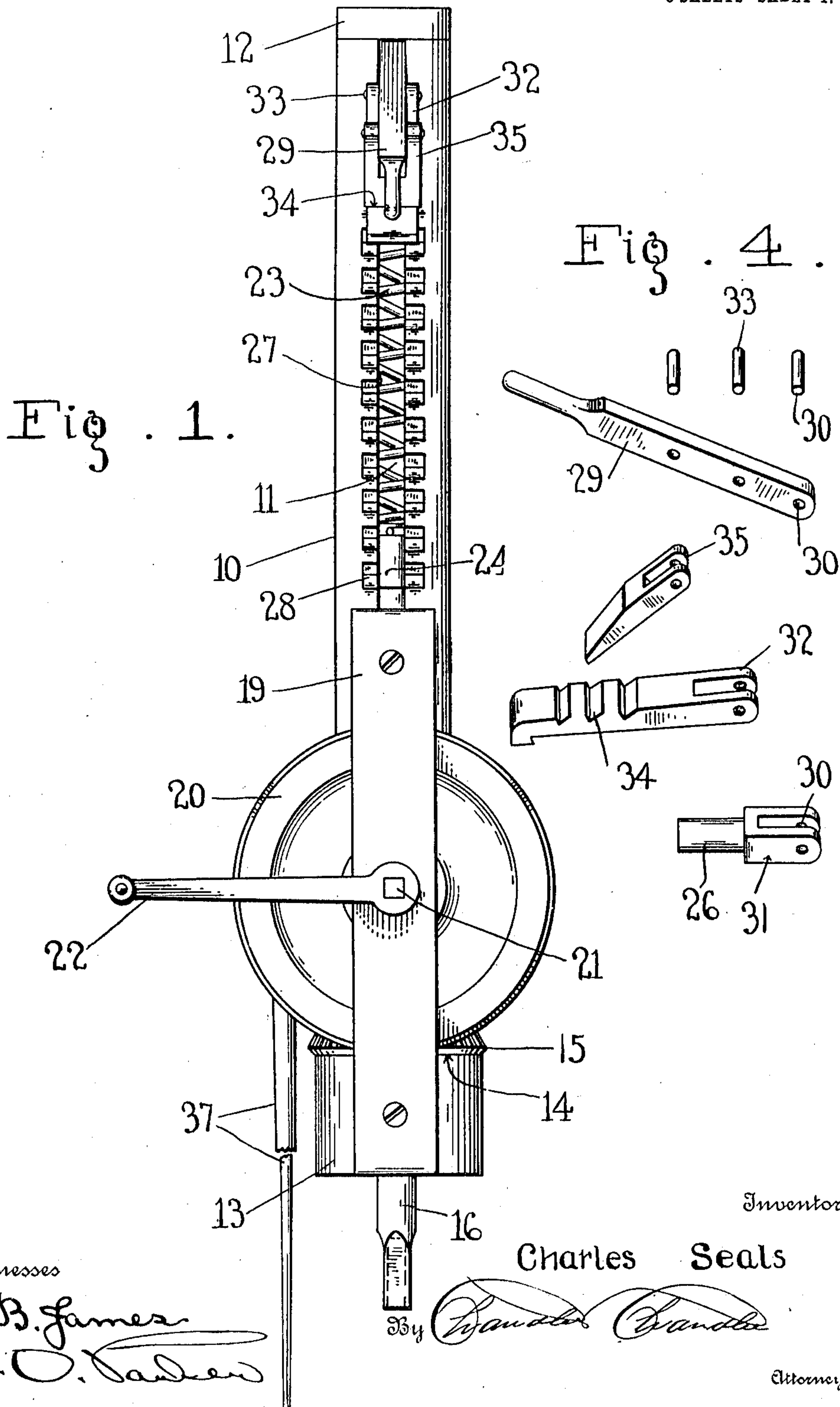
C. SEALS.  
DRILL.

APPLICATION FILED OCT. 11, 1909.

970,401.

Patented Sept. 13, 1910.

3 SHEETS—SHEET 1.



Witnesses

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3 SHEETS—SHEET 2.

Fig. 2.

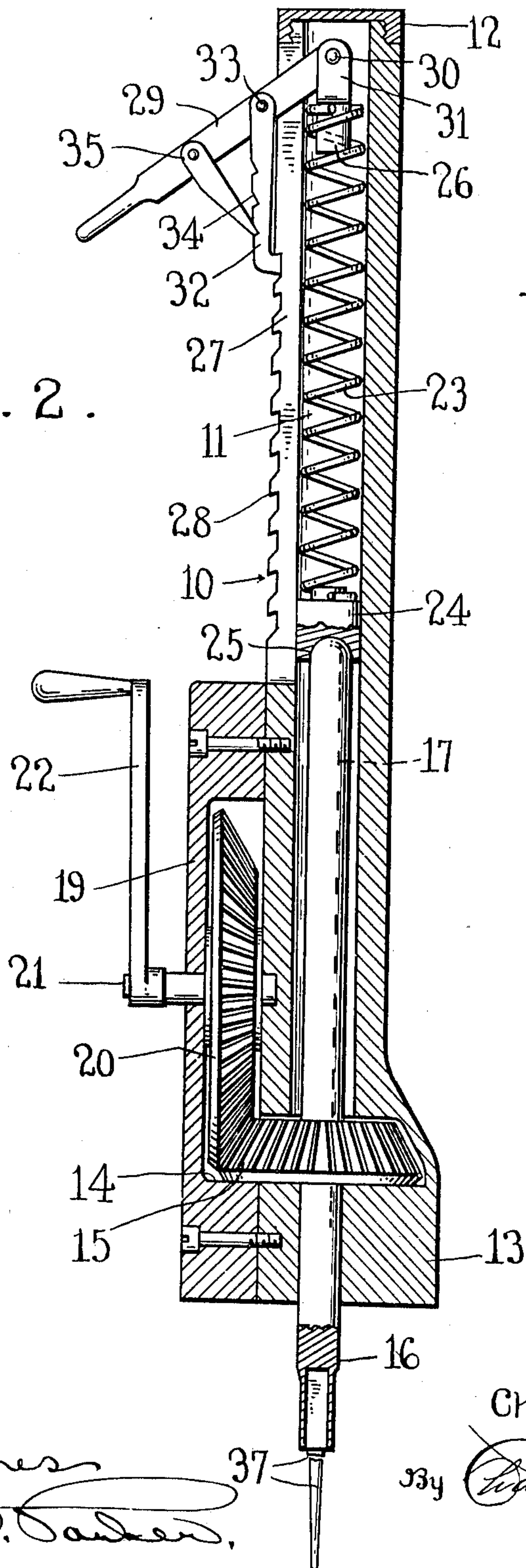
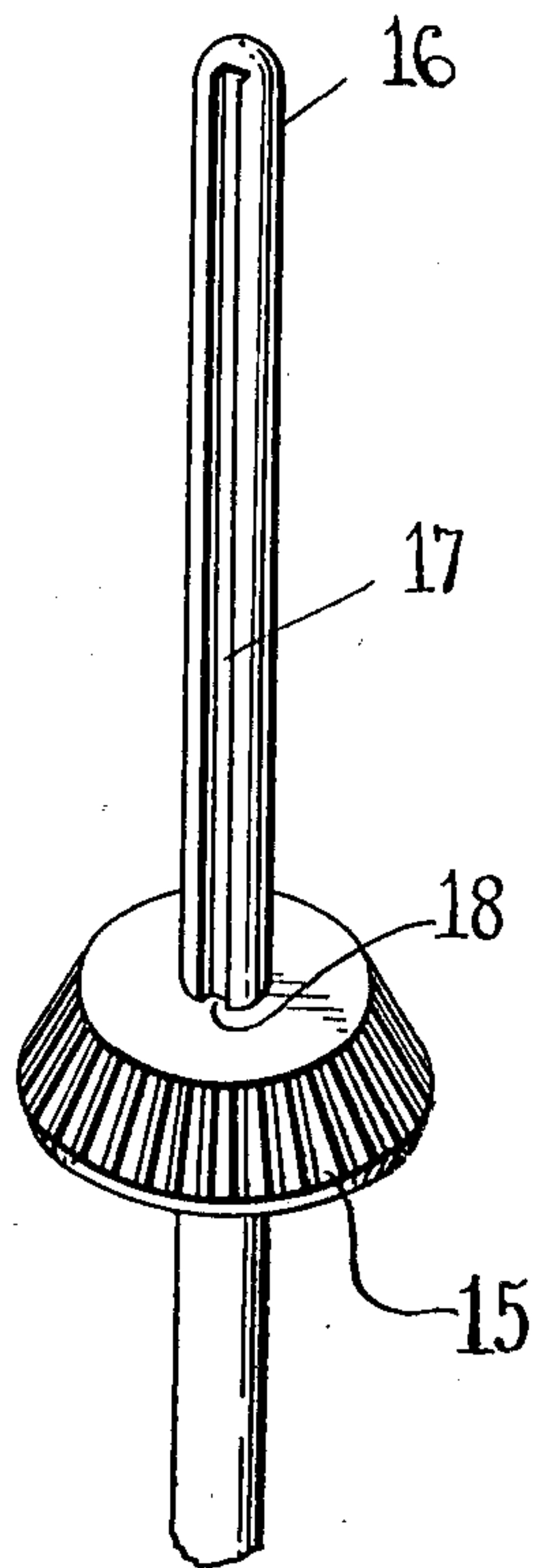


Fig. 5.



Witnesses

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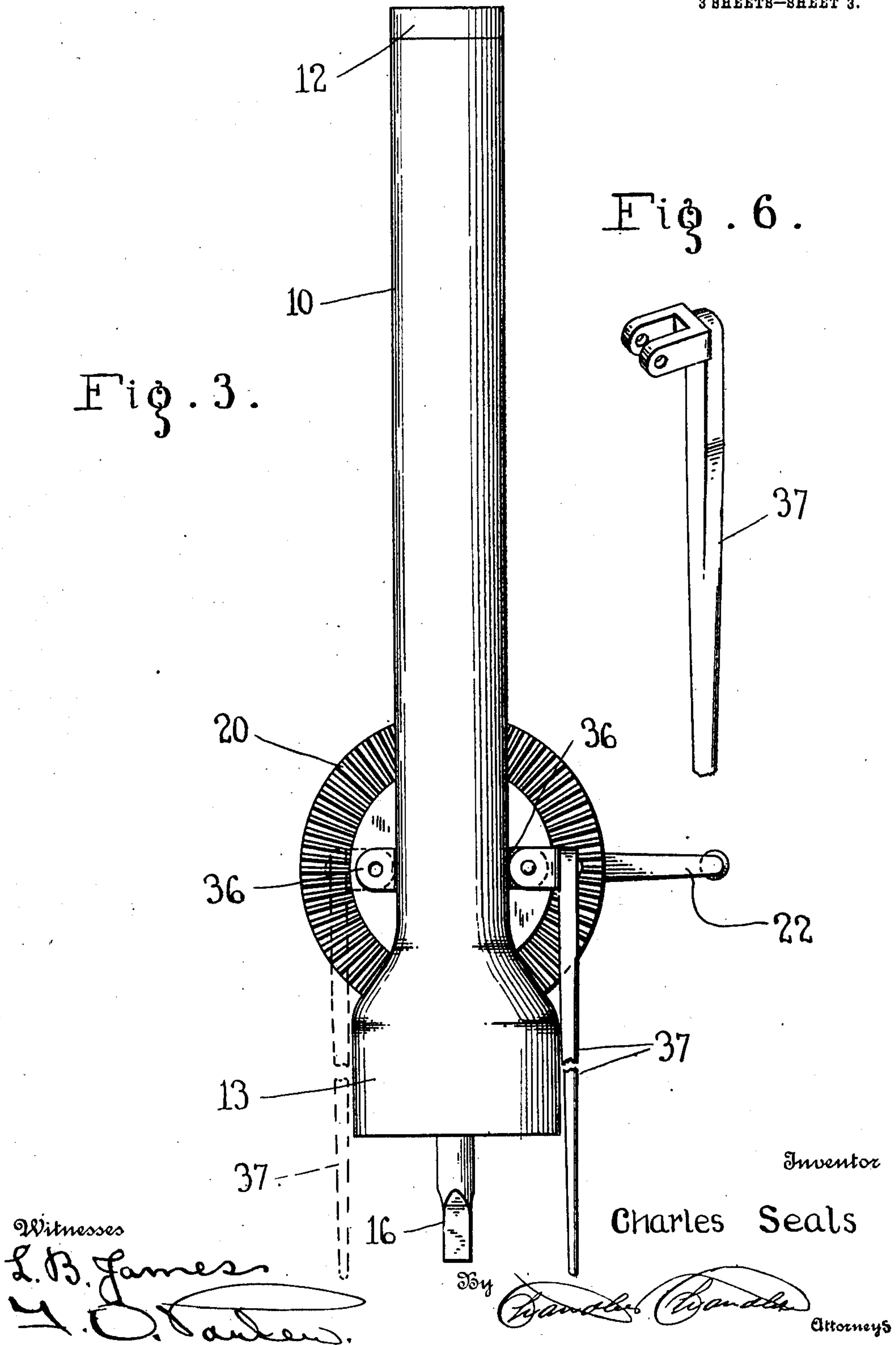
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3 SHEETS—SHEET 3.

Fig. 3.

Fig. 6.





# UNITED STATES PATENT OFFICE.

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## DRILL.

970,401.

Specification of Letters Patent. Patented Sept. 13, 1910.

Application filed October 11, 1909. Serial No. 522,015.

*To all whom it may concern:*

Be it known that I, CHARLES SEALS, a citizen of the United States, residing at Lovilia, in the county of Monroe, State of Iowa, have  
5 invented certain new and useful Improvements in Drills; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it ap-  
10 pertains to make and use the same.

The invention relates to a drill and more particularly to the class of coal or rock drills.

The primary object of the invention is  
15 the provision of a drill in which the boring shaft is maintained under compression so that it will be automatically fed constantly to the work to be operated upon by the drill, thereby assuring a positive cutting  
20 action while in use.

Another object of the invention is the provision of a drill of this character in which the boring shaft is held longitudinally displaceable in the drill stock and has auto-  
25 matic compression means acting directly upon the shaft to constantly advance the same while in position for operation on the work, and this compression means being manually adjustable to increase or decrease  
30 its strength as may be required in the operation of the drill.

A further object of the invention is the provision of a drill of this character which is simple in construction readily and easily  
35 operated, thoroughly reliable and efficient in operation and inexpensive in the manufacture.

In the drawings, accompanying and forming part of this specification is illustrated  
40 the preferred form of the embodiment of the invention, which to enable those skilled in the art to practice the invention will be set forth at length in the following description, while the novelty of the invention will be  
45 pointed out in the claims succeeding the description.

In the drawings:—Figure 1 is a side elevation of a drill constructed in accordance with the invention. Fig. 2 is a longitudinal  
50 sectional view of the same. Fig. 3 is a reverse side elevation. Fig. 4 is a detailed view of the adjusting means for the compression spring, the parts being disassembled. Fig. 5 is a detailed perspective  
55 view of the boring shaft and pinion carried

thereby. Fig. 6 is a detailed perspective view of the supporting standard or prop.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

Referring to the drawings by numerals,  
60 10 designates a tubular drill stock which is preferably constructed of metal and has a central bore 11 opening through opposite ends of the stock, one end of said stock being  
65 closed by a removable cap 12, while the opposite end is formed with an enlargement 13 containing a cavity or suitable recess 14 intersecting said bore and in this recess is dis-  
70 posed a pinion 15, the latter containing a suitable central aperture through which is freely slidable a displaceable boring shaft  
75 16 disposed within the bore 11 of the drill stock. This boring shaft 16 contains for a greater portion of its length a longitudinally  
80 disposed groove 17 which latter is engaged by a projection or lug 18 formed on the pinion 15 so that the said pinion and shaft will rotate together and at the same time permit  
85 the shaft 16 to be advanced or retracted longitudinally in the drill stock.

Detachably mounted at one side of the drill stock 10 is a crown or bridge plate 19  
90 between which latter and the said stock is disposed a rotatable gear 20 meshing with the pinion 15 and this gear is fixed to a turning shaft 21 journaled in the stock and bridge plate at right angles to the axis of  
95 the boring shaft. Detachably fitted on the outer end of the turning shaft 21 is a hand crank 22 through the medium of which rotary motion may be imparted to the boring  
100 shaft.

Disposed within the drill stock 10 is a compression spring 23, one end of which has  
105 its bearing against a follower block 24, the latter being provided with a recess 25 receiving the inner end of the boring shaft 16 and the opposite end of this spring 23 has its bearing against a displaceable stop mem-  
110 ber 26 slidably mounted in the bore 11 of the drill stock.

The drill stock 10 is formed with an elongated slot 27 opening into the bore 11 from one side thereof and this stock is fur-  
115 ther provided on its outer face adjacent the slot 27 with parallel rows of rack teeth 28 to be engaged by an adjusting device as will be hereinafter described. This adjusting device comprises a manually operable lever 29  
120



disposed in the slot 27 and having its inner end pivoted as at 30 between spaced parallel ears 31 on the stop member 26. Connected to the lever 29 is a locking pawl 32 by a pivot 33 and this pawl is adapted to engage the rack teeth 28 to hold the stop member adjusted for increasing or decreasing the strength of the compression spring. The said pawl 32 has formed in its outer face a series of notches 34 which latter are engaged by a pivotal dog 35 carried by the lever 29 and this dog serves to lock the lever in adjusted position when thrown on its pivot 33 to tension the compression spring after the lever has been adjusted in the slot 27 and locked in this adjusted position by the pawl 32 of the adjusting device.

Projecting from diametrically opposite points of the drill stock 10 are perforated ears 36 either of which is adapted to be detachably connected to a supporting standard or prop 37 which is used for the purpose of holding the drill in operative position relative to the work to be drilled.

It is of course to be understood that changes, variations and modifications may be made in the construction of the invention such as come properly within the scope of the claims hereunto appended, without departing from the spirit or sacrificing any of the advantages of the invention. It is also obvious that the drill is adaptable for use in

drilling various materials other than that mentioned herein.

From the foregoing the construction and operation of the invention will be clearly understood without the necessity of a more extended explanation and therefore the same has been omitted.

What is claimed is:—

1. In a drill, a stock, a longitudinally movable boring shaft supported by the stock, a compression spring within the stock and acting upon the shaft, a lever longitudinally displaceable in the stock and adapted to act upon the spring for tensioning the same, and means locking the lever in various longitudinally adjusted positions on the stock.

2. In a drill, a stock, a longitudinally movable boring shaft supported by the stock, a compression spring within the stock and acting upon the shaft, a lever longitudinally displaceable in the stock and adapted to act upon the spring for tensioning the same, means locking the lever in various longitudinally adjusted positions on the stock, and means rotating the shaft.

In testimony whereof, I affix my signature, in presence of two witnesses.

CHARLES SEALS.

Witnesses:

S. C. WIRT,

HARRY GUTICH.