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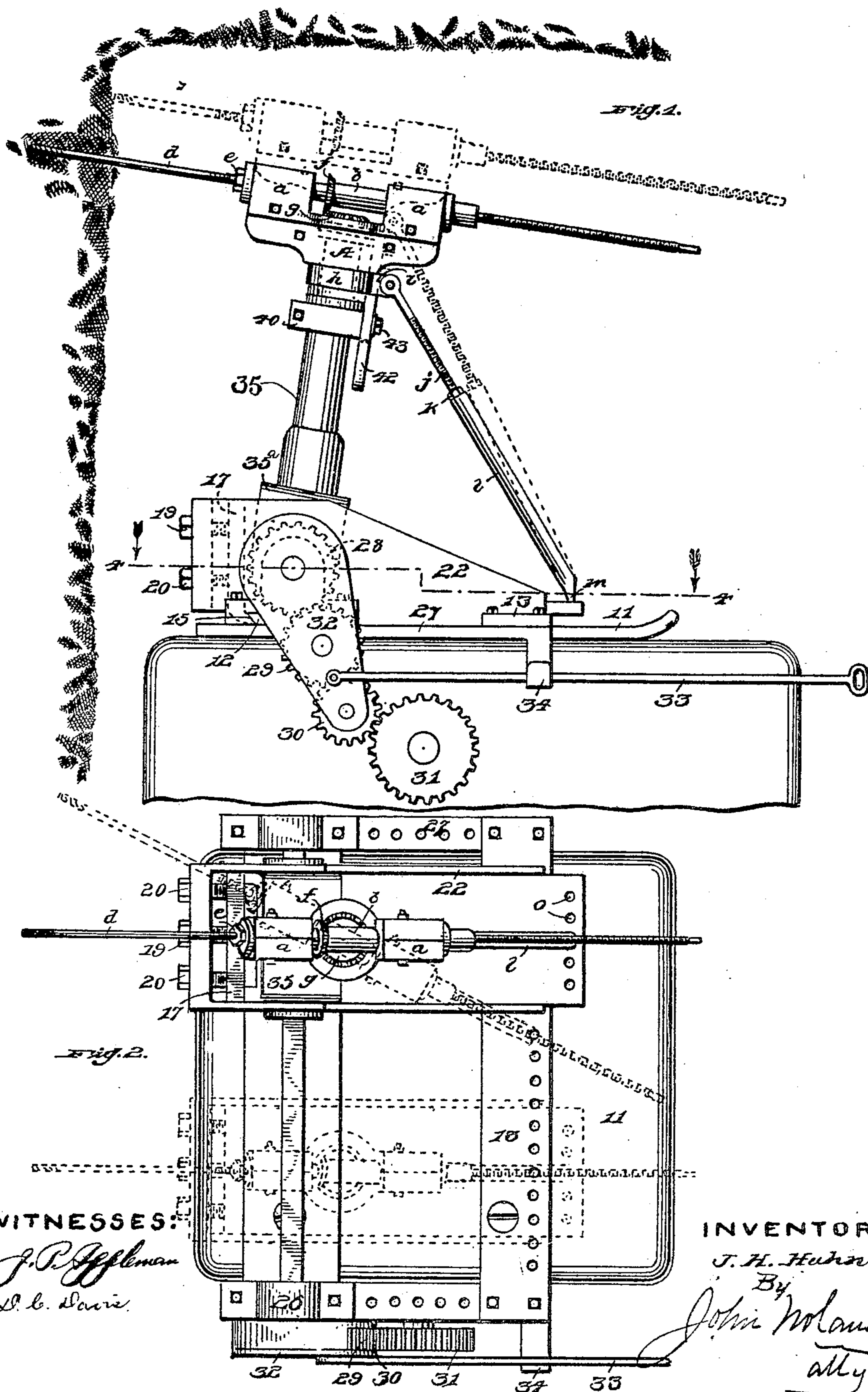
PATENTED OCT. 3, 1905.

J. H. HUHNS.

MACHINE FOR OPERATING COAL AUGERS.

APPLICATION FILED JULY 31, 1903. RENEWED AUG. 17, 1904.

3 SHEETS—SHEET 1.



WITNESSES:

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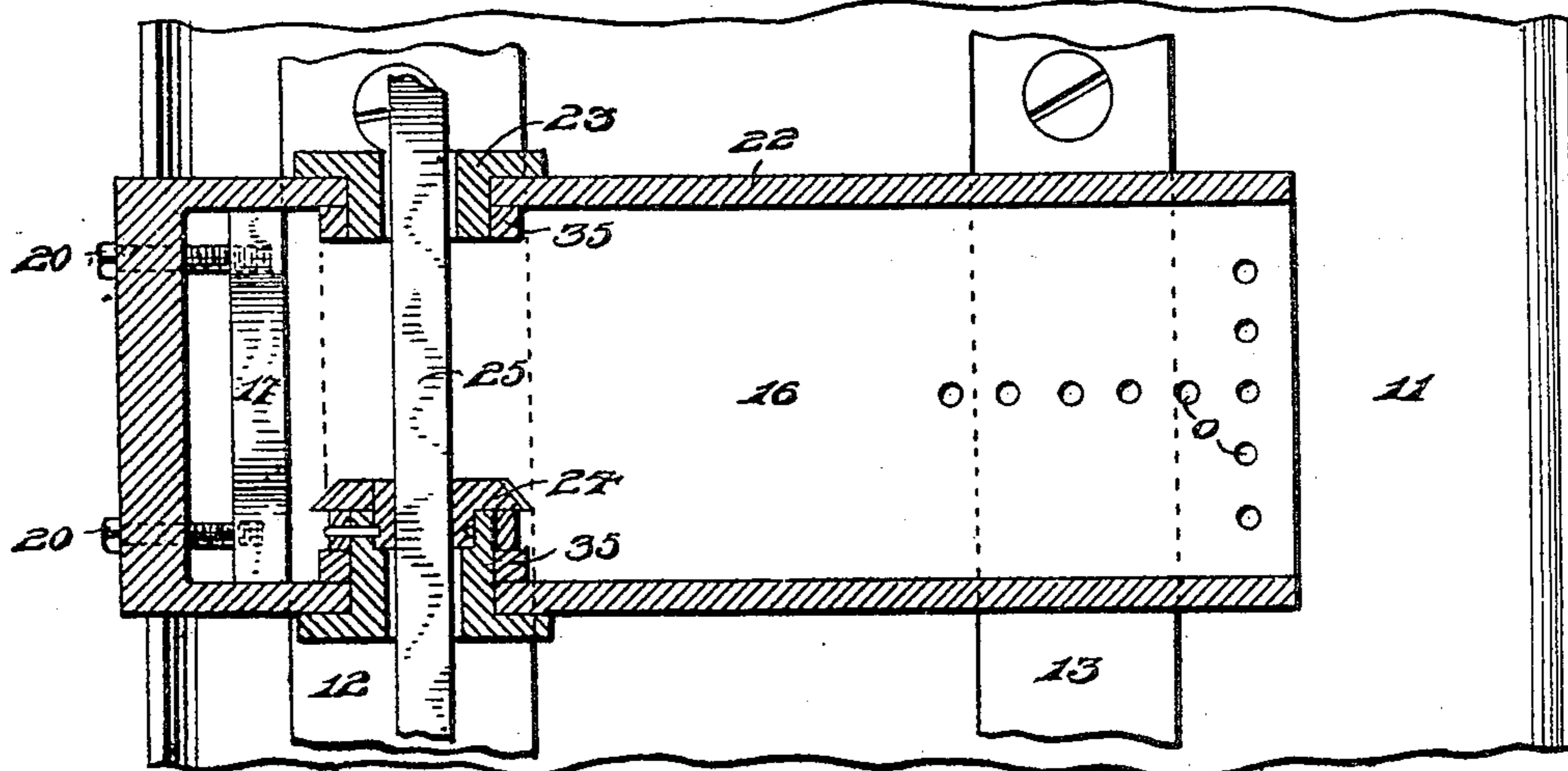
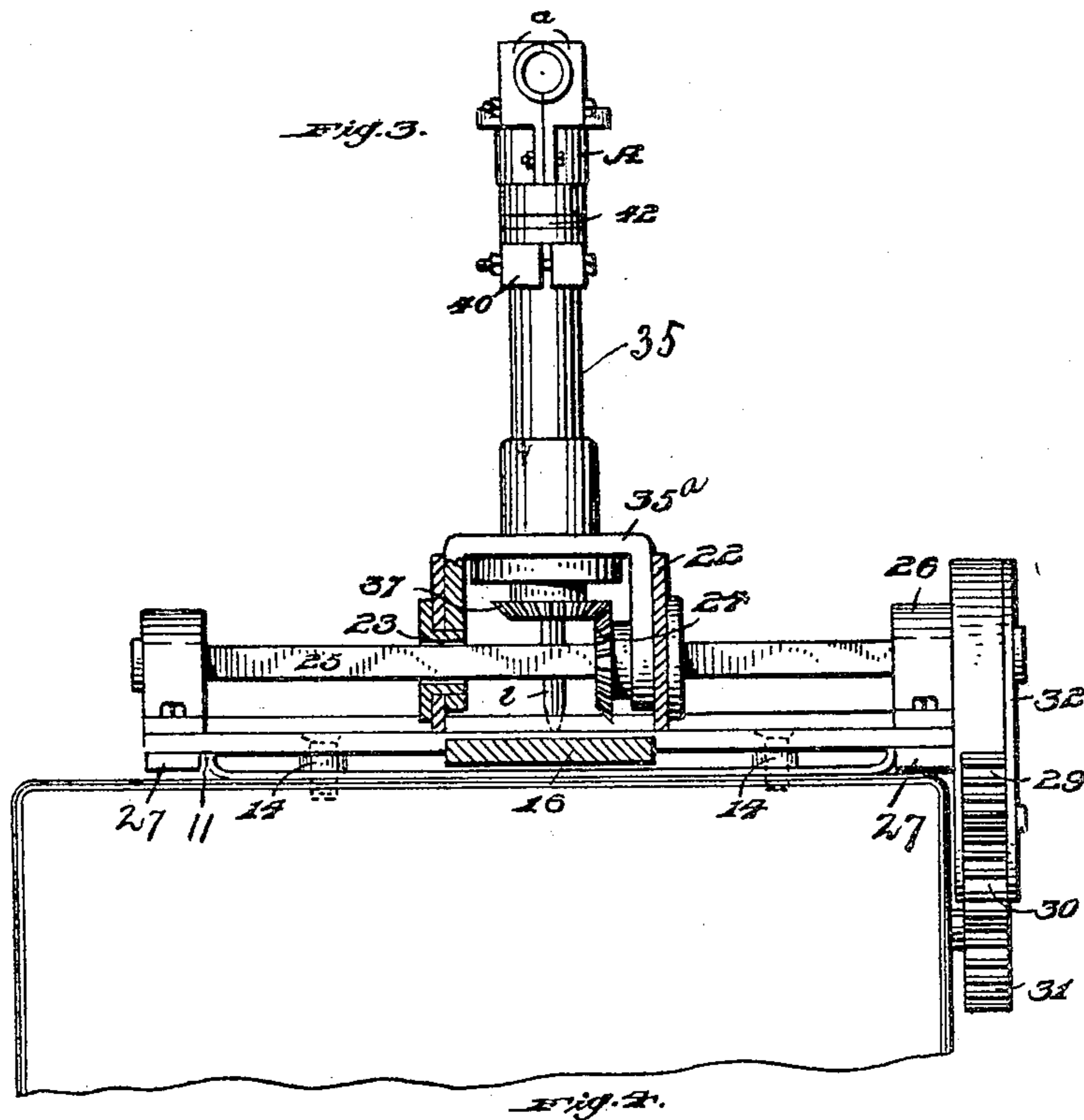
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3 SHEETS—SHEET 2.



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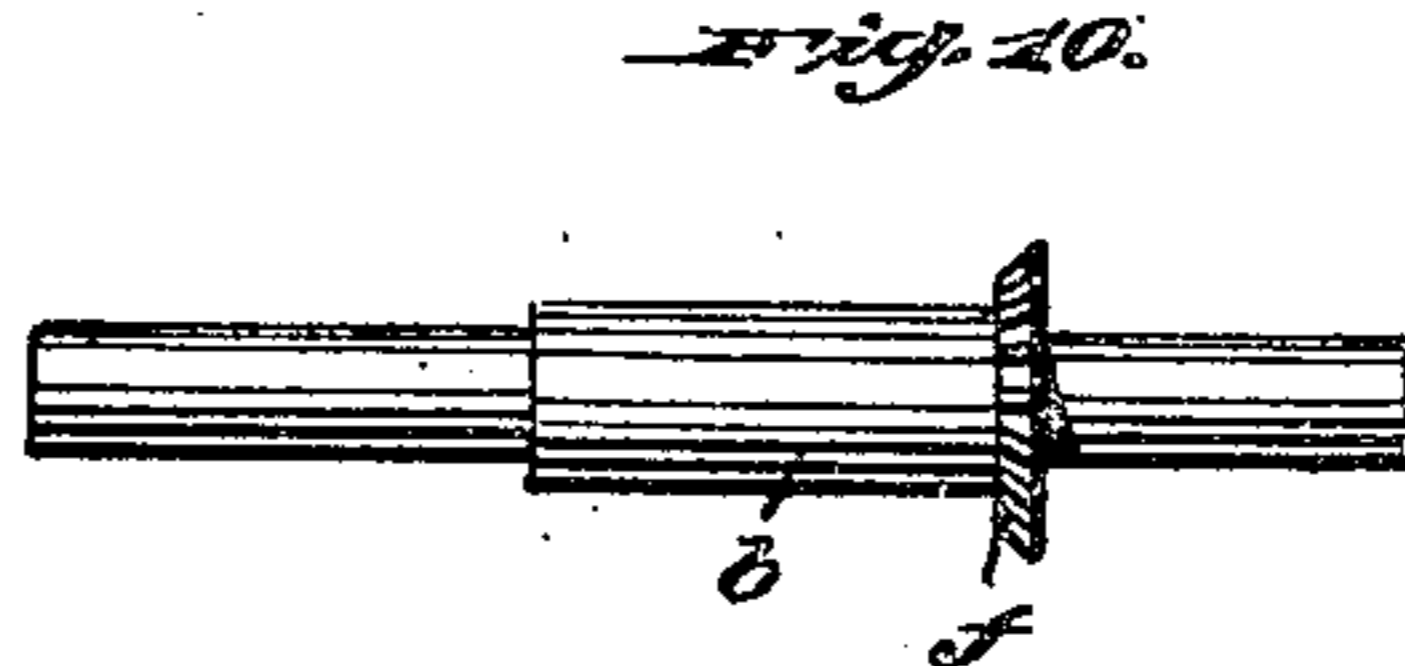
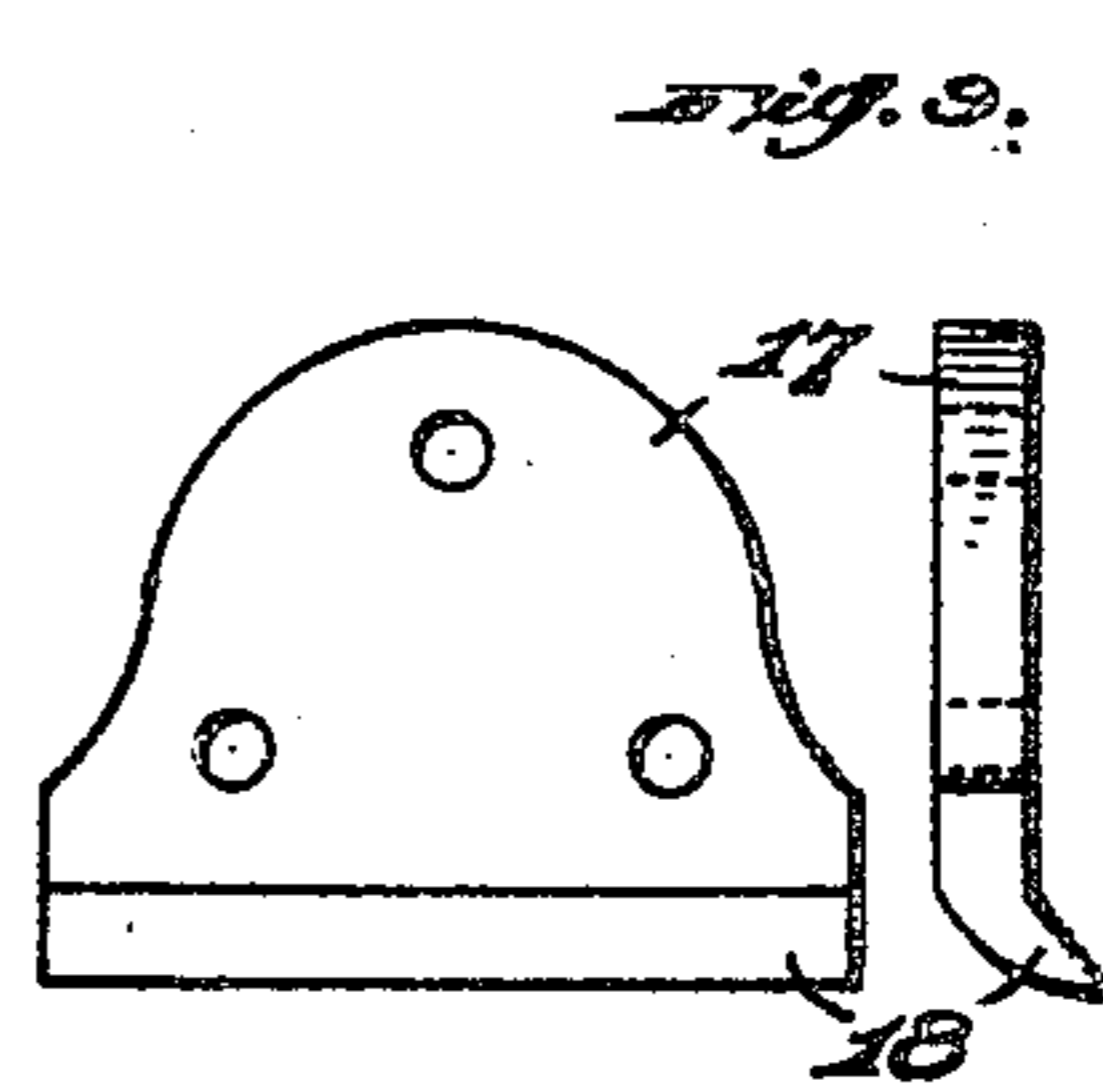
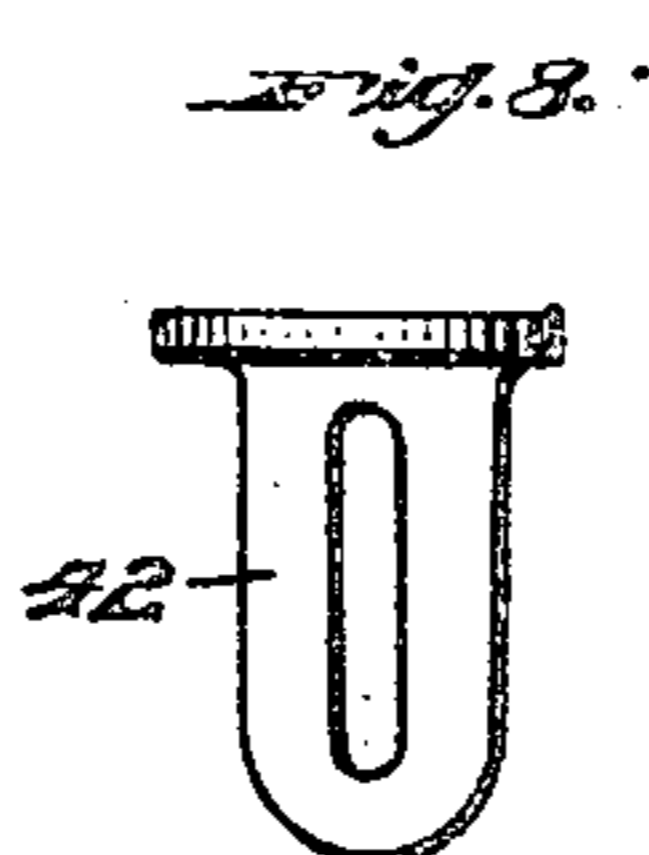
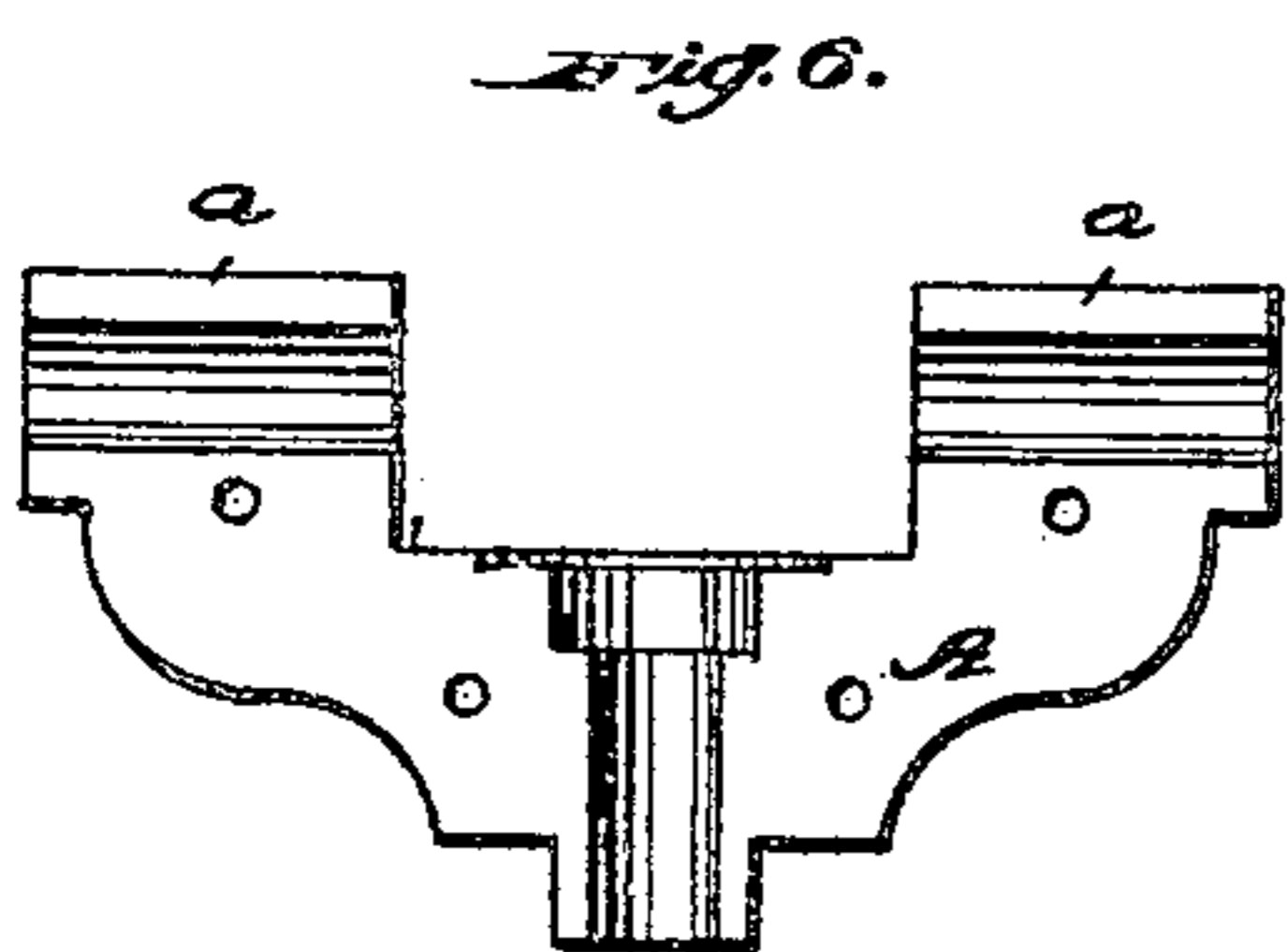
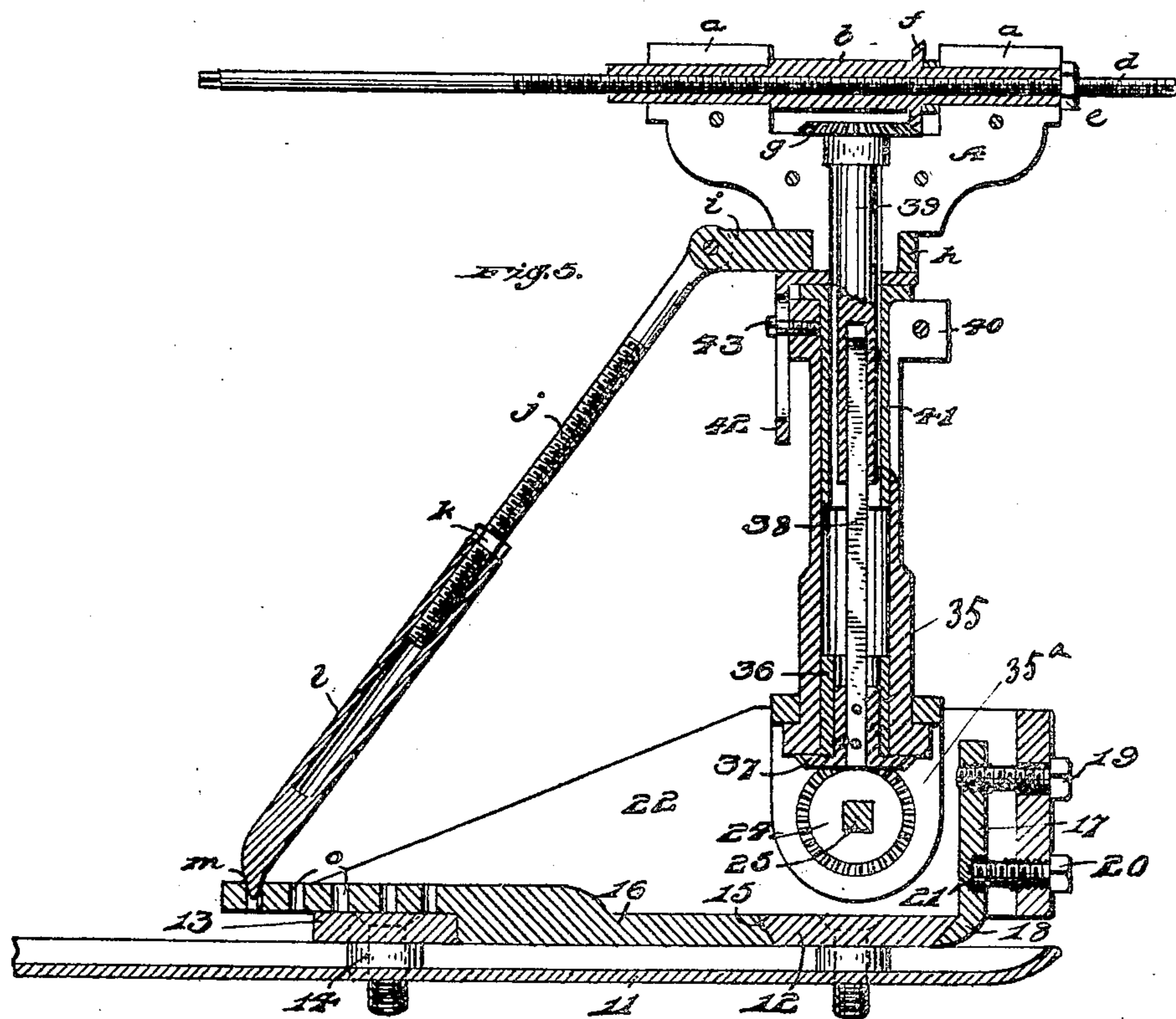
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3 SHEETS—SHEET 3



WITNESSES:

J. P. Appleman.  
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# UNITED STATES PATENT OFFICE.

JOHN H. HUHN, OF UNIONTOWN, PENNSYLVANIA.

## MACHINE FOR OPERATING COAL-AUGERS.

No. 801,013.

Specification of Letters Patent.

Patented Oct. 3, 1905.

Application filed July 31, 1903. Renewed August 17, 1904. Serial No. 221,095.

*To all whom it may concern:*

Be it known that I, JOHN H. HUHN, a citizen of the United States of America, residing at Uniontown, in the county of Fayette and State of Pennsylvania, have invented certain new and useful Improvements in Machines for Operating Coal-Augers, of which the following is a specification.

This invention relates to drills, and particularly to that class known as "rock-drills."

One object of the invention is to produce a drill and its support in which the drill may be adjusted transversely and vertically with relation to the base or support.

Furthermore, an object of the invention is to provide a brace which is movable with the drill-post, whereby the said brace is in position to operate in line with and against the pressure of the drill.

Furthermore, an object of the invention is to produce novel means for affording the adjustment of the post and in provision of novel means for securing the said post in adjusted position.

Furthermore, an object of the invention is to produce a drill of the character noted which will possess advantages in points of efficiency and durability, proving at the same time simple in construction and comparatively inexpensive to produce and maintain.

With the foregoing and other objects in view the invention consists in the details of construction and in the arrangement and combination of parts, to be hereinafter more fully set forth and claimed.

In describing the invention in detail reference will be had to the accompanying drawings, forming part of the specification, wherein like characters denote corresponding parts in the several views, and in which—

Figure 1 is a view in elevation from the side, illustrating a rock-drill embodying the invention. Fig. 2 is a top plan view thereof. Fig. 3 is a front elevation with the feed-bar removed and with parts in section. Fig. 4 is a horizontal sectional view taken on the line 4-4 of Fig. 1. Fig. 5 is a vertical sectional view. Figs. 6 and 7 are a detail view of one of the post-heads. Fig. 8 is a detail view of a bracket for adjusting the post-head. Fig. 9 illustrates a side and end of clamping-plate. Fig. 10 is a view in elevation of a combined sleeve and shaft.

In the drawings, 11 indicates an oil-trap, which may be supported on a motor or any suitable base, and combined guides and sup-

ports 12 and 13 are secured to the oil-trap by means of bolts run through the collars 14 and threaded in the bottom of the oil-trap. The guide and support 12 has downwardly-tapered edges 15, and a carriage 16 has a beveled edge fitting against one edge of the guide and support 12. A clamping-plate 17 has its lower portion formed into a flange 18, beveled to the contour of the opposite edge of the guide and support 12, the said clamping-plate being removable and adjustable through the medium of the bolt 19, run through the end wall of the carriage and threaded in the said plate at the top, which bolt when turned exerts a pull toward the rear on the top of said plate, and the bolts 20, which are threaded in the end wall of the carriage and have their ends seated in the recesses 21 near the lower edge of the plate, the said bolts 20 exerting an inward pressure on the lower edge of the clamping-plate. Hence it is that between the bolt 19 and the bolts 20 the plate 17 may be made to engage the guide and support 12 in a manner to prevent movement of the carriage except through the manipulation of said bolts.

The sides 22 of the carriage have apertures in which bushing 23 are fitted and a beveled gear-wheel 24 is mounted in one of the said bushings and is driven by the shaft 25, the said shaft being mounted in suitable bearings 26 and the said bearings being supported by bars 27, attached to the two guides 12 and 13. The outer end of the shaft has a gear-wheel 28, which is driven through the medium of the wheels 29 and 30 from the power-driven wheel 31. The wheels 29 and 30 are carried by the arm 32, mounted to partially rotate on the shaft, and the said arm is swung on its pivot by means of the rod 33 to cause an engagement and disengagement of the wheels 30 and 31. A hanger 34 is provided for supporting the rod 33.

A stirrup 35<sup>a</sup> is pivoted on the bushings 23, and a drill-post 35 is supported by and swings with the stirrup. The drill-post has a bushing 36 at its lower end, in which the gear-wheel 37 is mounted to mesh with and take motion from the gear-wheel 24. The gear-wheel 37 rotates the shaft 38, which extends upwardly in the drill-post and to which is telescopically connected an extension-shaft 39, which latter is journaled in the head A. The upper end of the post is split, and a clamp 40 is applied thereto to secure in place the internal collar 41. A bracket 42 is bound to the clamp 40 by means of the screw 43, and

the said bracket is provided to support the head A in varying degrees of vertical adjustment, as one of said adjustments being shown in dotted lines, Fig. 1.

5 The head A comprises two duplicate sections having branches *a a*, each of which carry semibearings for the combined sleeve and shaft *b*, the said part *b* having a threaded hole for the reception of the feeding-rod *d*,  
10 the said feeding-rod having a jam-nut *e*, which may be used, if desired, as a stop to limit the rearward movement of the drill or to bind the drill in the bearing. The combined sleeve and shaft has a toothed flange *f* meshing with and  
15 taking motion from the wheel *g* of the extension-shaft 39.

The collar *h*, secured to the head to move therewith, has a lug *i*, to which is pivoted the threaded brace-bar *j*, the said bar *j* having an  
20 adjusting-nut *k*, against which the sleeve *l* bears, the said sleeve having a pointed end *m*, fitting in one of the apertures *o*, formed in the bottom of the carriage.

Through the medium of the bar *j*, sleeve *l*,  
25 and the nut *k* the brace may be varied in length in order to vary the position of the drill-post to suit the requirements of the operator, and it will be observed that as the head A is turned from side to side the said brace  
30 is carried with it, so that the bracing action thereof will be always in line with the line of action of the drill.

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

1. In a drill, a suitable base, combined guides and supports, a carriage mounted thereon, a drill-post pivotally connected to the carriage, a head carried by the post, drill-oper-  
40 ating mechanism carried by the post and head and a brace moved with the head and engaging the carriage.

2. In a drill, a suitable base, combined guides and supports, a carriage adjustable  
45 thereon, a drill-post pivotally connected to the carriage, a head carried by the post, drill-operating mechanism carried by the post and head, a brace connected to the head and comprising a threaded rod, a nut on the rod and  
50 a sleeve on the rod engaging the nut and resting on the carriage.

3. In a drill, a suitable base, combined guides and supports, a carriage adjustable thereon, a drill-post connected to the carriage,  
55 a head carried by the post, drill-operating mechanism on the head and post, a brace connected to and moved with the head, the said brace operating against the action of the drill, as and for the purpose described.

60 4. In a drill, a suitable base, combined guides and supports, a carriage adjustable thereon, a clamping-plate carried by the carriage, bolts for moving the lower end of the plate into engagement with the guide and for  
65 drawing the upper edge of the plate in an op-

posite direction, a drill-post pivoted to the carriage, a drill-head and operating mechanism, and a brace secured to the head and adapted to engage the carriage, the said brace acting in line with the drill, as and for the pur- 70  
pose described.

5. In a drill, a suitable base, combined guides and supports, a carriage on the supports, a clamping-plate connected to the carriage and engaging one of the guides, to clamp 75  
the carriage in varying positions, a drill-post and head and means for operating the drill, an adjustable brace carried by the head and adapted to engage the carriage, the said brace acting in line with the drill, and means for 80  
throwing the drill into and out of operation, as and for the purpose described.

6. In combination with a mining-machine, a drill driven by the power of said mining-machine and comprising a driving part, a drill- 85  
shaft shiftable in a horizontal plane and having angular adjustment in a vertical plane on the mining-machine and a bodily vertical adjustment relative to the machine and a horizontal shaft maintaining driving connection 90  
between the driving part and the drill-shaft during both the horizontal and vertical plane movements of the drill.

7. In combination with a mining-machine and a part thereof through which motion may 95  
be transmitted; a drilling-machine constructed for mounting on the mining-machine, and comprising a horizontal shaft, a driving part through which driving connection may be made and broken between the horizontal shaft 100  
and the transmitting part of the mining-machine, and a drill to which said driving motion is transmitted through the horizontal shaft; said drill being movable relatively to the motion-transmitting portion of the mining-ma- 105  
chine in the horizontal plane of the axis of the shaft and also in a plane transverse thereto, while maintaining its driven connection through said shaft.

8. In a drilling-machine, the combination 110  
with a motion-transmitting part, a horizontal shaft, a driving part making and breaking driving connection between the shaft and the motion-transmitting part, an extensible drill-post adjustable in the horizontal plane of the 115  
axis of said shaft, relatively to the motion-transmitting part and also swinging in a plane transverse to the horizontal shaft and about said shaft as an axis, a drill member mounted on said post and swinging in a plane trans- 120  
verse to the post, whereby it has a bodily horizontal movement and also vertical and horizontal swinging movements, and means fixing the drill member in any position which it may assume as a result of its several movements 125  
combined.

9. The combination with the driving part and a shaft receiving rotation therefrom, of an extensible post adapted to swing in an arc about the shaft as the axis and shiftable rela- 130

5 tively to the driving power, a bevel-gear on the shaft, a second shaft at a right angle to the first shaft journaled on the post, a bevel-gear on the second shaft positioned to mesh with the bevel-gear on the first shaft, and a drill operated by the second shaft.

10 10. The combination with the driving part and a shaft receiving rotation therefrom, of an extensible post adapted to swing in an arc about the shaft as the axis and shiftable relatively to the driving power, an extensible shaft at right angles to the first shaft journaled on the post, a bevel-gear on and turning with the first shaft, a bevel-gear on, and turning with the  
15 15 extensible shaft and positioned to mesh with the first-mentioned bevel-gear, and a drill on the free end of the extensible post operated by the extensible shaft.

20 11. The combination with the driving part and a shaft receiving rotation therefrom, of an extensible hollow post swinging in an arc about the shaft as the axis and shiftable hori-

zontally, a bevel-gear on the shaft, a second shaft journaled within the hollow post, a bevel-gear on the second shaft positioned to mesh  
25 with the first-mentioned bevel-gear, and a drill on the free end of the post operated by the second shaft.

12. The combination with a hollow post, of a shaft journaled within the post and provided  
30 with a bevel-gear at its free end, a drill-bearing rotatably mounted on the post, a drill-sleeve journaled in the bearing, a bevel-gear on the drill-sleeve positioned to mesh with the bevel-gear on the shaft, a drill-screw mounted  
35 to work in the drill-sleeve, and a brace-rod connected with the rotatable drill-bearing.

In testimony whereof I affix my signature, in the presence of two witnesses, this 30th day of July, 1903.

JOHN H. HUHN.

Witnesses:

JOHN NOLAND,  
J. P. APPLEMAN.