

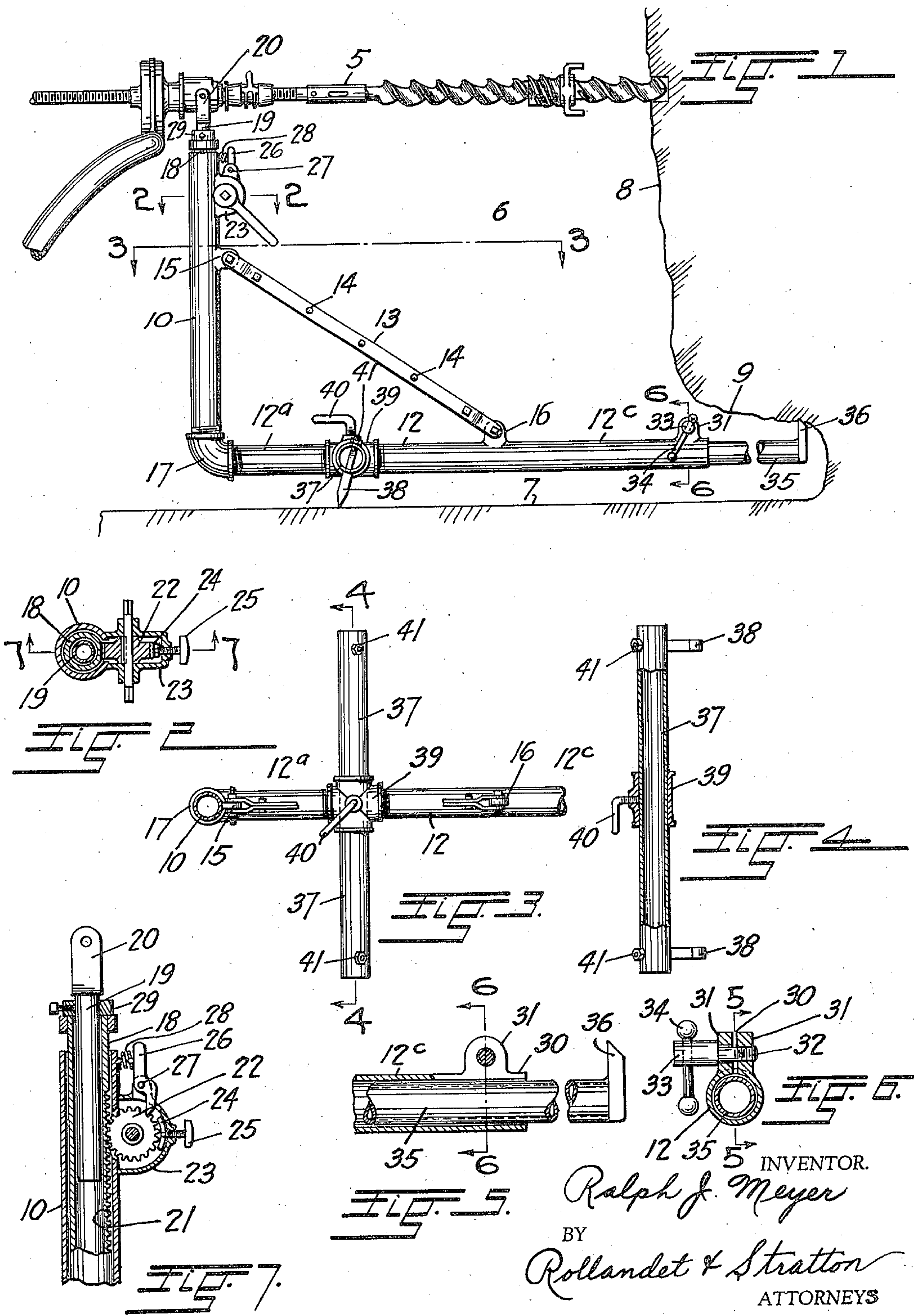
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TOOL SUPPORT

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TOOL SUPPORT

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5 Claims. (Cl. 255—51)

This invention relates to columns for the support of drilling-tools in subterranean excavations, its primary object being to provide a portable device particularly adapted to hold a drilling-tool during the operation thereof, without the use of cumbersome and complicated bracings usually employed in appliances of this type.

Another object of the invention is to provide a column of the above-described character, having simple mechanism for the relative adjustment of a tool supported thereon.

A further object is to provide a column adapted for the support of a drilling-tool which, by reason of its simple construction, may be produced at little cost, is easily manipulated and placed in an operative position and owing to the absence of complicated parts, is durable and easily kept in order, and still other objects reside in details of construction and a novel arrangement of parts as will be found in the course of the following description.

In the accompanying drawing, in which like reference characters designate corresponding parts throughout the views,

Figure 1 represents the tool-support in its operative position.

Figure 2 is a section taken on the line 2—2 of Figure 1.

Figure 3 is a section taken on the line 3—3, Figure 1.

Figure 4 is a section along the line 4—4 of Figure 3.

Figure 5 is an enlarged sectional view of an end-portion of the device.

Figure 6 is a section on the lines 6—6 shown in Figures 1 and 5.

Figure 7 is a sectional elevation of the upper portion of the column in the plane indicated by the line 7—7 of Figure 2.

Referring further to the drawing, a drilling-tool of conventional construction is designated by the numeral 5 in Figure 1. This tool is per se, not a part of the present invention and may be either of a hand-operated or motor-driven type.

An excavation in which the tool is operated, is designated at 6, 7 being the floor, 8 the breast, and 9 an undercut at the foot of the breast.

The column 10, upon which the tool is mounted, extends vertically at an end of a horizontal foot 12 and is braced by a diagonal 13. The brace is preferably made of two straps riveted together, as at 14, and bolted at its bifurcated ends to lugs 15 and 16 projecting laterally from the column and the foot. Both the column and the foot are

made of standard tubing and they are connected by means of an elbow 17.

Slidably fitted in the column, is a tubular extension-member 18 and slidably fitted in this extension, is a standard 19 provided with a bifurcated head 20 for the attachment of the drill-tool. The parts 18 and 19, telescoping one within the other, and within the column, provide an extension for adjustment of the tool to any desired elevation within the range of extension of the parts.

In order to elevate the tool, the extension-member 18 has externally, a rack 21 which is engaged by a pinion 22 mounted for rotation in a housing 23 fastened exteriorly of the column.

A friction brake for holding the pinion against rotation consists of a shoe 24 opposite the toothed circumference of the pinion, and a headed screw 25 in a threaded opening of the housing, which has a swivel connection with the shoe.

A pawl 26 pivoted on the housing, as at 27, is held in engagement with the teeth of the pinion by a spring 28, in order to hold the pinion against retrograde movement. An adjustable collar 29 on the standard 19 holds it in adjusted positions relative to the tubular extension-member 18.

The free end of the tubular foot is split lengthwise, as at 30, and it has at opposite sides of the split, lugs 31 provided with alined openings for the application of a clamping screw 32. The screw extends loosely through the opening of one of the lugs into a correspondingly screw-threaded opening of the other lug, and it has in its head 33, a sliding rod 34 to facilitate its manual rotation.

Slidably fitted in the end-portion of the foot is an extension 35 provided with an upwardly projecting sharp-edged toe 36, providing a prong which, in practice, engages in an undercut of the excavation, as shown in Figure 1 of the drawing.

The extension is fastened in its adjusted positions by means of the clamp-screw 33.

At a point remote from the outer extremity of the shoe, is a cross-member 37 which, at its ends, carries downwardly ranging spikes 38 to provide prongs which engage with the floor of the excavation. The cross-member, which like the foot and the column, is made of standard tubing, extends slidably through a cross-fitting 39 by which alined sections 12a and 12c of the foot are rigidly connected. A set-screw 40 in a threaded opening of the cross-fitting 39, holds the cross-member in its adjusted positions.

The spikes are fastened at the ends of the cross-member by shanks extending through apertures of the member, and nuts 41 screwed

upon the threaded ends of the shanks. It is preferred to place the spikes slantingly rearwardly with relation to the breast of the excavation, engaged by the drilling-tool.

- 5 In the operation of the tool, the three prongs projecting in opposite directions and engaging surfaces of the excavation in opposed planes, cooperate as anchoring means to hold the column at the end of the foot, rigidly in an upright position, it being apparent that the three points of contact, in triangular formation, will anchor the column against displacement in any direction.

10 By virtue of the adjustability of the cross-member and the extension of the foot, the support is readily adapted to be placed in excavations of different forms and dimensions, while the telescoping parts of the column, permit of placing the tool in any desired elevation within the limits of the movement of said parts.

- 20 It is to be understood that variations in details of construction may be resorted to without departing from the spirit and scope of the invention.

What I claim and desire to secure by Letters Patent is:

- 25 1. A tool-support comprising a column having means for the support of a tool, a laterally projecting foot at the lower end of the column, an upwardly projecting prong at an end of the foot, an adjustable cross-member on the foot, and downwardly ranging anchoring means on the cross-member at opposite sides of the foot.

30 2. A tool-support comprising a column having

means for the support of a tool, a laterally-projecting foot at the lower end of the column, an upwardly projecting prong at an end of the foot, a cross-member on said foot between said prong and the column, downwardly ranging prongs on the cross-member at opposite sides of the foot, and means permitting lengthwise adjustment of the cross-member.

3. A tool-support comprising a longitudinally extensible column having means for the support of a tool, and a support for the column comprising a laterally-projecting foot, a longitudinally adjustable cross-member on the foot, downwardly ranging prongs on the cross-member, and means on the foot for locking the cross-member in adjusted positions.

4. A tool-support comprising a column, a support for the column, anchoring means on the support, an extension for the column including telescoping parts, one of which has means for the support of a tool, and self-locking means cooperative with another of the parts to mechanically elevate the tool-supporting part.

5. A tool-support comprising a column having means for the support of a tool, a laterally projecting foot at the lower end of the column, a longitudinally adjustable extension at an end of the foot, an upwardly projecting prong at the end of said extension, a cross member on said foot between said prong and the column, and downwardly ranging prongs on the cross member at opposite sides of the foot.

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