Jan. 22, 1952 A. C. SORBEL 2,583,498

TILE SETTER FOR BORED WELLS

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Fig. 1.

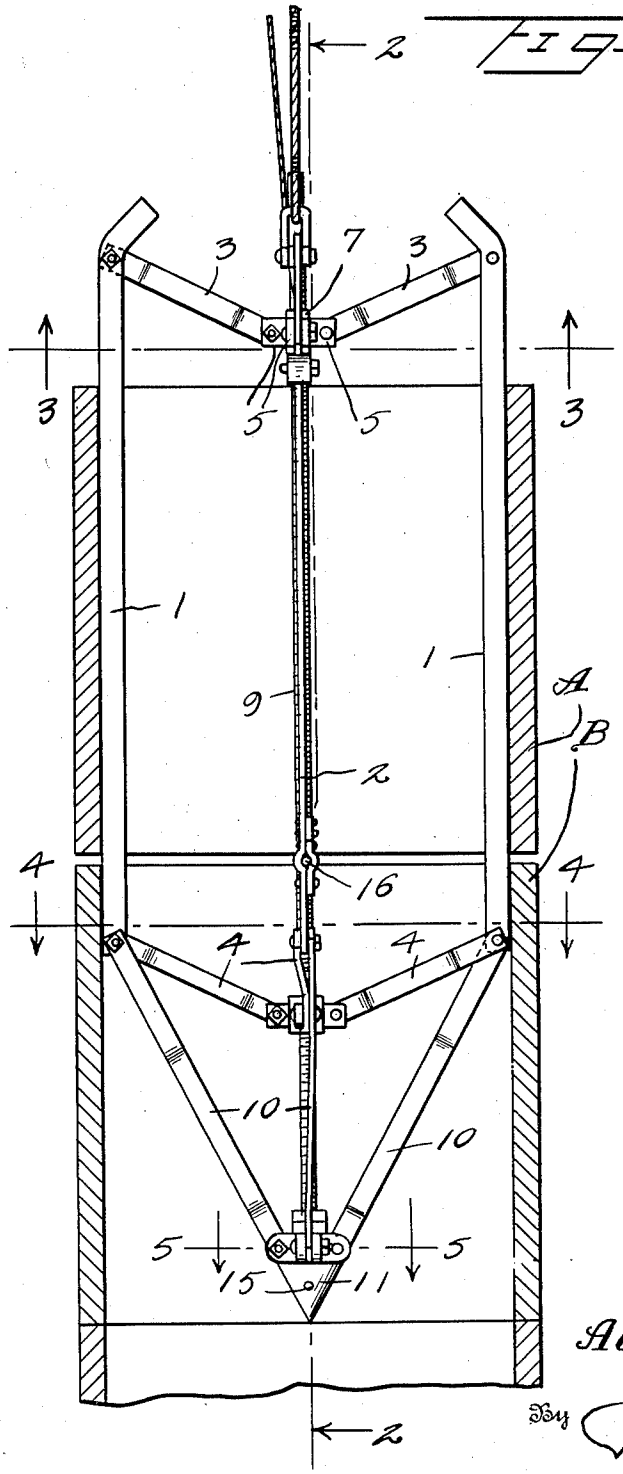


Fig. 5.

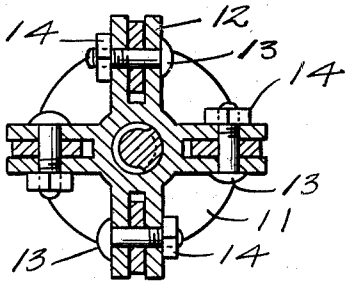
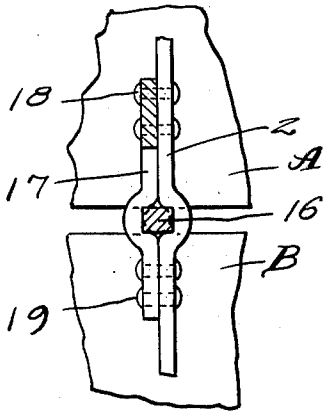


Fig. 6.



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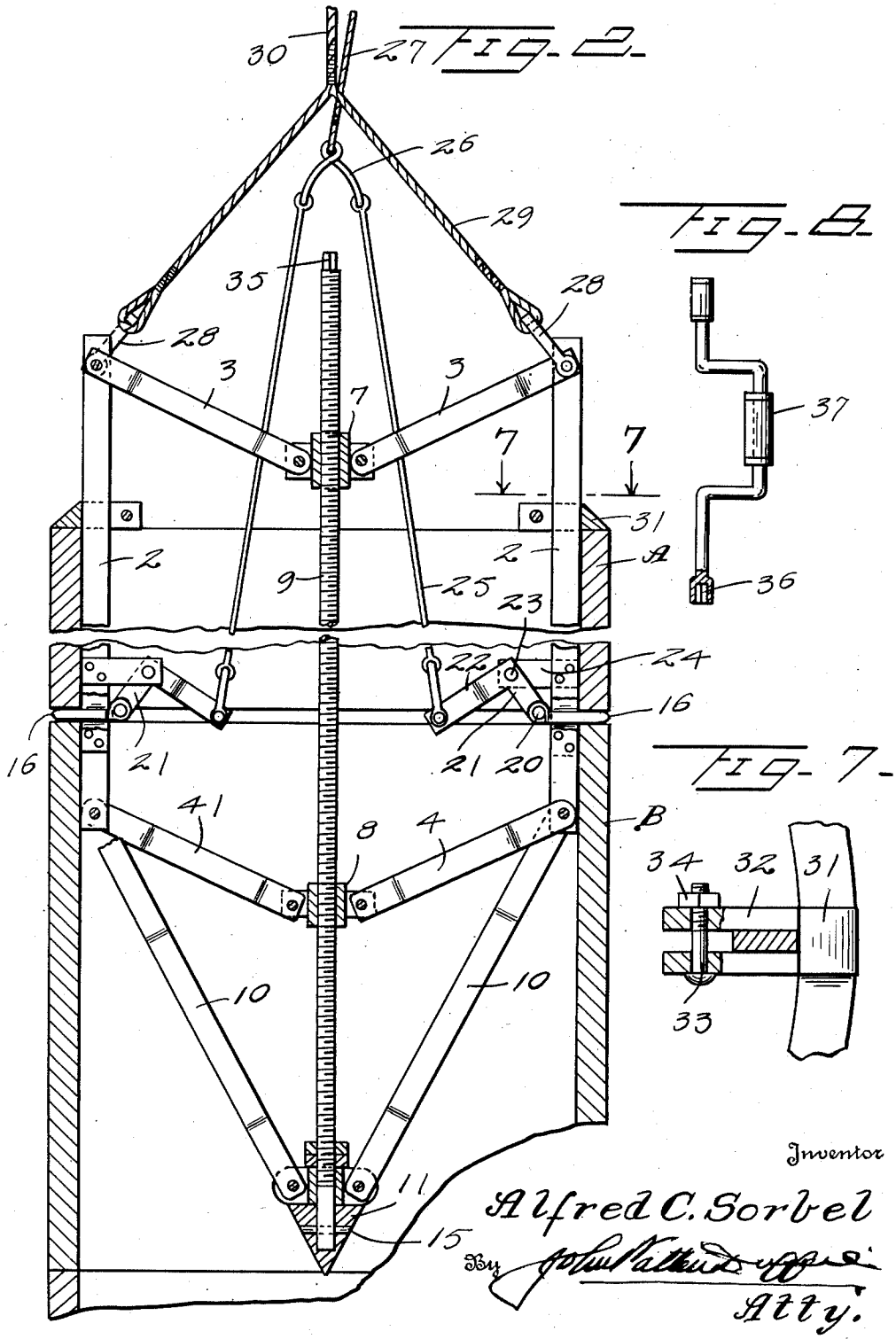


FIG. 2.

FIG. 8.

FIG. 7.

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Fig. 3.

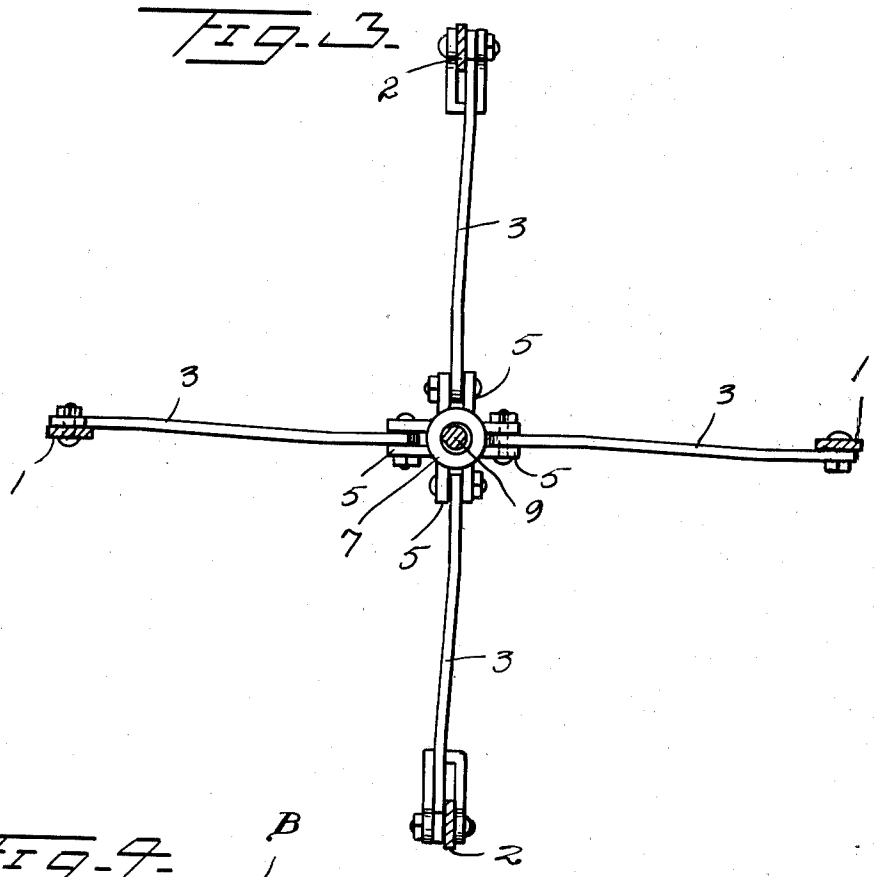
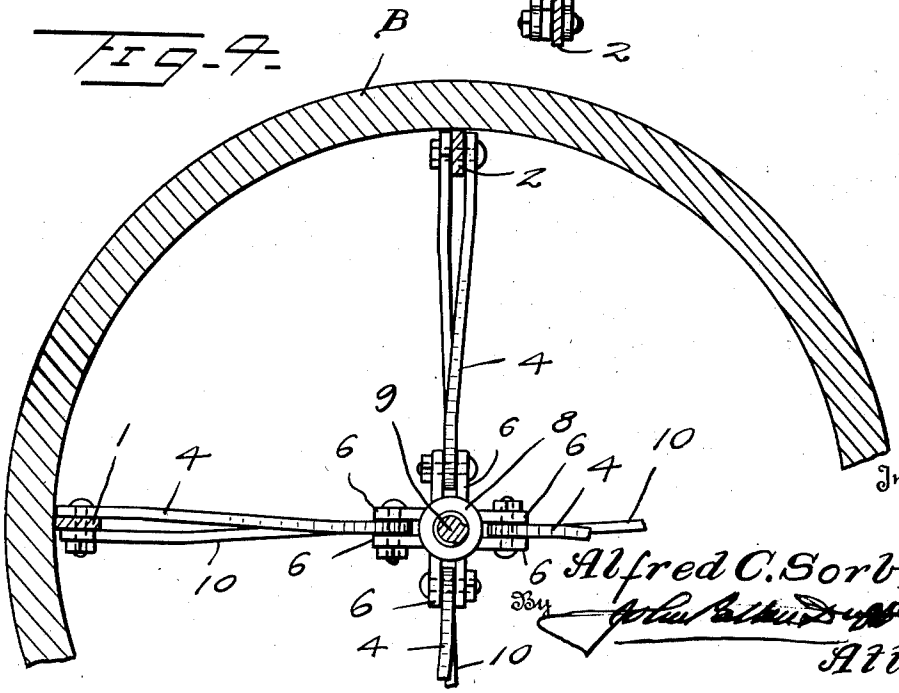


Fig. 4.



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TILE SETTER FOR BORED WELLS

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Application October 19, 1948, Serial No. 55,391

1 Claim. (Cl. 294—97)

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This invention relates to new and useful improvements in tile setters for bored wells.

The primary object of my invention is to provide a tile setter for bored wells, consisting of a plurality of parallel perpendicular frame bars that may be expanded by means of a central vertical threaded rod or screw and crank wrench to closely fit the inner surface of the tile section about to be lowered in the well on top of the tile section previously set in place, and carrying means for supporting the tile section while being lowered and set in place and which may be subsequently released preparatory to withdrawing the tile setter from the well.

A further object of my invention is to provide the lower end of the tile setter with an inwardly tapering nose that slips into the tile section previously set in place and serves as a guide, in co-operation with the lower ends of the perpendicular frame bars, in positioning the tile section in being lowered in perfect alignment on top of the former.

A still further object of my invention is to provide novel means for connecting the frame of the tile setter to the hoisting cable of the well rig.

With the foregoing and other objects in view that will appear as the nature of my invention is better understood, the same consists in the novel features of construction, combination and arrangement of parts illustrated in the accompanying drawings and more particularly pointed out in the appended claims.

In the accompanying drawings, which are for illustrative purposes only and are therefore not drawn to scale:

Figure 1 is a side elevation, illustrating the application of my invention.

Figure 2 is a vertical longitudinal section, taken on line 2—2 of Figure 1.

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

Figure 4 is a similar view, taken on line 4—4 of Figure 1.

Figure 5 is also a horizontal section, taken on line 5—5 of Figure 1.

Figure 6 is an enlarged detail fragmentary section, taken through the lower end of one of the perpendicular frame bars and the corresponding tile supporting pin.

Figure 7 is a horizontal section, taken on line 7—7 of Figure 2, and Figure 8 is an elevational view of a crank wrench used in turning the vertical rod or screw.

Referring to the drawings for a more particular

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description of my invention, and in which drawings like parts are designated by like reference characters throughout the several views, my invention essentially comprises the four flat perpendicular frame bars 1 and 2, respectively, which are spaced equi-distances apart in alternating relation in the circumference of a circle, and connected at their upper and lower ends by means of the downwardly inclined radial link bars 3 and 4, to corresponding pairs of radial ears or lugs 5 and 6, formed on the upper and lower collars 7 and 8, respectively, having screw threaded engagement with the central vertical exteriorly threaded adjusting rod 9.

The main frame of the tile setter is provided with a lower inwardly tapering portion, consisting of the inwardly and downwardly inclined bars 10, connected at their upper ends to the lower ends of the corresponding frame bars 1 and 2 and at their lower ends to the inwardly tapering nose or plug 11. The lower ends of the bars 10 are connected to the nose or plug 11 by pairs of radial ears or lugs 12 extending from the body portion of said nose and the transverse bolts 13 and nuts 14, or other equivalent means. As shown, the lower end of the threaded adjusting rod 9 extends into the base of the nose 11 and is held rigidly in place by the transerse pin 15.

In carrying out my invention, horizontal supporting pins 16 are carried by the lower ends of the perpendicular frame bars 2 and extend a sufficient distance therefrom to engage the lower or bottom edge of the tile section about to be lowered in place. The supporting pins 16 are held in operative position by the keeper plates 17 riveted or otherwise secured at opposite ends, as at 18 and 19, to the aforesaid frame bars 2. The inner ends of the supporting pins 16 are loosely connected, as at 20, to the shorter arms 21 of the bell-crank levers 22, pivoted at the junction of their longer and shorter arms, as at 23, to the inner ends of the horizontal brackets 24, fastened to the lower ends of the frame bars 2 above the supporting pins. Steel cables 25 are secured to the inner ends of the longer arms of the bell-crank levers 22 and connected at their upper ends by means of the twisted clevis 26, to the lower end of the trip rope 27.

The upper ends of the perpendicular frame bars 2 are connected by means of the links 28 with the lower ends 29 of the split cable or chain 30, which may be connected with the hoisting cable (not shown) of the well rig.

The upper ends of the perpendicular frame

bars 2 are provided with the adjustable clamps 31 which rest on the upper edge of the tile section about to be lowered in the well and prevent the frame bars 1 and 2 from slipping downwardly should the aforesaid tile section engage or come into contact with a protruding rock or other obstruction in the wall of the well. The clamps 31 are held in adjusted position by means of the inwardly extending parallel arms 32, which straddle the corresponding frame bars 2, and the transverse bolts 33 and nuts 34.

In practice, the upper square end 35 of the vertical adjusting rod 9 is engaged by the lower end 36 of the crank wrench 37 and said rod turned by means of the crank wrench until the frame bars 1 and 2 have been moved outwardly or extended to a sufficient extent to closely fit the inner wall of the tile section, as A, about to be lowered in the bored well on top of the tile section B, previously set in place.

The supporting pins 16 fit under the bottom edge of the tile section A and support the latter while the same is being lowered into position. Attention is invited to the fact that the lower ends of the frame bars 1 and 2 extend somewhat below the supporting pins 16 and co-act with the lower inwardly tapering portion of the frame in positioning the tile section A in perfect alignment with the tile section B. When the tile section A is in place, the supporting pins 16 are retracted and dis-engaged from the bottom edge of the tile section A by exerting a pull on the trip rope 27. After the tile section A has been set in place, the size of the main frame may be contracted by turning the vertical adjusting screw 9 in the opposite direction by means of the crank wrench 37, preparatory to lifting the tile setter out of the well by means of the chain or cable 30.

The above described operation is continued until all of the tile sections have been set in place, one directly on top of the other, in the bored well.

From the foregoing description taken in connection with the drawings, it is thought that the construction, operation and advantages of my invention will be readily understood, without requiring a more extended explanation.

Various changes in the form, proportions and minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of my invention, as defined in the appended claim.

Having described my invention, what I claim as new and desire to secure by Letters Patent, is:

A tile setter for bored wells, comprising a central vertical exteriorly threaded adjusting rod, upper and lower collars having screw threaded engagement with said rod, a main frame consisting of perpendicular frame bars adapted to closely fit the inner wall of a tile section about to be lowered in the well, transverse radially disposed links for connecting the upper and lower ends of said frame bars to the corresponding collars, an inwardly and downwardly tapering nose carried by and depending from the lower end of the main frame, keeper plates fastened to certain of the perpendicular bars of the main frame, horizontal diametrically opposed supporting pins slidably mounted in said keeper plates, and adapted to engage and support the bottom edge of the above mentioned tile section, manually operated means, including bell-crank levers, steel cables and a trip rope, for retracting and dis-engaging said supporting pins from the bottom edge of said tile section when in place, the lower ends of the frame bars extending somewhat below the position of the supporting pins and co-acting with the tapering nose in positioning the tile section to be lowered in perfect alignment on top of the tile section previously set in place, adjustable clamps carried by the upper ends of certain of the frame bars and fitting on the upper edge of the tile section to be lowered in the well, and hoisting and lowering means connected with the main frame.

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