

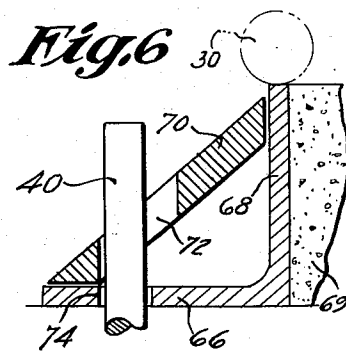
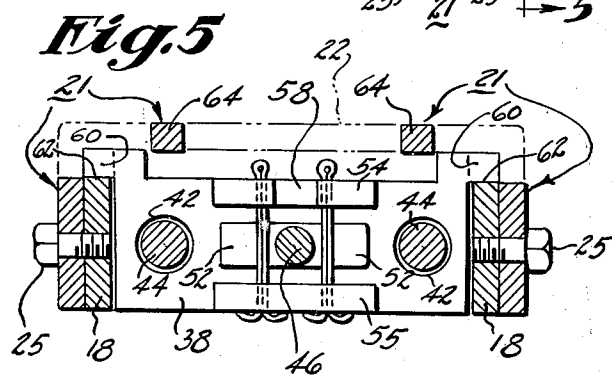
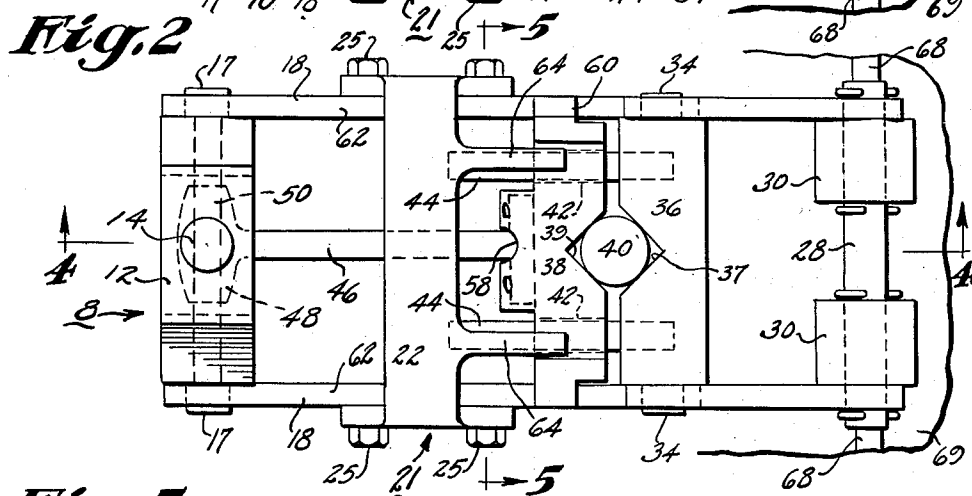
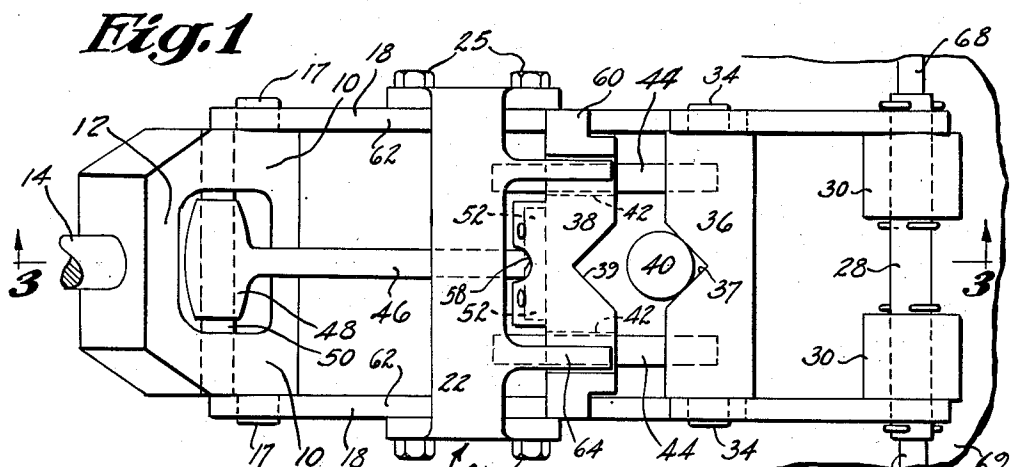
Feb. 10, 1953

L. POLSELLI ET AL
PIN PULLING MACHINE

2,628,070

Filed May 25, 1950

2 SHEETS—SHEET 1



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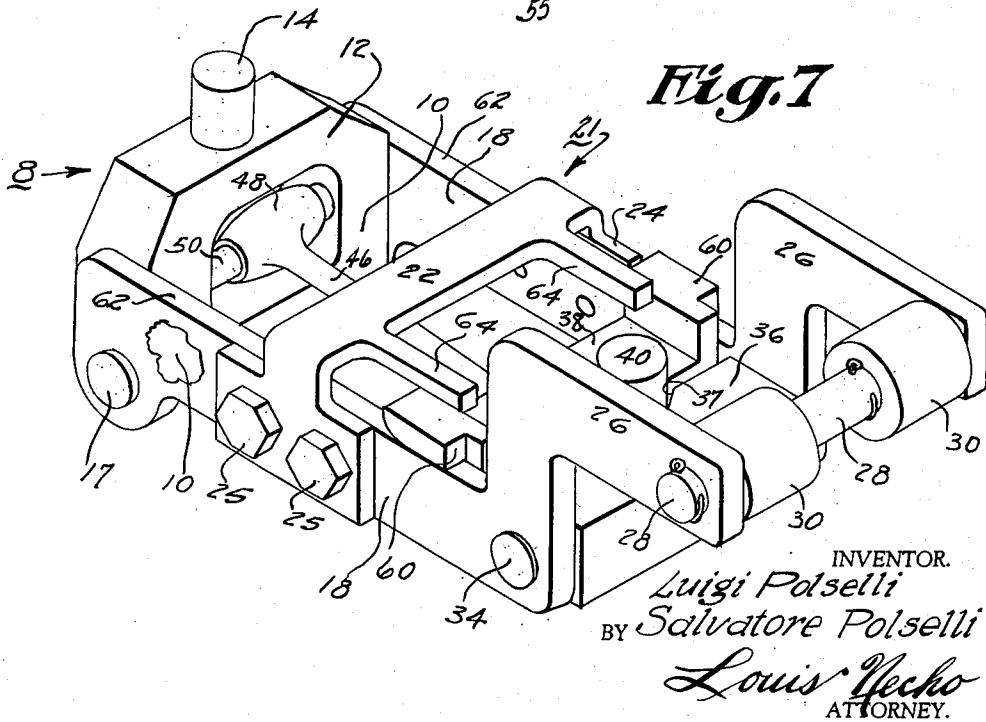
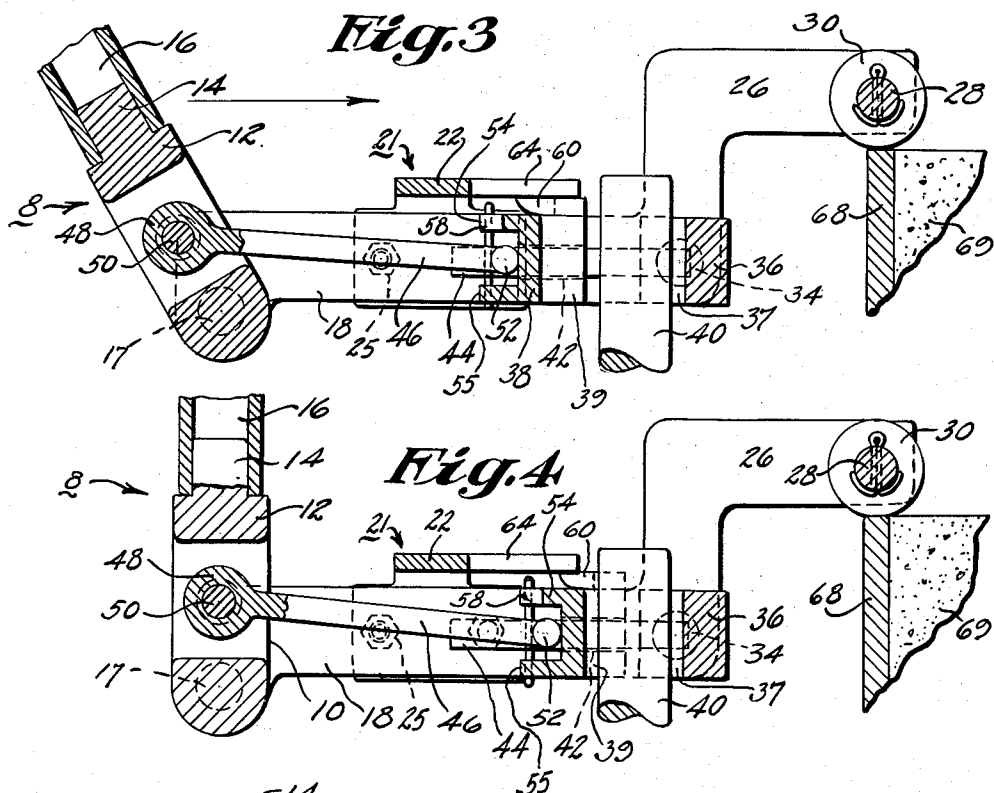
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2 SHEETS—SHEET 2



UNITED STATES PATENT OFFICE

2,628,070

PIN PULLING MACHINE

Luigi Polselli and Salvatore Polselli,
Philadelphia, Pa.

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1 Claim. (Cl. 254—132)

1

Our invention relates to a machine for pulling out pins which are driven into the ground as markers or for holding concrete forms, as well as for pulling out stakes, pipes and other objects which are embedded in the ground or in walls and which can not be pulled out without great exertion.

One object of the invention is to produce an improved machine of the type set forth.

A further object is to produce an improved pin pulling machine which automatically adjusts itself to the angle of the axis of the pin to be pulled to the end that the pin is pulled out in the direction in which it was driven thereby facilitating the work and minimizing disturbance to the ground or wall from which the pin is pulled out.

A further object is to produce an improved machine which is sturdy, simple, portable, easy to operate and versatile in that it can be used to pull out a variety of objects very easily, regardless of whether such objects are driven into, or are embedded in, the ground or a wall.

These and other objects are attained by my invention as set forth in the following specification and as shown in the accompanying drawings in which:

Fig. 1 is a top plan view of a machine embodying the invention, the same being shown with its jaws open.

Fig. 2 is similar to Fig. 1 except that the machine is shown with its jaws engaging the pin to be pulled out.

Fig. 3 is a sectional view on line 3—3 on Fig. 1.

Fig. 4 is a sectional view on line 4—4 on Fig. 2.

Fig. 5 is a sectional view on line 5—5 on Fig. 2.

Fig. 6 is a fragmentary and diagrammatic view, partly in vertical section and partly in elevation, illustrating the manner in which the machine is used for pulling out pins used for holding concrete forms.

Fig. 7 is an enlarged perspective view of the machine.

The machine illustrated includes a rear, operating yoke 8 formed of two limbs 10 and an upper connecting piece 12 which terminates in a stub shaft 14 adapted to be engaged by a hollow operating handle only the lower portion of which is shown at 16 in Figs. 3 and 4. The machine further includes a chassis formed of two arms 18 the rear ends of which are pivotally secured to the lower ends of limbs 10 by means of a pin or stub shaft 17. Intermediate their ends, the arms 18 are straddled by a spacing and reinforcing yoke 21 which includes a top cross piece 22 which over-

2

lies the arms and pendent limbs 24 which are rigidly secured to the side arms 18 as at 25. The front ends of the side arms 18 are bent upwardly and forwardly to form elevated extensions 26. The ends of the extensions 26 are spaced by means of a shaft 28 which carries freely rotating rollers 30 which will be hereinafter further referred to.

To the front ends of side arms 18 there is pivoted as at 34, a jaw 36 which has a rearwardly facing, preferably horizontally serrated, and preferably V-shaped recess 37. Except for being rotatable about its pivot 34, jaw 36 is not otherwise movable.

Coacting with jaw 36 is a longitudinally movable jaw 38 having a recess 39 which is similar, and complementary to, recess 37 and cooperates therewith in engaging a pin 40 to be pulled out. The jaw 38 is provided with through guide holes 42 through which pass guide pins 44 which are carried by jaw 36. The portions of guide pins 44 which project from jaw 36 are longer than the stroke or range of movement of movable jaw 36 so that the free, or left hand ends of guide pins 44 are always engaged in holes 42. The movable jaw 38 is connected to operating yoke 8 by means of a rod 46 the rear end of which terminates in a sleeve 48 which is rotatable about a pin or stub shaft 50 located above the pivot pin 17, which secures the side arm 18 to the limbs 10 of the yoke 8. The other, or front end of rod 46 terminates in an elongated roll 52 which is normal to the axis of rod 52 and which is freely rotatable in a recess formed in the rear portion of jaw 38.

The jaw 38 is further provided with upper and lower rearwardly projecting walls 54 and 55 and cotter pins 56, or the like, are used to prevent disengagement of roll 52 from jaw 38 upon the movement of rod 46 to the left as viewed in the drawings. If necessary for a full stroke of rod 46, the upper rear wall 54 of jaw 38 will be notched as at 58 to permit rod 46 to be tilted forwardly to the desired extent.

In addition to moving over guide pins 44, the movable jaw 38 is provided with lateral extensions 60 which ride over the upper edges 62 of the side arms 18, and the yoke 21 is provided with guide prongs 64 which also engage extensions 60.

The operation is as follows:

The device is adjusted to the position of Fig. 1, in which the jaws are open, and is lowered over the pin 40 that the pin projects upwardly between jaws 36 and 38. The hollow operating handle 16 is then slipped over the stub 14 and is moved, in the direction of the arrow in Fig. 3, to the position of Fig. 2 in which the jaws engage the pin.

3

The handle 16 is long enough to provide the desired mechanical advantage and is rigid enough to withstand the requisite pressure.

Further movement of the handle in the direction of the arrow will operate to lift the pin. After the pin has been lifted somewhat, the handle is returned to the position of Fig. 1 to allow the jaws to engage a lower portion of the pin and the operation is repeated. By this means, the pin is pulled out in the direction in which it was driven instead of being bent which would happen if the pin is lifted by one, or by a few long strokes of the handle.

In Fig. 6 there is shown an angle form having a horizontal member 66 and a vertical member 68 for retaining freshly poured concrete 69. With this form a key 70 is also used for reinforcing the vertical wall 68 and the pin 40 is driven through a hole 72 in the key 70 which registers with a hole 74 in the horizontal member 66 of the angle form. In pulling out a pin used for anchoring the concrete retaining form of Fig. 6, the rolls 30 are placed on the upper edge of the vertical member 68 of the form to serve as a fulcrum, as diagrammatically shown in Fig. 6. When the concrete retaining form is not used, the front ends of side arms 18, adjacent pivot 34, serve as fulcrum points.

The mounting of jaws 36 and 38 permits the jaws to adapt themselves to, and adequately to engage, a pin to be pulled out even if such pin had not been driven down vertically.

What we claim is:

A pin pulling device including a chassis formed of spaced side arms, a first jaw pivoted to, and

4

disposed between said arms near one end thereof, an actuating yoke pivoted to said arms near the other end thereof, an operating rod pivoted at one end thereof to said yoke, a second jaw disposed between said arms and pivoted to the other end of said rod, said second jaw being movable, by movement of said actuating yoke about its pivot, toward and away from, said first jaw, the juxtaposed edges of said jaws having complementary recesses therein for receiving a pin to be pulled out, guide pins carried by said first jaw and extending in the direction of said second jaw, there being openings in said second jaw for receiving said guide pins, lateral extensions carried by said second jaw and adapted to ride on said side arms, a second yoke overlying, and secured to, said arms intermediate the ends thereof, guide prongs carried by said second yoke and overlying said second jaw, and lateral, raised end extensions carried by the ends of said side arms remote from said actuating yoke.

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