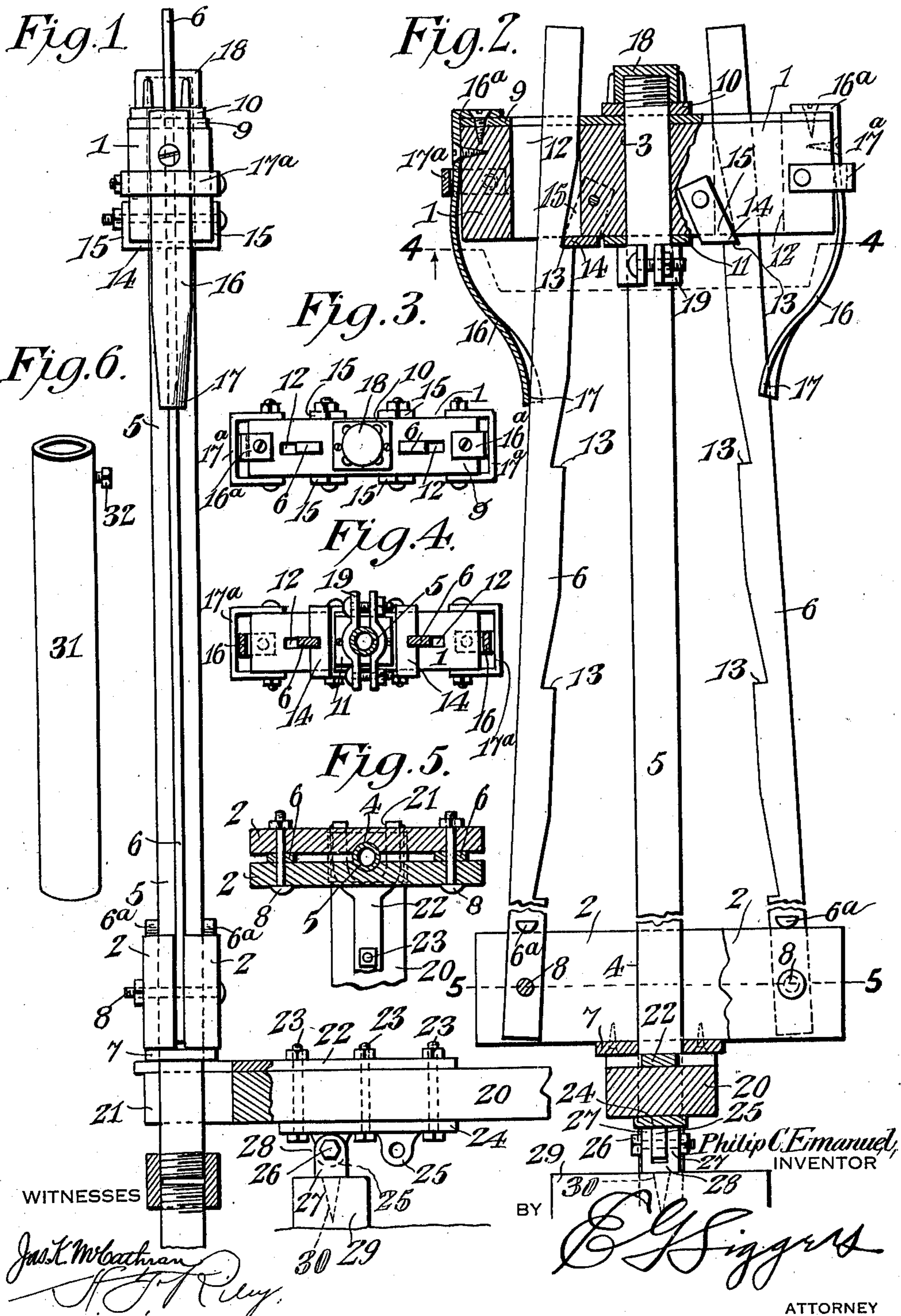


P. C. EMANUEL.  
 DEVICE FOR PULLING PUMP PIPES.  
 APPLICATION FILED JULY 27, 1910.

988,762.

Patented Apr. 4, 1911.



# UNITED STATES PATENT OFFICE.

PHILIP C. EMANUEL, OF BENNETTSVILLE, SOUTH CAROLINA.

DEVICE FOR PULLING PUMP-PIPES.

988,762.

Specification of Letters Patent.

Patented Apr. 4, 1911.

Application filed July 27, 1910. Serial No. 574,174.

*To all whom it may concern:*

Be it known that I, PHILIP C. EMANUEL, a citizen of the United States, residing at Bennettsville, in the county of Marlboro and State of South Carolina, have invented a new and useful Device for Pulling Pump-Pipes, of which the following is a specification.

The invention relates to a device for pulling pump pipes.

The object of the present invention is to provide a simple, efficient and comparatively inexpensive device of great strength and durability, designed for pulling out of the ground driven pump pipes, when it becomes necessary to remove the same for renewing the point or screen or other purpose, and adapted to be operated by hand from the surface of the ground, and capable of enabling a pump pipe to be easily and quickly removed in sections without liability of crushing or otherwise damaging the same and at a minimum cost.

With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawing, and pointed out in the claims hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawing:—Figure 1 is a side elevation of a pump pipe pulling device, constructed in accordance with this invention. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a plan view. Fig. 4 is a horizontal sectional view on the line 4—4 of Fig. 2. Fig. 5 is a similar view on the line 5—5 of Fig. 2. Fig. 6 is a detail view of an extension section.

Like numerals of reference designate corresponding parts in all the figures of the drawing.

In the embodiment of the invention illustrated in the accompanying drawing, the pump pulling device comprises in its construction upper and lower horizontal cross heads 1 and 2, having central openings 3 and 4 to receive a pump pipe 5, and adjustably connected by upright ratchet bars 6, pivoted at their lower ends to the cross head 2, and adjustably engaging the upper cross

head. The lower cross head, which may be constructed of any suitable material, preferably consists of spaced bars connected at an intermediate point by a plate 7, and at the end portions by horizontal bolts 8, which also pierce the ratchet bars 6 and form pivots for the same. The ratchet bars 6 are provided at opposite sides with projections or enlargements 6<sup>a</sup>, located at the upper face of the lower cross head and adapted to rest upon the same to relieve the fastening bolts of the strain incident to the pulling of the pump pipes and to increase the strength and durability of the device. The plate 7 is secured to the lower edges or faces of the bars of the lower cross head 2, and it has a central opening through which the pump pipe 5 passes.

The upper cross head is preferably reinforced at its upper face by a metallic plate 9, and is also equipped with upper and lower plates 10 and 11, having central openings registering with the pump pipe receiving opening 3. The ratchet bars 6 extend through opposite slots 12 in the upper cross head, and they are provided at their inner edges with tapering notches or recesses forming shoulders 13, adapted to cooperate with engaging portions 14 of the upper cross head. The engaging portions 14 preferably consist of metallic straps extending across the lower face of the upper cross head at the inner portions of the slots 11 and having their terminals 15 bent upwardly at an angle and secured to the side faces of the cross head 1. The slots 12 are of sufficient size to permit the ratchet bars 6 to move outwardly beyond the engaging portions and to permit their shoulders to pass the same in the downward movement of the ratchet bars. The ratchet bars 6 are maintained normally in engagement with the upper cross head by means of springs 16, depending from the ends of the upper cross head and secured at their upper terminals to the same and extending downwardly and inwardly therefrom and having their lower terminals 17 grooved longitudinally to fit the smooth outer edges of the ratchet bars. The upper attached ends 16<sup>a</sup> of the springs are angularly bent to fit the ends of the upper cross head, which is equipped at its ends with horizontal yokes 17<sup>a</sup>. The yokes embrace the springs and have their side portions secured to the upper cross head.

In applying the device to a pump pipe, the

lower cross head is loosely placed thereon and the upper cross head is secured to the upper end of the pump pipe by an interiorly threaded cap 18 and a clamping collar 19.

5 The cap is screwed on the upper end of the uppermost section of the pump pipe, and the collar is clamped around the pump pipe at the bottom of the upper cross head to maintain the same against the cap when the

10 lower cross head is moved downward. The clamping collar simply supports the weight of the upper cross head and does not grip the pump pipe with any considerable degree of force.

15 The pump pipe is lifted out of the ground by means of a forked or bifurcated lever 20, preferably constructed of wood, but a metallic lever may be employed if desired. The front engaging lever is provided with a

20 recess 21 to enable it to fit around the pump pipe, and it is reinforced by a metallic plate or piece 22, secured by bolts 23 to the lever. The bolts also fasten a bottom plate 24 to the

25 bottom plate 24 is provided with a plurality of integral depending ears 25, adapted to receive a pivot bolt 26 for connecting the lever to the upper sides 27 of a bracket 28, mounted on a block 29 and forming a ful-

30 crum for the lever. The block is preferably constructed of wood, and the bracket 28 is provided with a depending shank 30, rigid in the block, as shown. The fulcrum is shift-

35 able or adjustable along the lever to vary the relative lengths of the arms thereof to enable the lever to exert greater or less power in drawing a pump pipe, and also to be arranged for increasing the stroke of the lever and the lifting of the pipe, when

40 greater leverage is not required for pulling the same from the ground.

The particular construction of the lever and the manner of mounting the same is not claimed in the present application, as it

45 forms the subject-matter of a companion application, filed May 31, 1910, Serial No. 564,207.

In Fig. 2 of the drawing the upper cross head is shown at the limit of its upward

50 movement with one of the pipe sections above the ground ready to be removed. In the pulling of the pump pipe sections, the lower cross head is lifted by the lever, which in turn lifts the upper cross head and the

55 pump pipe, a distance equal to the length of the stroke of the lever, which is then reversed to permit the lower cross head and the ratchet bar to drop by gravity for another operation of the lever. This is re-

60 peated until the section is pulled above the surface of the ground. Should the section be of greater length than the ratchet bars 6, the extension tube 31 may be placed on the pump pipe and interposed between the

65 cap and the upper cross head. This will

drop the upper cross head to a lower position on the pump pipe and will enable the lifting operation to be carried on at the surface of the ground. The extension tube 31 is provided with a set screw 32, arranged to

70 engage the pump pipe for retaining it in position.

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

75

1. A device for pulling pump pipes including upper and lower cross heads having pump pipe receiving openings, means for connecting the upper cross head with the pump pipe, opposite ratchet bars connected

80 with one of the cross heads and engaging the other cross head, and a lever cooperating with the lower cross head to lift the same.

2. A device for pulling pump pipes including upper and lower cross heads provided with openings for the passage of a pump pipe, a cap engaging the upper cross head and adapted to be screwed upon the upper end of a pump pipe, pipe clamping means engaging the upper cross head at the

85 bottom thereof, ratchet bars connected with one of the cross heads and detachably engaging the other, and an operating lever cooperating with the lower cross head for lifting the same.

90

95

3. A device for pulling pump pipes including upper and lower cross heads provided with pipe receiving openings, the upper cross head being also provided at opposite sides of its opening with slots, means

100 for securing the upper cross head to a pump pipe, spaced upright ratchet bars connected at their lower ends to the lower cross head and operating in the slots of the upper cross head, the latter being provided with engag-

105 ing means co-acting with the ratchet bars, and means for raising the lower cross head.

4. A device for pulling pump pipes including upper and lower cross heads provided with pipe receiving openings, the upper cross head being also provided at opposite sides of its opening with slots, means for securing the upper cross head to a pump pipe, spaced upright ratchet bars connected

110 at their lower ends to the lower cross head and operating in the slots of the upper cross head, the latter being provided at the inner sides of the slots with fixed engaging portions cooperating with the ratchet bars, springs projecting from one of the cross

115 heads and engaging the ratchet bars at the outer sides thereof for normally holding the same against the said fixed engaging means, and means for raising the lower cross head.

5. A device for pulling pump pipes including upper and lower cross heads provided with pipe receiving openings, the upper cross head being also provided at opposite sides of its opening with slots, means for securing the upper cross head to a pump

120

125

130

pipe, spaced upright ratchet bars connected at their lower ends to the lower cross head and operating in the slots of the upper cross head, the latter being provided at the inner 5 sides of the slots with fixed engaging portions cooperating with the ratchet bars, springs secured to the upper cross head and extending downwardly therefrom and having free lower ends bearing against the 10 ratchet bars at the outer sides thereof, and means for lifting the lower cross head.

6. A device for pulling pump pipes including upper and lower cross heads having pipe receiving openings, the upper cross 15 head being also provided with opposite slots, means for connecting the upper cross head with a pump pipe, upright ratchet bars pivoted at their lower ends to the lower cross head and slidable in the openings of the 20 upper cross head, said ratchet bars having smooth outer edges and provided at their inner edges with shoulders or teeth having smooth outer edges, said upper cross head having fixed means arranged to engage with 25 the shoulders or teeth, springs secured to the upper cross head at the ends thereof and depending therefrom and having free lower

terminals provided with grooves fitting against the ratchet bars at the smooth outer edges thereof, and means for lifting the 30 lower cross head.

7. A device for pulling pump pipes including upper and lower cross heads having pipe receiving openings, the upper cross head being also provided with slots, ratchet 35 bars pivoted to the lower cross head and slidable in the slots of the upper cross head, fixed means extending across the slots of the upper cross head and engaging with the ratchet bars, springs depending from the 40 ends of the upper cross head and arranged to hold the ratchet bars normally in contact with the fixed engaging means, yokes secured to the upper cross head and embracing the springs, means for securing the upper 45 cross head to a pump pipe, and an operating lever for lifting the lower cross head.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

PHILIP C. EMANUEL.

Witnesses:

D. D. McCOLL, Jr.,  
CHAS. PEELE.