

C. LE DUC.
WELL DRIVING APPARATUS.
APPLICATION FILED JUNE 15, 1912.

1,050,668.

Patented Jan. 14, 1913

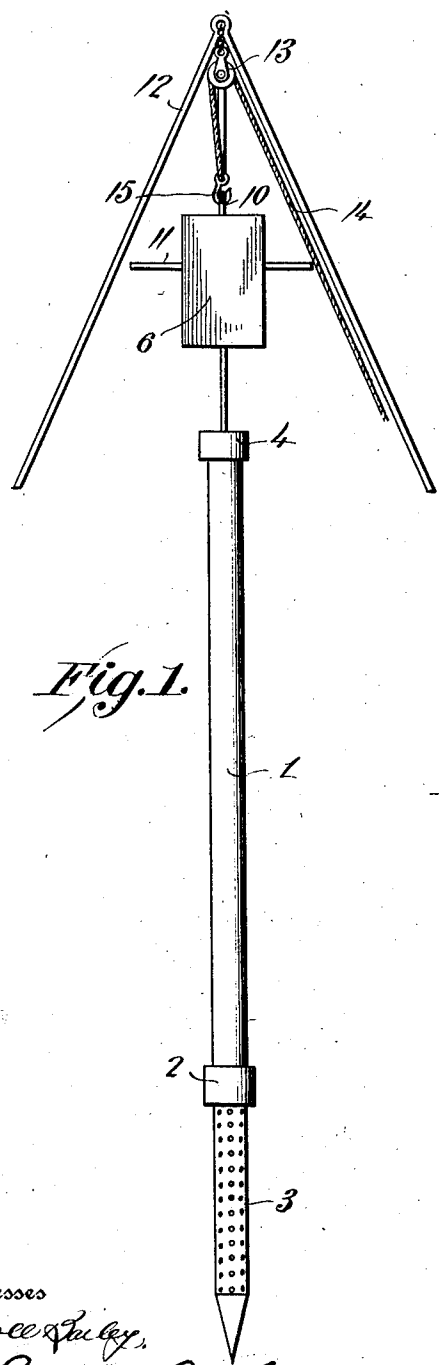


Fig. 1.

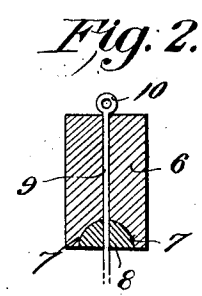


Fig. 2.

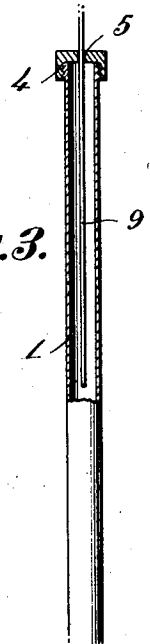


Fig. 3.

Witnesses
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WELL-DRIVING APPARATUS.

1,050,668.

Specification of Letters Patent.

Patented Jan. 14, 1913.

Application filed June 15, 1912. Serial No. 703,867.

To all whom it may concern:

Be it known that I, CONSTANT LE DUC, a citizen of the United States of America, residing at Chatsworth, in the county of Burlington and State of New Jersey, have invented new and useful Improvements in Well-Driving Apparatus, of which the following is a specification.

This invention relates to improvements in well driving apparatus and has particular application to an apparatus of this type wherein the driven pipes are forced into the ground under the action of a driver.

In carrying out the present invention, it is my purpose to provide an apparatus of the class described wherein the driver will be at all times centered with respect to the pipe being driven, thereby obviating deflecting of the pipes from true position and eliminating the breaking or mutilation of the pipes incident to the same being deflected or deviating from the true path of movement.

It is also my purpose to provide a well driving apparatus which will embrace the desired features of simplicity, efficiency and durability coupled with cheapness of cost in manufacture and installation and which when operated will drive the pipes in a straight line thereby eliminating wobbling and deflecting of the pipes from their true course, incident to the driver impacting the impact head or cap on the topmost pipe at an angle to the vertical.

With the above and other objects in view, the invention consists in the construction, combination and arrangement of parts hereinafter set forth in and falling within the scope of the claims.

In the accompanying drawing; Figure 1 is a front elevation of a well driving apparatus embracing my improvements. Fig. 2 is a transverse sectional view through the driver or impact hammer. Fig. 3 is a cross sectional view through one of the driven pipes and the guide.

Referring now to the accompanying drawing in detail, the numeral 1 designates one of the driven pipes having connected to its lower end by means of a coupling 2, the usual point 3. Threaded onto the upper or free end of the pipe 1 is an impact head or cap 4 provided with a centrally arranged guide aperture 5 arranged approximately centrally of the pipe 1.

The impact hammer or driver is indicated

by the reference numeral 6 and is preferably in the form of a rectangular block and is constructed of any suitable material such, for instance, as iron, steel, reinforced concrete or the like. This driver is adapted to be dropped from a suitable height onto the impact head 4 on the free end of the pipe or tube 1 so as to force the latter into the ground and in order to avoid excessive wear on the impact head and the driving surface of the driver or impact hammer, the driving face of the impact hammer at opposite sides is extended downwardly to provide grooved guide ways 7, 7, the latter slidably receiving a suitable wear plate 8 constructed of leather, wood or other desired material. This wear plate prevents unnecessary mutilation of the parts incident to the impact and when such plate becomes worn out or mutilated the same may be replaced by the second plate.

In accordance with my present invention, I utilize a guide which is preferably attached to the driver or impact head and movable therewith and which is associated with the driven pipe in such manner as to enable the driver to strike the impact head on the pipe in a true vertical line thereby driving the pipes in a true path of movement and eliminating deflection or deviating of the pipes from the vertical. This guide, in the present instance, is in the form of an iron or steel rod 9 passed through the guide aperture 5 in the impact head 4 on the pipe 1 and rigidly secured to the head 6 as by being passed through the same. The end of the guide beyond the upper surface of the driver terminates in an eye 10. Projecting through the driver transversely of the guide and beyond the opposite sides of such driver, is a hand rod 11.

The driver may be worked by hand or power as desired. In the event of said driver being manipulated by hand, the rod 11 is grasped by an operator at each side of the impact hammer and elevated with the effect to elevate or lift the impact hammer or driver from the impact head on the pipe, the rod 11 being released so that the driver may drop upon the impact head to force the pipes into the ground. On the contrary, should it be desired to manipulate or operate the impact head by power, a suitable form of tripod 12 is positioned upon the ground above the pipe to be driven and carries a pulley wheel or grooved sheave 13

over which is trained a cable, chain, rope or the like 14 having one end connected to the eye 10 as at 15, while the opposite end is trained about a suitable hoist drum, (not shown).

From the foregoing description taken in connection with the accompanying drawing, the construction, mode of operation and manner of employing my invention will be readily apparent and it will be seen that I have provided an exceedingly simple, yet efficient, durable and effective form of well driving apparatus and one wherein the driver is at all times maintained in a true position with respect to the course of the pipes.

While I have herein shown and described one preferred form of my invention by way of illustration, it is to be understood that I do not limit myself to the exact details of construction herein described and delineated, as modification and variation may be made within the scope of the claims and without departing from the spirit of the invention.

I claim:

1. In a well driving apparatus, the combination with a driven pipe, of a driver for said pipe, grooved guide ways formed at the

lower end of said driver, an impact head on the driven pipe and provided with a central guide aperture, a wear plate disposed within said grooved guide ways and adapted to abut the impact head upon the driven pipe in the operative movement of the driver, and a guide connected to the driver and movable therewith through the guide aperture in the impact head on the driven pipe to center said driver in the driving of the pipe.

2. In a well driving apparatus, the combination with a driven pipe, of a driver for said pipe, grooved guide ways formed at the lower end of said driver, an impact head on said pipe, a wear plate disposed within said guide ways and adapted to abut the impact head upon the driven pipe in the operative movement of the driver, and a guide connected to the driver and movable therewith to center said driver in the driving of the pipe.

In testimony whereof I affix my signature in presence of two witnesses.

CONSTANT LE DUC.

Witnesses:

MARIE LE DUC,
ALBERT B. LE DUC.