

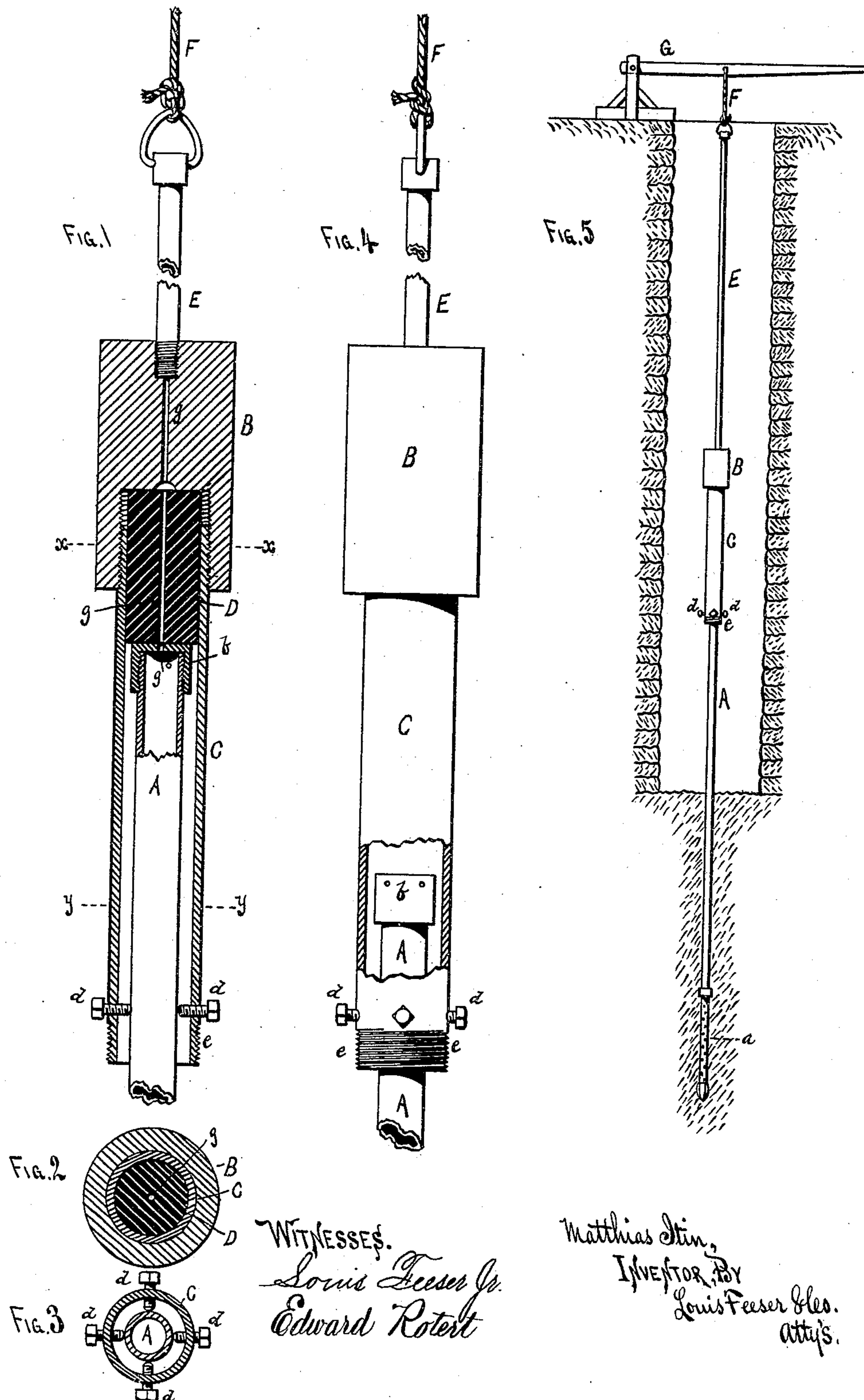
(No Model.)

M. ITIN.

# IMPLEMENT FOR DRIVING DRIVE WELL TUBES.

No. 252,878.

Patented Jan. 31, 1882.





# UNITED STATES PATENT OFFICE.

MATTHIAS ITIN, OF ST. PAUL, MINNESOTA.

## IMPLEMENT FOR DRIVING DRIVE-WELL TUBES.

SPECIFICATION forming part of Letters Patent No. 252,878, dated January 31, 1882.

Application filed October 3, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, MATTHIAS ITIN, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Implements for Driving Drive-Well Tubes, &c., of which the following is a specification.

This invention relates to implements used in sinking that class of wells known as "driven wells;" and it consists in a hammer or head adapted to be alternately raised and allowed to fall or be forced down upon the drive-tube, and in providing said hammer with a wooden or other suitable block or cushion to bear the brunt of the blow, and a guiding-tube to insure the hammer striking in the right position, as hereinafter shown.

The invention further consists in providing said hammer, wooden cushion, and the cap of the drive-tube with perforations, whereby water may be conveyed to the drive-tube point without removing the hammer, and at the same time a vent formed for the escape of the air, as hereinafter set forth. I attain these objects by the use of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a sectional elevation of the hammer, guide-tube, and a portion of the upper end of the drive-tube, with the hammer down in contact with the drive-tube cap. Fig. 2 is a cross-section on the line *x x*, and Fig. 3 is a cross-section on the line *y y*, of Fig. 1. Fig. 4 is an outside elevation, with a portion broken out, showing the position of the hammer, &c., when partially raised preparatory to striking the blow. Fig. 5 is a sectional view, reduced, of an ordinary well, showing the manner of using my invention when sinking in the bottom thereof.

In forming what is known as "driven wells" a tube with a pointed and perforated end is driven into the ground until a water-bearing stratum is reached, and this driving is usually done with large wooden or metal mauls or sledges; but it frequently occurs that wells are to be driven in the bottoms of ordinary wells, as shown in Fig. 5, under buildings, &c., and in other inaccessible places, where the ordinary mauls could not be used; and to enable the tube to be forced into the earth in almost every

conceivable position or location is the object of my invention.

A is the drive-well tube, having the ordinary pointed and perforated lower end, *a*, (see Fig. 5,) and a cap, *b*, upon the upper end.

B is a large metal block or hammer, having a short tube, C, large enough to pass over the cap *b* of the tube A, screwed into the bottom, and a wooden block, D, inserted into the upper end of the tube C, and with its upper end in contact with the interior of the hammer B, as shown in Fig. 1. The lower end of the tube C is provided with set-screws *d*, which are set up toward but not tightly against the tube C, to serve as guides to keep the tube C in the same relative position to the tube A, and to prevent its being lifted up over the cap *b*.

In the upper part of the hammer B a small tube, E, is screwed, which may be of any desired length, and to which the ropes or chains F, or the handles for lifting the hammer, are attached. By this arrangement it will be seen that if the hammer B and tube C are raised upward and then allowed to fall, or are forced downward, a blow will be struck upon the cap *b* and drive the tube A a short distance into the ground.

The tube C not only serves as a guide to cause the hammer B D to strike the cap *b* in the right position, but by its weight adds materially to the force of the blow, while the set-screws *d* not only serve to keep the tube A in the center of the tube C, but by projecting beneath the cap *b* prevent the hammer being lifted high enough to remove it from the tube A. The wooden block D prevents the caps or couplings from becoming battered or broken, the effect thus being the same as when wooden mauls are used. The tube C also acts as a guide to keep the tube A in an upright position while being driven, thus dispensing with the necessity for any other guide. The tube C is shown with a screw-thread, *e*, upon its lower end, so that an additional length may be put upon it to enable a heavier blow to be struck.

The tube E may be replaced by a ring-bolt, to which the lifting rope or chain is attached, or the lifting mechanism G or other means for raising the hammer may be attached directly to the hammer.

It is frequently necessary in sinking wells in

clay soil, &c., that water be poured into the drive tube to run out through the point *a* and moisten the earth; and to enable me to do this without removing the driving mechanism I form perforations *g* through the hammer B, cushion D, and cap *b*, so that water poured into the tube E will find its way into the tube A; or if the tube E is not used the water will be poured directly through the perforations in the hammer. The perforations *g* also serve as vents for the air to escape from the tubes.

I claim many advantages for the use of a tube, E, instead of a rope or chain when the upper end of the tube A is some distance below the operators, as in Fig. 5: first, because it enables me to utilize it as a vehicle to convey the water to the tube A, as before described; second, it adds materially to the weight of the hammer; and, third, it enables me to utilize it as a stiff-rod to force the hammer down upon the tube A and add to the force of the blow.

In Fig. 5 one common method of sinking drive-wells is shown, and by the use of my im-

plement no necessity remains for the operator to remain in the well after "setting" the point *a*.

The hammer B may be of any desired form or size, and a segmental collar may be substituted for the set-screws *d*, if desired.

What I claim as new is—

1. An implement for driving drive-well tubes, &c., consisting of a hammer, B, guide tube C, and cushion D, substantially as set forth.

2. The combination and arrangement of the head B, cushion D, tube C, and set-screws *d*, and tube A, substantially as set forth.

3. The combination and arrangement of the head B, cushion D, and cap *b*, all provided with the perforations *g* and the tubes C, A, and E, substantially as set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

MATTHIAS ITIN.

Witnesses:

C. N. WOODWARD,  
LOUIS FEESER, Sr.