Oct. 4, 1927. 1,644,110

H. T. COVER ET AL

APPARATUS FOR BREAKING UP CONCRETE ROAD FOUNDATIONS AND LIKE STRUCTURES

Filed Aug. 18, 1925

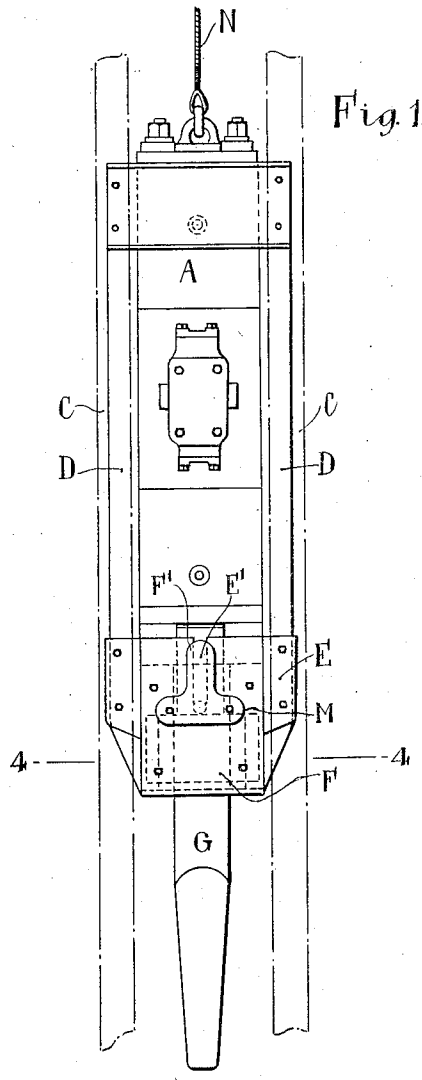


Fig. 1.

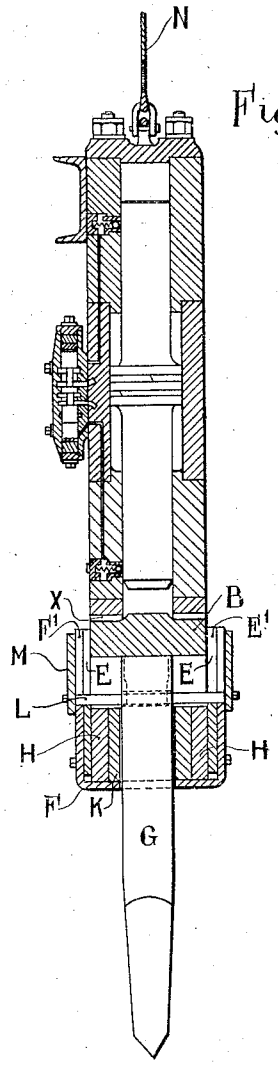


Fig. 2.

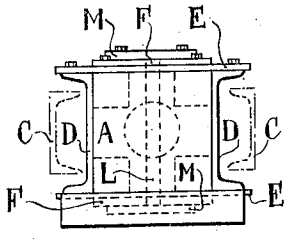
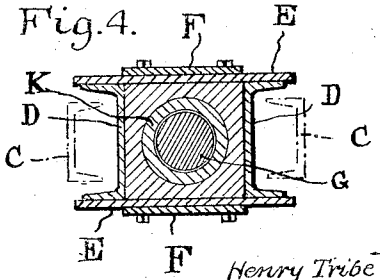


Fig. 3.

Fig. 4.



Inventors
Henry Tribe Cover,
Edward Bond,
By Toulmin & Toulmin,
Attorneys

Patented Oct. 4, 1927. 1,644,110

UNITED STATES PATENT OFFICE.

HENRY TRIBE COVER AND EDWARD BOND, OF LONDON, ENGLAND.

APPARATUS FOR BREAKING UP CONCRETE-ROAD FOUNDATIONS AND LIKE STRUCTURES.

Application filed August 18, 1925, Serial No. 51,052, and in Great Britain October 10, 1924.

Our invention relates to apparatus for breaking up road or other foundations, or similar structures, or deepening river beds, excavating rock, and work of similar character, and has for its object to provide means whereby an ordinary pile-driving hammer can be used for the said purposes, or for any of them.

Our invention consists in the construction, arrangement, and combination of parts forming an apparatus for the purpose above referred to as will hereinafter be described in detail.

In order that the nature of the invention may be clearly understood, apparatus embodying the same will now be described with the aid of the accompanying drawings, in which,

Fig. 1 is a front view of the apparatus;
Fig. 2 a side elevation partly in section;
Fig. 3 a plan view;
Fig. 4 a horizontal section on the line 4—4 Fig. 1.

Referring to the drawings, A is a pile driving hammer and B is its anvil block. The hammer provided with a reciprocating ram may be operated by steam, compressed air, hydraulic, electric or other power and is free to move up and down between the guides or leaders C being raised or lowered by the rope N or any other suitable means.

The apparatus embodying our invention is attached to the hammer by the supports or attachments D which extend to any convenient distance beyond the base of the hammer A. To the supports D are secured the plates E which are of suitable depth and shaped so as to guide the hammer and attached parts on the guides or leaders C. In the plates E are formed vertical notches E′ of suitable size and depth to receive the pin L hereinafter described. To the plates E is attached the U-shaped plate F which holds in position and supports the block H and bush K. A hole is formed in the plate F through which the wedge-shaped disintegrating member G may pass freely. The plate F also has notches F′ formed in it similar to and registering with those in plates E.

The block H is formed so as to fit in between the supports D and the plates E; the said block is of any convenient depth and has a hole in it of suitable size for receiving the bush K.

The bush K is bored to a suitable size to form a guide for the disintegrating member G and is fitted in the block H.

The disintegrating member G may be of any convenient length, size and shape. In the form shown this member is given a wedge shape and has a hole bored in it of suitable size and position to receive the pin L which secures the said member G to the plates E and F. For this purpose the pin L is given a convenient size and is arranged to project through the notches in the plates E and F and is free to move up and down in the said notches with the movements of the member G which the said pin secures to the plates E and F.

The plates M are of an inverted T shape and are fastened to the plate F so as to cover the notches in the plates E and F, thereby preventing the pin L from falling out. The plate M is removed and replaced as required when it is desired to extract the pin L to release the member G.

The apparatus above described is operated as follows. The hammer A is lowered by means of the rope N or other suitable means until the point of the disintegrating member G rests on the object to be broken up; the lowering of the hammer A causes the member G to lift the anvil block B to the extent of the clearance marked X on Fig. 2 of the drawings, so as to bring it into contact with the piston or ram of the hammer when it is in its lowest position. The rope N is then released and the hammer A is operated in the usual manner, the member G being driven against or into the object to be broken up. The member G is then withdrawn by hoisting the hammer A by means of the rope N, or other device, the apparatus is moved to the next point to be broken up, and the operation is repeated indefinitely until the whole of the foundation or other surface acted upon is completely broken up.

What we claim and desire to secure by Letters Patent is:—

1. In an automatic double acting hammer having a reciprocating ram, an anvil having limited movement and means for supporting the anvil so that it may be moved into contact with the ram, plates secured exteriorly of the hammer, a tool, and means for slidably connecting the tool to the said plates.

2. In an automatic double acting hammer having a reciprocating ram, an anvil hav-

ing limited movement and means for supporting the anvil so that it may be moved into contact with the ram, plates secured exteriorly of the hammer, a tool, and a pin passing through a hole in the tool and projecting into slots formed in the said plates.

3. An automatic double acting hammer having a reciprocating ram, an anvil having limited movement and means for supporting the anvil so that it may be moved into contact with the ram, in combination with a tool and means for supporting the tool, the said means comprising side plates, a U-shaped plate associated with the side plates, a pin passing through a hole in the tool and projecting into slots in the said plates, plates covering the slotted portions of the said plates to keep the pin in position, a block provided with a hole, and a bush fitted into said hole adapted to guide the tool, which passes through a hole arranged in the base of the U-shaped plate.

In testimony whereof we affix our signatures.

HENRY TRIBE COVER.
EDWARD BOND.