T. HILL.

PULLING ATTACHMENT FOR STEAM HAMMERS.

APPLICATION FILED MAY 17, 1913.

1,091,336. Patented Mar. 24, 1914.

Fig. 1.

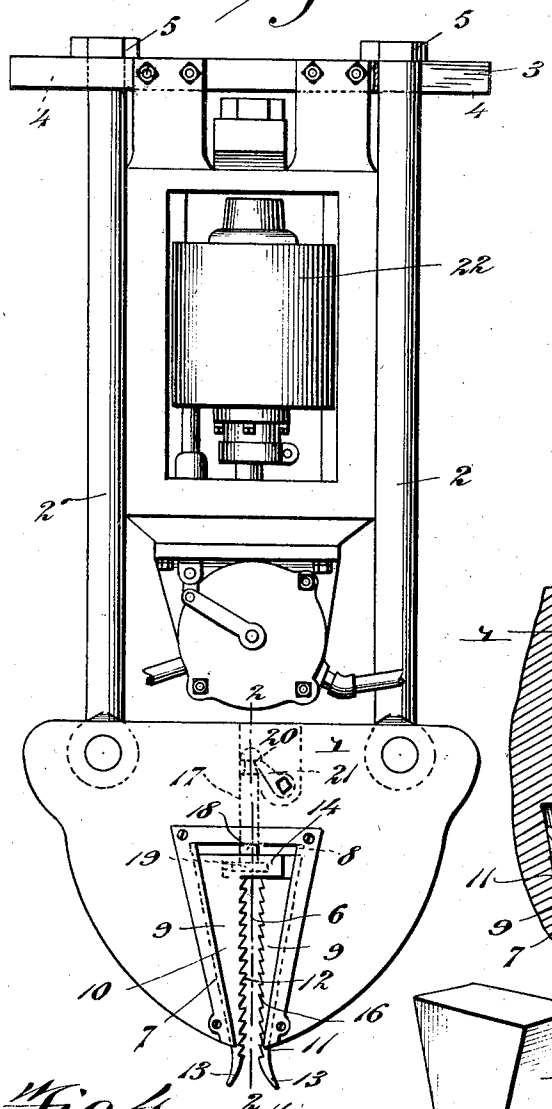


Fig. 2.

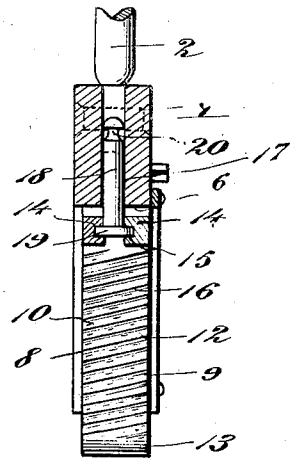


Fig. 3.

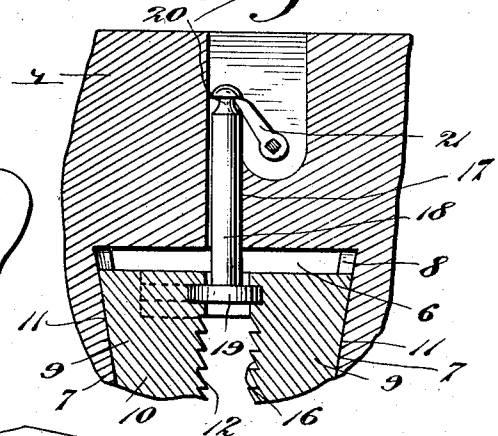


Fig. 4.

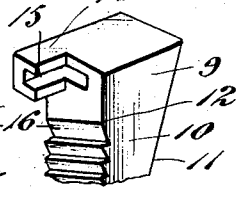
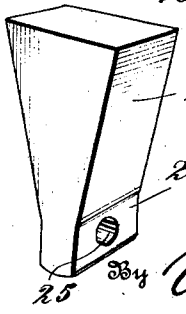


Fig. 5.



Witnesses

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PULLING ATTACHMENT FOR STEAM-HAMMERS.

1,091,336. Specification of Letters Patent. Patented Mar. 24, 1914.

Application filed May 17, 1913. Serial No. 768,278.

To all whom it may concern:

Be it known that I, TRUMAN HILL, a citizen of the United States, residing at Perry, in the county of Pike and State of Illinois, have invented new and useful Improvements in Pulling Attachments for Steam-Hammers, of which the following is a specification.

The invention relates generally to auxiliary attachments for power hammers and particularly to an attachment which may be readily connected to or detached from the hammer structure and which is particularly designed for use in pulling piles or the like.

The main object of the present invention is the provision of a pile pulling attachment for power hammers, the construction providing for the automatic grip of the piling so as to insure the full power of the hammer being exerted upon the pile.

The invention in the preferred details of construction will be described in the following specification, reference being had particularly to the accompanying drawings, in which:—

Figure 1 is a view in elevation illustrating the improved attachment in coöperative relation to a steam hammer. Fig. 2 is a section on line 2—2 of Fig. 1. Fig. 3, a section on line 3—3 of Fig. 1. Fig. 4 is a broken perspective of one of the gripping members. Fig. 5 is a perspective view of a lifting member designed for use as a substitute for the gripping jaws.

Referring particularly to the accompanying drawing the improved attachment comprises a frame including a lower section 1, uprights 2 pivotally connected to said section and a cross bar 3 formed in its respective ends with a longitudinally extending slot 4 to permit the passage thereinto of the uprights 2, said uprights being terminally formed with heads 5 to engage the upper surface of the cross bar, so that the blow delivered upon said cross bar by the hammer or as will later appear may be communicated to the lower section 1.

In the lower section 1 which is preferably, although not necessarily of the shape shown, there is formed an opening 6, the side walls 7 of which are on downwardly convergent lines. The opening 6 extends through the bottom of the lower section and the side walls 7 of said opening are formed with longitudinally extending grooves or channels 8.

Gripping members 9 are arranged in the opening 6 said members including arms 10 having their relatively outer sides 11 of such angular relation to their inner sides 12 that when said outer sides are seated against the outer wall of the depression 8, the inner sides will be in approximately vertical planes. The extreme lower end of the arms are curved in relatively outward directions as at 13 and normally project below the lower end of the opening 6, thus forming an entrance opening for the pile or other articles to be pulled. On the extreme upper end of the arm is formed a lateral projection 14 having one side in co-incidence with the similar edge of the arm, the projection being approximately half the width or thickness of the arm. A longitudinally extending groove 15 is formed in the relatively inner face of the projection, and the inner edge or surface 12 of the arm below the projection is formed with a series of teeth or other gripping points 16.

As will be plain from the drawings, two gripping members are provided within the opening 6, one coöperating with and longitudinally operative in each channel 8. The projections 14 of the respective arms are reversely disposed, so that they extend from opposite side edges of the respective arms when said arms are in place. By this means the projections rest side by side with their channels 15 opposite each other and in horizontal alinement.

The section 1 is formed with a vertically extending opening 17 in which is slidably mounted a pin 18, hereinafter termed the locking pin, said pin being provided with a transversely disposed head 19 designed to seat in the alined channels 15 of the respective gripping members, so that the pin operates to insure uniform and similar movement of said members. The pin 18 adjacent its upper end is formed with an annular channel or recess 20, and a gravity pawl or dog 21 is mounted in an adjacent recess with its terminal end arranged to coöperate with the channel in the pin.

The parts are so arranged that, with the dog in engagement with the pin, the latter will, through the engagement of its head

19 with the channels in the gripping members, serve to hold said members at their extreme upper limit of movement, that is at the widest part of the opening 6.

The power hammer, as the steam hammer 22, is supported within the frame by any appropriate means, as by a cable or the like by which said hammer may be arranged so that the driving element thereof may strike the cross bar 3, which will be hereinafter termed the impact bar. Ordinarily the hammer will have to be inverted from its usual position so that the striking element may exert its power upwardly, and I contemplate any means in this connection whereby a series of successive blows in an upward direction may be given the impact bar.

In use for pulling piles for example, the dog 21 is moved to inoperative position to release the gripping members after the latter had been positioned over and on opposite sides of the pile. The blows delivered to the impact bar by the hammer or other power device cause a relative movement of the frame and the gripping members, and as the downward movement of the latter causes their gripping faces to approach each other, it will be obvious that the pile is effectively gripped between said members so that the blows delivered to the impact bar will gradually withdraw the pile.

At 23 I have shown a member designed to fit in the opening 6, conforming in shape and size thereto and formed in a portion 24 arranged to project below the lower end of the opening 6 with an opening 25, whereby to provide for the use of a chain or rope connection when pulling any article with which the gripping jaws are not adapted to coöperate.

What is claimed as new, is:—

1. A pulling attachment for power hammers including a frame comprising a lower section, an impact bar to receive the hammer blows, and connections between the said section and impact bar, and automatically operative gripping members carried by the lower section, and means for locking said gripping members against automatic gripping coöperation.

2. A pulling attachment for power hammers including an impact bar to receive the hammer blows, a frame section supported thereby, said section being formed with an opening having downwardly convergent channeled side walls, gripping members cooperating with the channeled side walls, and means for locking said gripping members at their upper limited movement.

3. A pulling attachment for power hammers including an impact bar to receive the hammer blows, a frame section supported thereby, said section being formed with an opening having downwardly convergent channeled side walls, gripping members cooperating with the channeled side walls, said gripping members having relatively offset lateral projections formed with channels, a pin slidably mounted in the section and having a head to engage the channels of said gripping members, and means for locking the pin in elevated position.

4. A pulling attachment for power hammers including an impact bar to receive the hammer blows, a frame section removably supported thereby, said section being formed with an opening having downwardly convergent channeled side walls, gripping members coöperating with the channeled side walls, and means for locking said gripping members at their upper limited movement.

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

TRUMAN HILL.

Witnesses:
W. A. Reineke,
C. L. Hoerlein.