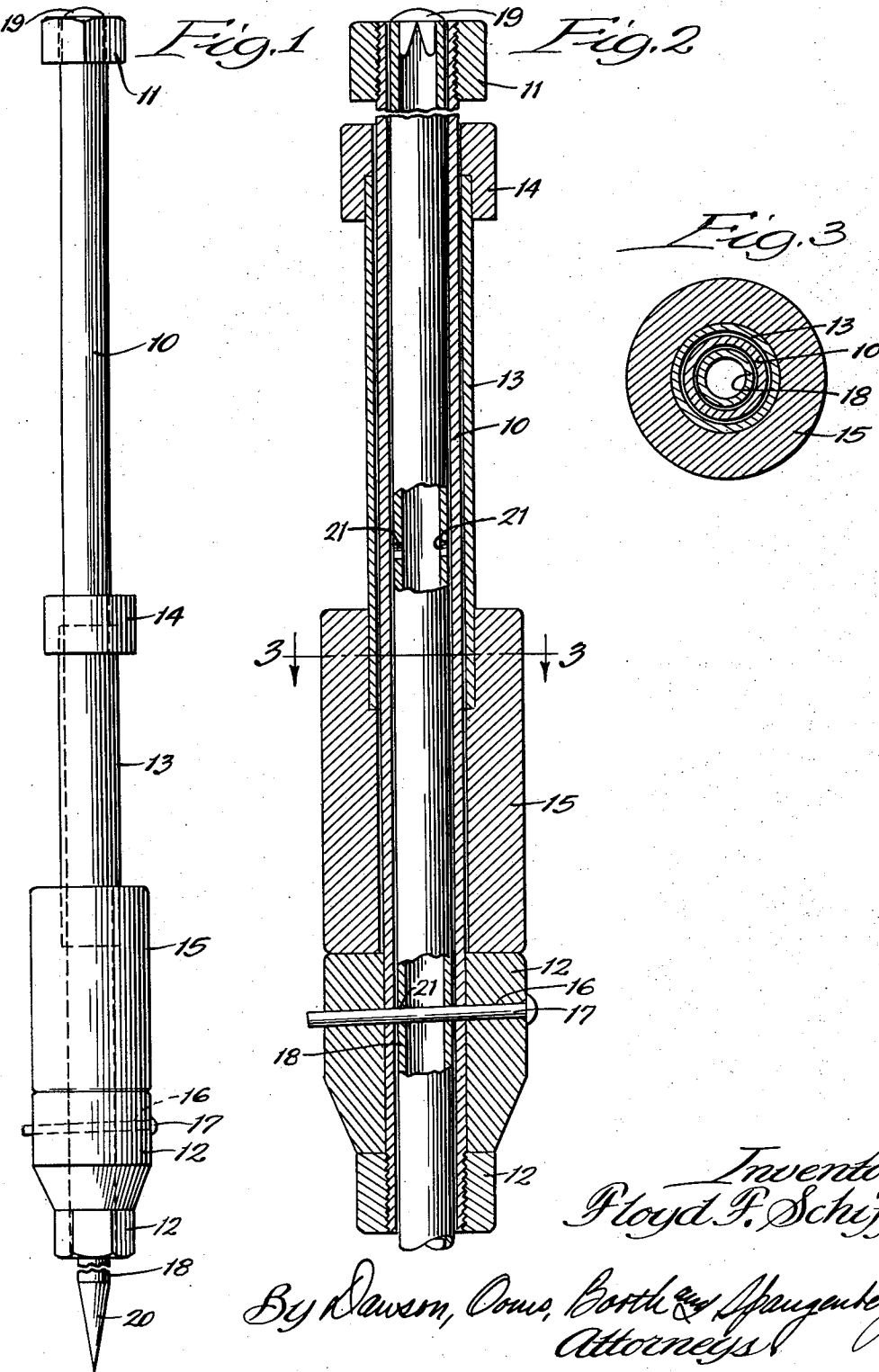


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POST DRIVER AND EJECTOR

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## UNITED STATES PATENT OFFICE

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## POST DRIVER AND EJECTOR

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This invention relates to a post driver and ejector, and the tool is particularly effective in the removal of posts from the ground, as well as in the driving of posts into the ground.

It is desired to drive posts into the ground for various purposes, such as, for example, providing fence posts, providing anchors, and for a variety of other purposes. Often the posts are rather tall and it is difficult to drive the posts without working from an elevated position. Further, in the withdrawal of the posts, considerable difficulty is experienced because of the height of the posts.

An object of the present invention is to provide apparatus which may be effectively employed by an operator standing upon the ground, and the operation is carried on effectively irrespective of the height of the post. A further object is to provide a post driving or extracting device, in which a driving member or hammer may be reciprocated in either direction for the driving of a post or drill into the ground, or for the removal of the post from the ground. Yet another object is to provide apparatus adapted to receive posts of varying lengths and for effectively driving the same into the soil. Other specific objects and advantages will appear as the specification proceeds.

The invention is illustrated, in a preferred embodiment, by the accompanying drawing, in which:

Figure 1 is a broken side view in elevation of apparatus embodying my invention; Fig. 2, an enlarged broken vertical sectional view; and Fig. 3, a transverse sectional view, the section being taken as indicated at line 3 of Fig. 2.

In the illustration given, 10 designates a shank or track member threaded at its top against an anvil 11 and threaded at its bottom into the lower neck portion of the lower anvil 12. The track member 10 and each of the anvil members are hollow. In the illustration given, they are cylindrical in shape, but it will be understood that they may be of any cross-sectional shape.

Mounted upon the shank or track 10 is a sleeve member 13 secured at its upper end by welding or other suitable means to an upper hammer member 14 and secured at its lower end to the hammer member 15.

The lower anvil 12 is provided with a transversely-extending opening 16 adapted to receive a drive pin 17. The track member 10 is also apertured to receive the drive pin 17.

The post 18, which is to be driven by the mechanism described, may be of any suitable

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type or structure. In the illustration given, the post 18 is tubular and is provided at its top with a friction cap 19 and at its bottom with a point 20. Intermediate its length, the post 18 may be provided with aligned transverse openings 21 adapted to receive the drive pin 17. I prefer to have the openings in the post 18 and in the track 10 and in the lower anvil 12 slightly inclined downwardly so that the drive pin 17 will remain freely in position during the raising or lowering of the post.

In the illustration given, the post 18 extends slightly above the anvil 11, and it will be understood that it may extend any desired distance above the anvil, or if the post should be relatively short, the top of the post may be well within the track member 10 when the point of the post is started into the ground.

*Operation*

In the operation of the apparatus, a post 18, having one or more openings 21 extending transversely therethrough, is inserted within the track member 10, and the drive pin 17 is inserted through a pair of openings 21 in the post 18, as shown more clearly in Fig. 2. The sleeve 13 may then be grasped and raised to drop the hammer 15 against the lower anvil 12. Reciprocation of the sleeve 13 in this manner drives the post downwardly into the ground. After driving the post some distance into the ground, the pin 17 may be withdrawn and then inserted through another upper pair of spaced openings 21, as illustrated in Fig. 2, so that the post may again be driven downwardly without elevating the driving apparatus. It will be understood that any desired number of openings 21 may be formed transversely through the post, and by this means, the post can be driven readily into the ground in successive stages and just as readily withdrawn from the ground.

In the operation for removing the post from the ground, the sleeve 13 is grasped and raised sharply to bring the upper hammer 14 against the upper anvil 11. Repeated upward strokes of the sleeve thus raise the post to a desired distance. Thereupon, the drive pin 17 may be removed and caused to engage aligned openings 21 in a lower portion of the post 18, and the upward movement of the post may be thus resumed.

From the foregoing, it will be observed that the operator may at all times stand upon the ground and be in a comfortable and effective position for raising the post out of the ground or for driving it into the ground, the changes in

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the relative position of the lower anvil and the post being made at spaced intervals by the removal of the pin and the insertion thereof through another series of openings in the post. By having the transverse openings 21 through the post in vertical alignment with each other, it is easy to register the pin 17 with a second series of openings by merely raising or lowering the lower anvil 12 to the desired position and until the drive pin 17 can be pressed into the next series of openings.

It will be understood that various connections for imparting the driving force delivered to the anvils to the post may be employed. If desired, the upper anvil 11 may be closed at the top so that the bottom of the anvil strikes the top of the post, and this structure is useful for short posts. I prefer, however, to employ the structure illustrated which permits the use of posts of any length, while at the same time permitting repeated adjustments between the lower anvil and the post.

While, in the foregoing specification, I have set forth a specific example in great detail for the purpose of illustrating one embodiment of the invention, it will be understood that such details of structure may be varied widely by those skilled in the art without departing from the spirit of my invention.

I claim:

1. In a post driver and ejector, a hollow track member, a pair of spaced anvils fixed to the outer surface of said track member, a sleeve receiving said track member, a pair of hammers carried by said sleeve at opposite ends thereof, a post extending through said hollow track member, and cooperating means on said track member and post for releasably anchoring said post

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to said track member in different relative positions.

2. In a post driver and ejector, a hollow track member adapted to receive throughout its length a post which is to be driven into the earth, a pair of spaced anvils fixed to the outer surface of said track member, a sleeve receiving said track member, a pair of hammers carried by said sleeve at opposite ends thereof, and means carried by said track member and engageable with said post for releasably anchoring said post to said track member at selected relative positions between said post and track member whereby said post may be driven into the earth while maintaining the track member at a generally fixed horizontal position relative to the earth.

3. In a post driver and ejector, a hollow track member adapted to receive throughout its length a post which is to be driven into the earth, a pair of spaced anvils fixed to the outer surface of said track member, a sleeve receiving said track member, a pair of hammers carried by said sleeve at spaced distances thereon, and means carried by said track member and engageable with said post at a plurality of longitudinal points thereof for releasably anchoring said post to said track member.

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