

No. 613,123.

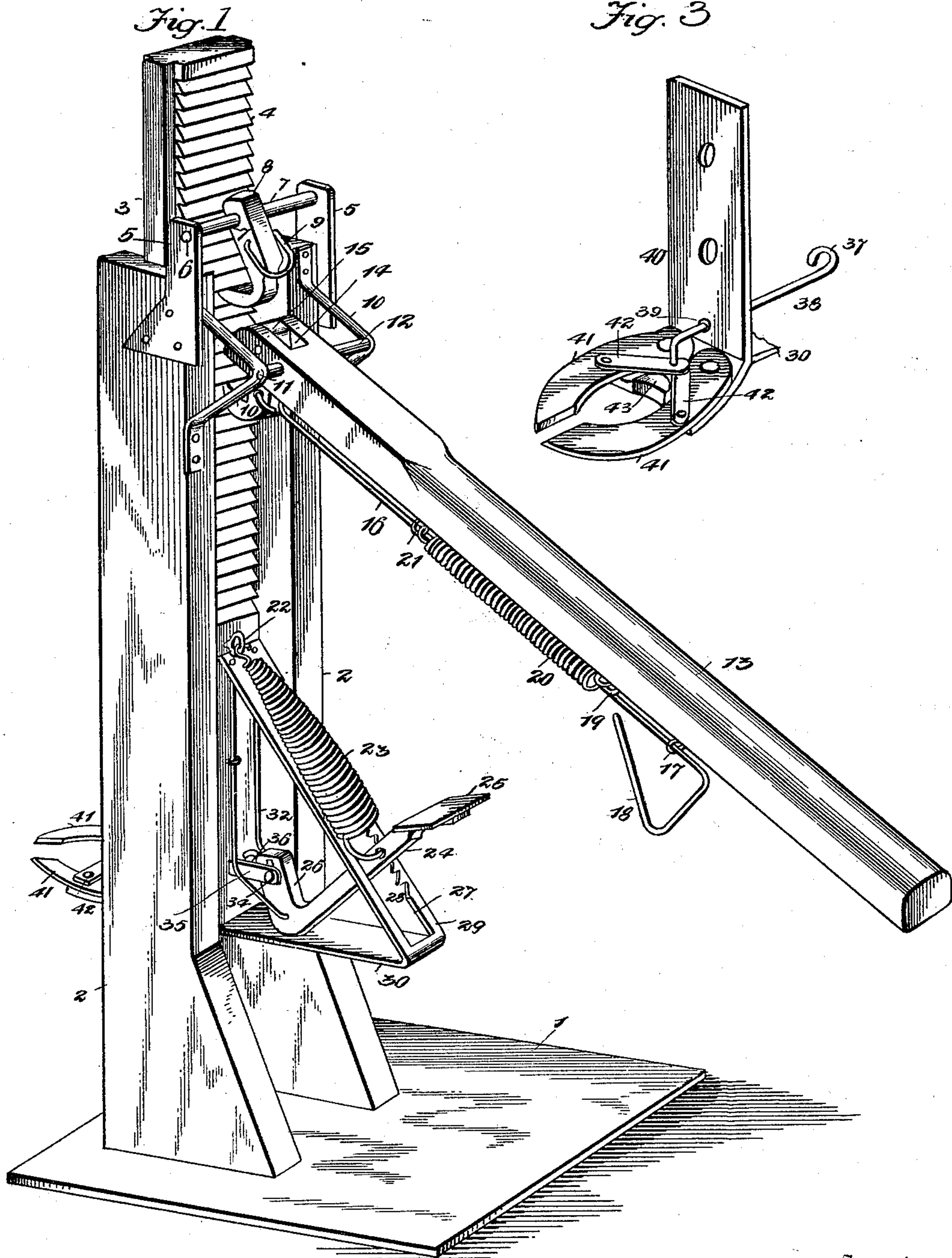
Patented Oct. 25, 1898.

E. L. DALE.  
SPIKE PULLER.

(Application filed May 20, 1897.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses

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Fig. 2

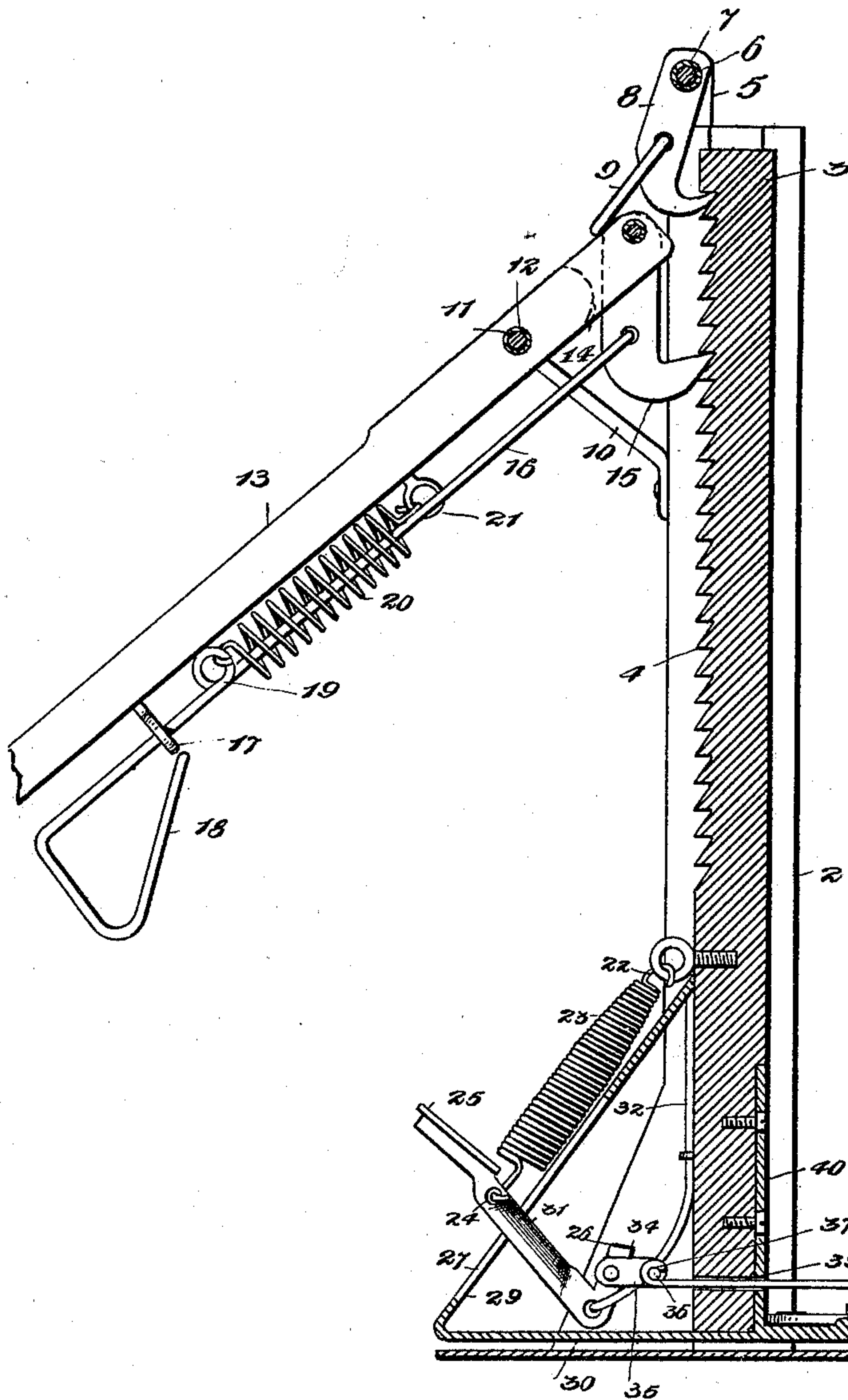
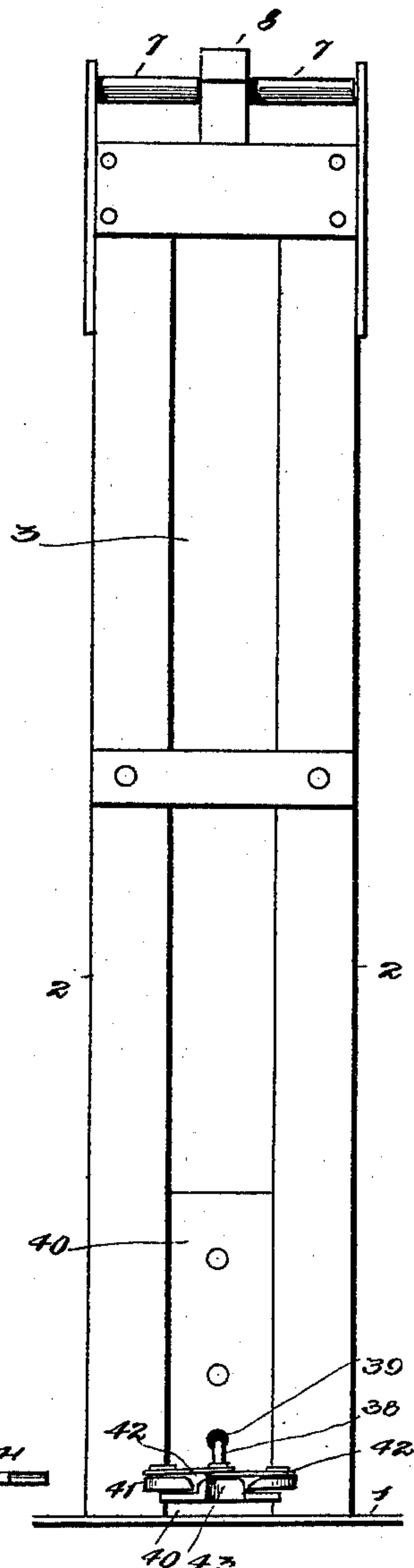


Fig. 4



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# UNITED STATES PATENT OFFICE.

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## SPIKE-PULLER.

SPECIFICATION forming part of Letters Patent No. 613,123, dated October 25, 1898.

Application filed May 20, 1897. Serial No. 637,475. (No model.)

*To all whom it may concern:*

Be it known that I, ELMER L. DALE, of Waterford, in the county of Racine and State of Wisconsin, have invented certain new and useful Improvements in Spike-Pullers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

10 This invention relates to spike-pullers; and it consists, essentially, of a standard having a toothed slide adjustably mounted therein and carrying a spike-engaging device at its lower end.

15 The invention further consists of the details of construction and arrangement of the several parts, which will more fully herein-after be described and claimed.

The object of the present invention is to provide a spike-puller having positively-acting vertically-movable pulling devices of a strong and durable nature which are adapted to be conveniently applied to the head of a spike and readily and easily operated to with-

20 draw the same from its seat.

In the accompanying drawings, Figure 1 is a perspective view of a spike-puller embodying the invention and looking toward the rear thereof. Fig. 2 is a section on the line  $x x$ , Fig. 1. Fig. 3 is a detail perspective view of the spike-grasping mechanism. Fig. 4 is a front elevation of the device.

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Referring to the drawings, wherein similar numerals of reference are employed to indicate corresponding parts in the several views, the numeral 1 designates a base of suitable construction, having rising therefrom a standard composed of two grooved guides 2, suitably spaced apart and embracing a sliding support 3, which is adjustably mounted therein and has teeth 4 on the inner side thereof. Piv-

40 otally mounted in brackets 5 and secured to the upper inner portion of the said guides is a rod 6, having limiting-sleeves 7 mounted thereon, which retain a gravitating dog 8 at the center thereof, which dog is provided with an operating ring or loop 9, adapted to be grasped by the hand to disengage the dog from the rack. Below the said brackets 5

50 arched brackets 10 are also secured to the inner sides of the guides, at the upper portion thereof, and in the center of the arches there-

of is mounted a rod 11, on which are limiting-sleeves 12, retaining a lever 13 in movable position on the center of the said rod 11. 55 The inner end of the said lever is slotted, as at 14, and therein is movably mounted a dog 15, having an operating-rod 16 secured thereto, which extends through an eye 17 on the outer under portion of the said lever and is bent into a loop or eye 18, adapted to be conveniently grasped by the hand. Said operating-rod 16 is also formed with an eye 19 in the body thereof, to which the rear end of a coiled spring 20 is attached, the opposite end of said spring being secured to an eye 21, situated on the under side of the lever in advance of the said spring. Through the medium of the spring the rod 16 and the dog 15 are normally impelled outward to cause an engagement of 60 the nose of the dog with the teeth 4 of the slide 3. On the said slide, below the line of teeth thereof, an eye 22 is mounted, to which the upper end of a coiled spring 23 is secured, the lower end of said spring being attached to an operating-lever 24, having a foot-pres-

75 sure plate 25 at the inner free end thereof and an angular outer end 26. The said lever 24 is movable through a slot 27, having serrations or teeth 28 in one side thereof and formed in a locking-plate 29, depending at an angle of inclination toward the rear and having the lower portion thereof resting upon and secured to a rearwardly-extending arm 30, attached to the bottom of the slide 3. The 80 operating-lever 24 has one side thereof beveled to form an engaging edge 31, which takes into the teeth 28 to hold the said lever in its adjusted position against the tension of the spring 23. The lever 24 is pivotally held by a pendent hanger 32, consisting of an angularly-bent loop which passes through the elbow formed between the lever 24 and its outer angularly-bent end 26. The said angularly-bent end 26 is formed with two or 85 more apertures to movably receive a bolt and nut 34 and adjustably secure a pair of embracing-arms 35, carrying a pivot 36 at their outer ends extending through the rear looped end 37 of a pull-rod 38, passing through an opening 39 adjacent to the bottom of the slide 3. The arm 30 is secured to an angular support 40, upon which is pivotally mounted a pair of jaws 41 having links 42 extending in-

90 95 100



wardly therefrom, and to which the outer end of the said pull-rod 38 is attached, to thereby draw the said jaws 41 closed to embrace a spike-head, the outer intumed ends of said jaws being reduced and coacting with a curved rest or seat 43, formed in the horizontal member of the angular support 40. At a suitable point on the outer side of the guides a stop-plate 44 is mounted to limit the upward movement of the jaws and angular support therefor.

In operation the dog 15 is released from the teeth 4 of the slide 3 and also the dog 8 and the said slide moved downward a suitable distance to permit the jaws 41 to take under the head of the spike to be drawn or pulled. When the said jaws have been properly seated under the head of the spike, the lever 24 is operated through its foot-pressure plate to close the jaws through the medium of the pull-rod 38 and locked by engaging the teeth 28, formed in one side of the slot 27. The dog 15 is then permitted to again engage the teeth 4 and reciprocate vertically, raising the slide 3, and the latter is held in its adjustment by the dog 8 while the dog 15 is taking a new hold on a lower tooth, and by this means a powerful leverage is brought to bear upon the spike which will readily draw the same from its seat. When the spike is fully drawn, the lever 24 is released and the jaws 41 permitted to open and the said spike will drop from the jaws, and the same operation may be successively carried on.

The device may be made of varying dimensions to suit the class of work for which it is designed and is of light construction, but at the same time strong and durable. It is quickly operated and devoid of complex mechanism or frail parts that would readily become broken or disarranged by a continued operation.

It is obviously apparent that many minor changes in the details of construction and arrangement of the several parts might be made and substituted for those shown and described without in the least departing from the nature or spirit of the invention.

Having thus described the invention, what is claimed as new is—

1. In a spike-puller, the combination of guides having a toothed slide mounted therein, a pair of spike-engaging jaws carried by the lower end of the said slide, a foot-lever operatively connected with said jaws to close the same, and a lever having a dog in connection therewith for engaging the toothed slide

to elevate the same, substantially as and for the purposes specified.

2. A spike-puller comprising a vertically-adjustable slide with teeth therein, a lever carrying a dog to engage said teeth, and movable jaws supported at the lower end of said slide to engage a spike and a foot-lever operatively connected with said jaws to close the same, substantially as and for the purposes specified.

3. In a spike-puller, the combination of a vertically-adjustable slide having teeth therein, an upper dog to engage the said teeth, a lever carrying a spring-actuated dog to raise the slide, a pair of jaws supported at the lower portion of the slide, a spring-actuated foot-operating lever having a pull-rod to close the said jaws, and means for locking the said foot-operating lever, substantially as and for the purposes specified.

4. In a spike-puller, the combination of a vertically-adjustable slide having teeth therein, a gravitating dog engaging the said teeth, a lever having a dog at the outer end thereof to engage the teeth and raise the slide, an operating-rod attached to the said dog and supporting in connection with said lever a spring engaging the said operating-rod and the lever, a foot-lever having a spring connected thereto, a slotted plate provided with serrations or teeth with which the said foot-lever is adapted to engage, a pull-rod attached to a portion of the said foot-lever, and a pair of jaws having inwardly-extending links to which the said pull-rod is attached, substantially as and for the purposes specified.

5. In a spike-puller, the combination of a vertically-adjustable slide, a spring-actuated lever adjustably secured in connection with the inner lower portion of said slide, movable jaws supported on the outer part of the lower portion of said slide, a pull-rod extending from said foot-lever to the said jaws, an upper gravitating dog to hold the slide in its adjusted position, a lever having a dog in the end thereof to engage the teeth of the slide to raise the latter, and a spring-actuated rod attached to said dog and to the lever, substantially as and for the purposes specified.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

ELMER L. DALE.

Witnesses:

WM. SANDERS,  
JOSEPHINE SANDERS.