

No. 715,036.

Patented Dec. 2, 1902.

H. S. DOYLE.  
TROLLEY HARP.

(Application filed Aug. 15, 1902.)

(No Model.)

Fig. 1.

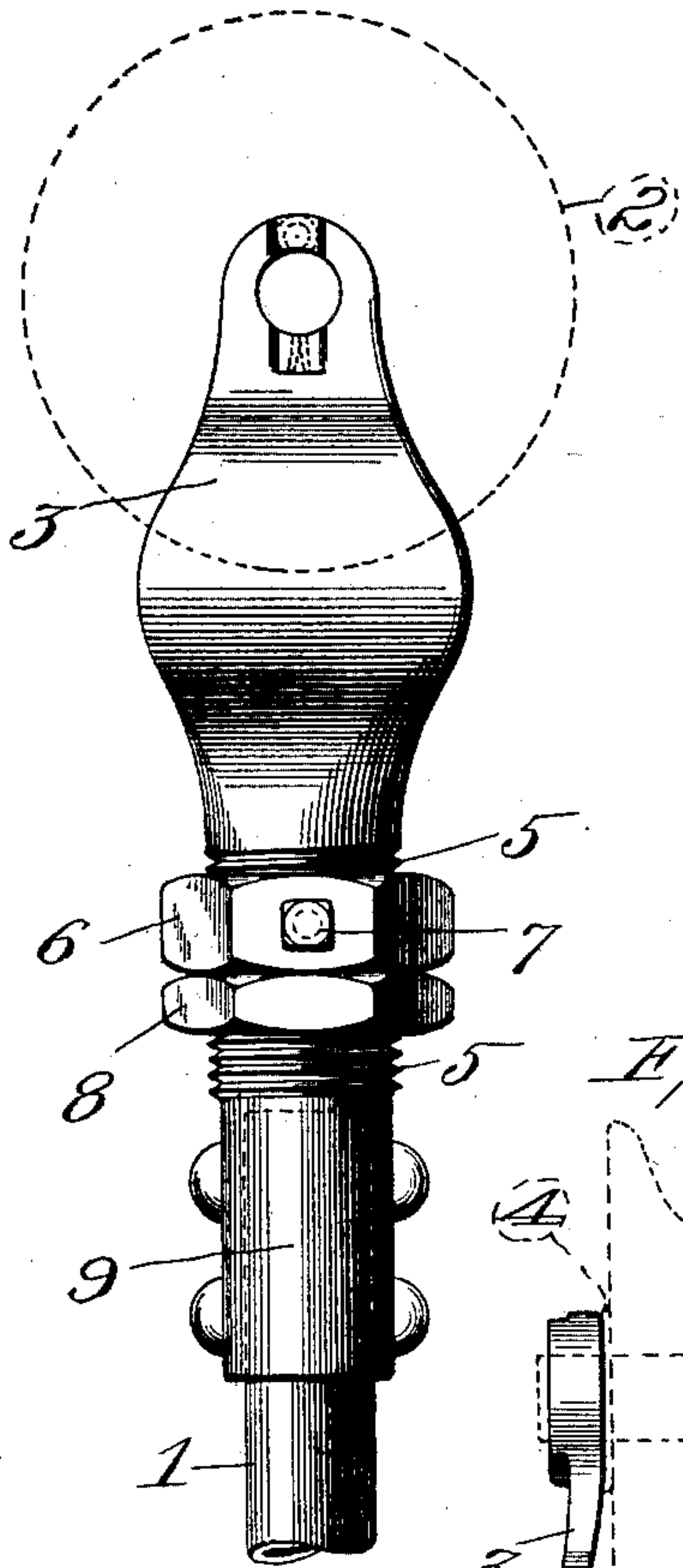


Fig. 2.

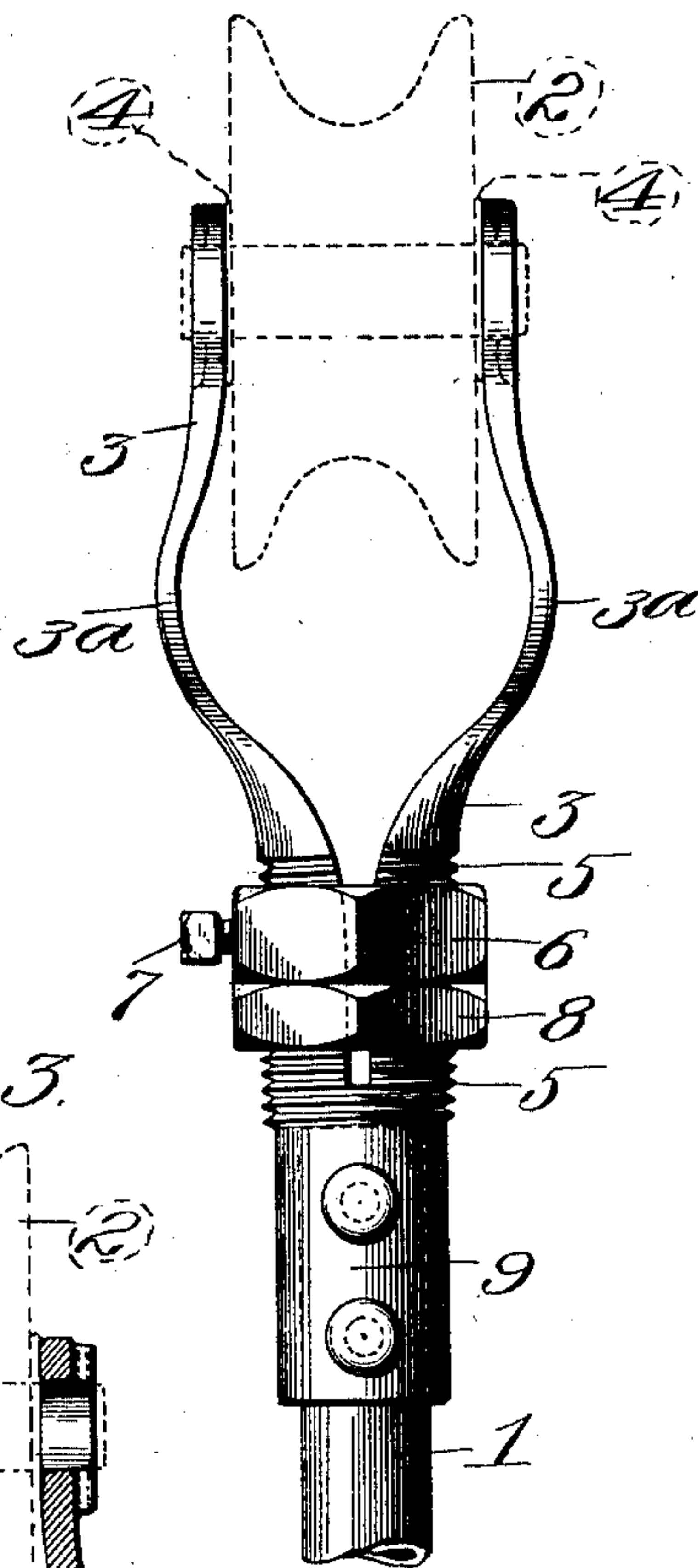
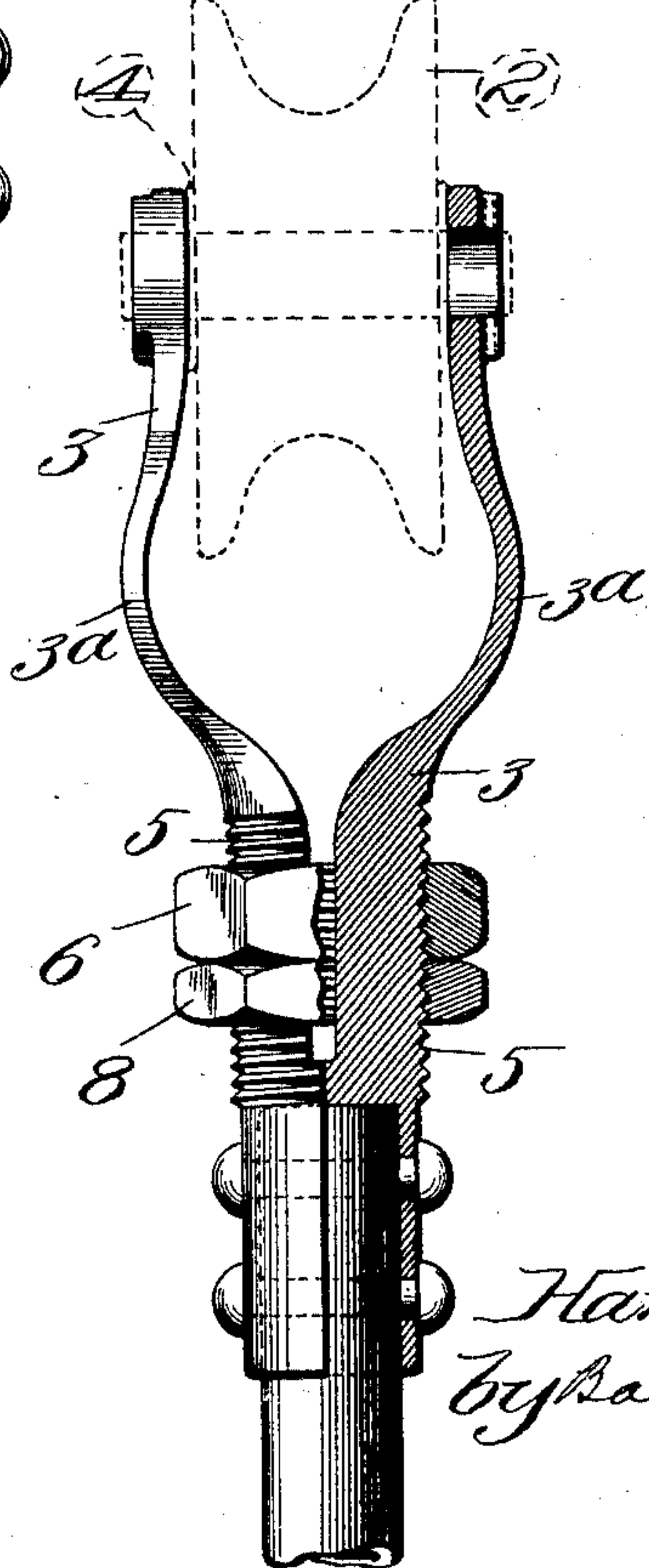


Fig. 3.



Witnesses:  
Mr. H. C. H.  
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Attys.

# UNITED STATES PATENT OFFICE.

HARRY S. DOYLE, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO  
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## TROLLEY-HARP.

**SPECIFICATION** forming part of Letters Patent No. 715,036, dated December 2, 1902.

Application filed August 15, 1902. Serial No. 119,736. (No model.)

*To all whom it may concern:*

Be it known that I, HARRY S. DOYLE, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and  
5 useful Improvement in Trolley-Harps, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this  
10 specification, in which—

Figure 1 is a side elevation, Fig. 2 is a front elevation, and Fig. 3 is a front view, partly in section, illustrating a modification.

15 My invention relates to improvements in trolley-harps, my object being to provide a structure comprising but few parts which can be readily secured to the trolley-pole and serve to form efficient contact with the  
20 trolley.

To these ends and also to improve generally upon devices of the character indicated my invention consists in the various matters hereinafter described and claimed.

25 Referring now more particularly to the drawings, 1 represents the trolley-pole, and 2 the trolley, these parts being of any usual or suitable construction. The trolley-harp comprises side arms 3, which have the axle for  
30 the wheel journaled in one end and are secured to the trolley-pole at their other end, said arms being of spring material, whereby they clamp the wheel, (or the usual washers 4 upon the sides of the same,) and thus make  
35 efficient contact with said wheel. Preferably the arms are thinned at their outwardly-curved portions, as shown at 3<sup>a</sup>, in order to increase their resiliency. The arms are separated from each other at their ends adjacent  
40 the trolley-pole and are provided with means whereby they can be forced toward each other to increase the tension of the free ends of the arms against the wheel. I have here shown  
45 the arms as threaded, the threads extending

from each other so that the said threaded portion 5 tapers. A nut 6 is seated upon said threaded portion, and movement of said nut serves to adjust the tension upon the arms in a manner which will be apparent. This  
50 adjusting-nut can be locked in position in any suitable manner, as by means of a set-screw 7 and the jam-nut 8.

I prefer to form the harp of a single piece of material having solid arms, as shown in  
55 Figs. 1 and 2; but it will be apparent that without departing from the spirit of my invention the harp can be formed in two sections, as shown in Fig. 3, and the arms can be cut out in a well-known manner. When  
60 the harp is composed of a single piece of material, it has what may be termed a "body" portion 9, provided with a socket for receiving the trolley-pole, and the arms 3 diverge  
65 from said body portion.

I am aware that many minor changes in the construction, arrangement, and combination of the several parts of my device can be made and substituted for those herein shown and described without in the least departing  
70 from the nature and principle of my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters  
75 Patent, is—

In a trolley-harp or the like, resilient arms having one end connected to the trolley-pole, said arms at said end being threaded and diverging from each other, an adjusting-nut  
80 upon said threaded portions of said arms, and a trolley journaled between said arms; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 13th day of August, 1902.

HARRY S. DOYLE.

Witnesses:

GALES P. MOORE,  
GEORGE BAKEWELL.