

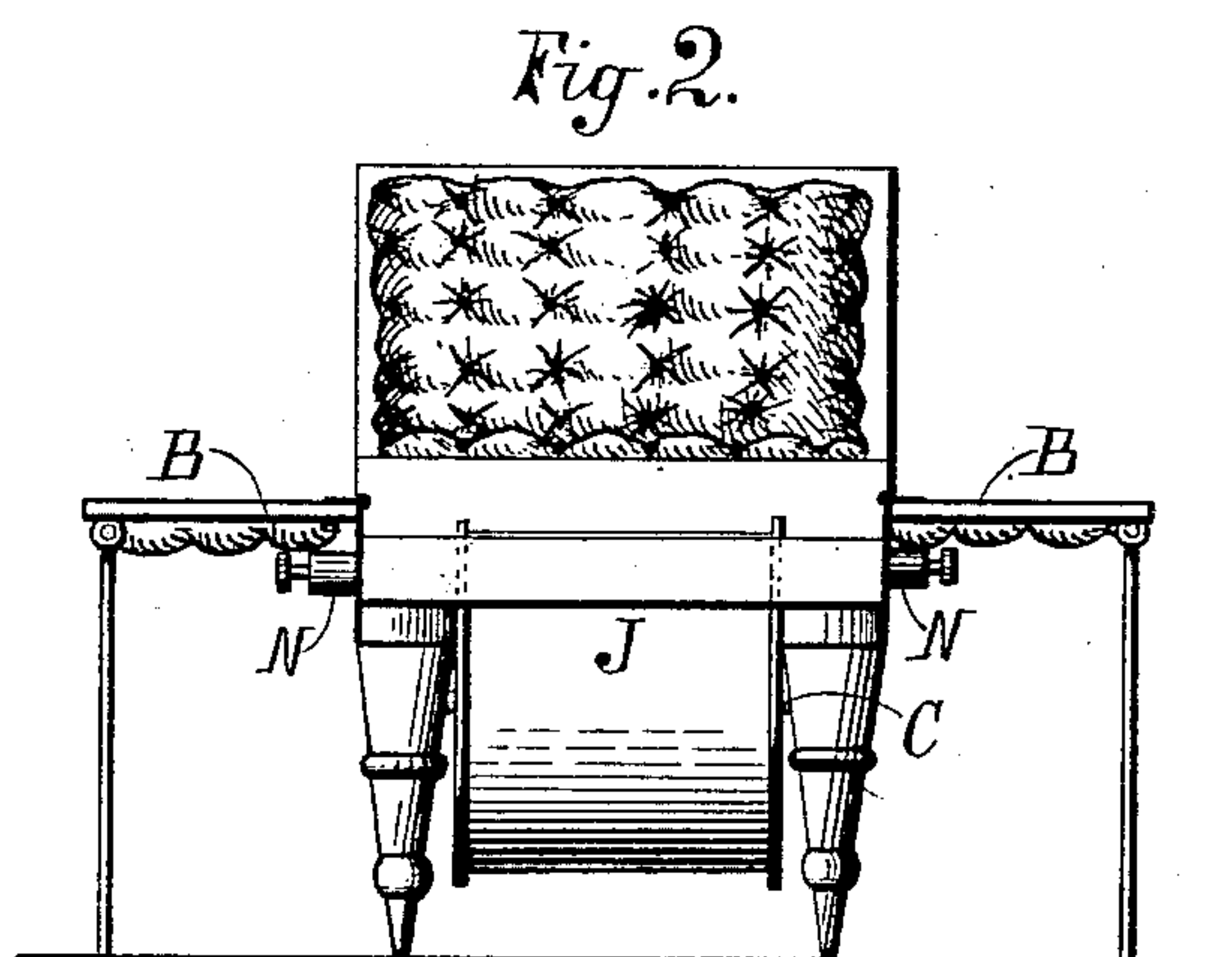
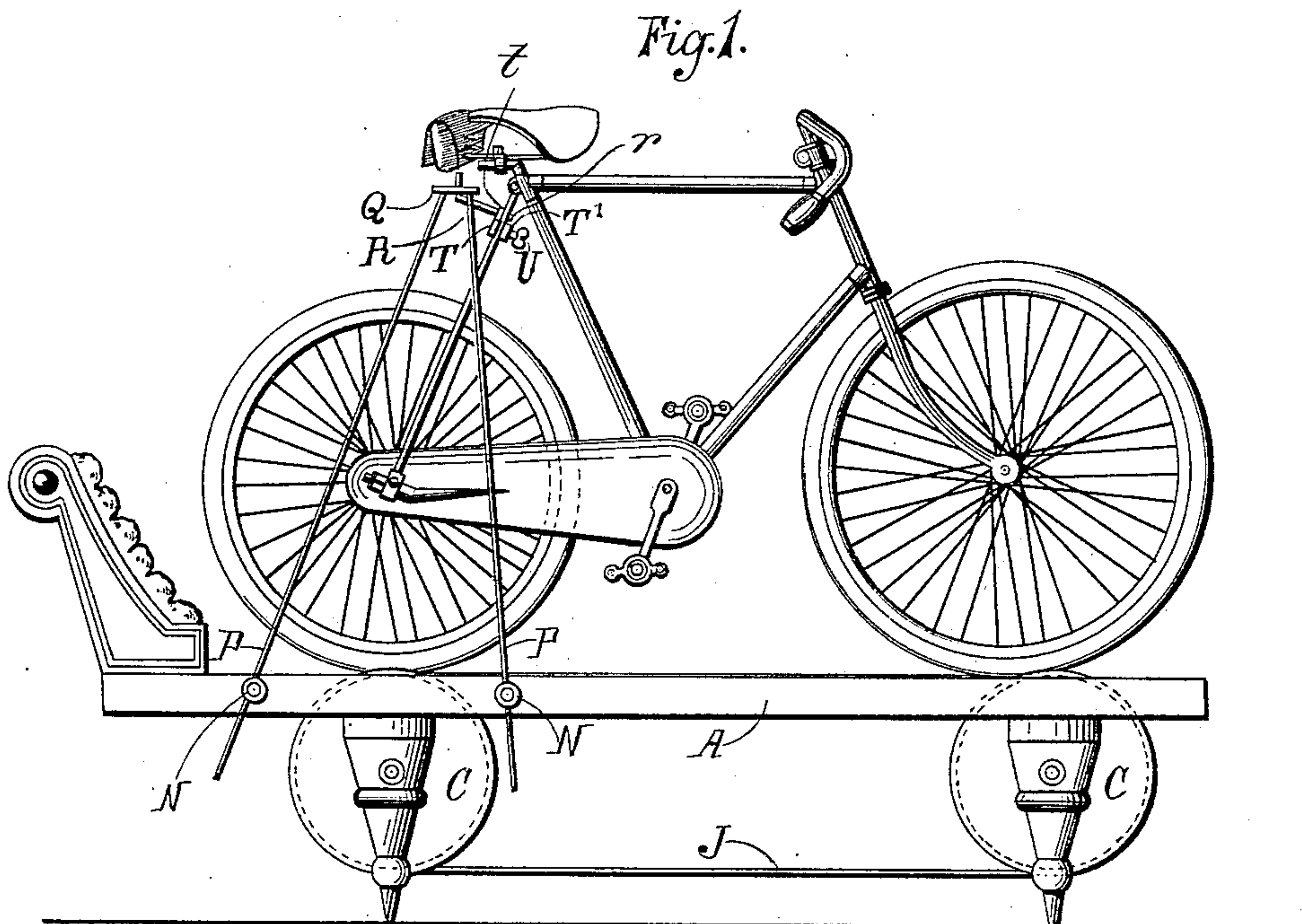
(No Model.)

3 Sheets—Sheet 1.

G. W. TARVER.  
BICYCLE TRAINER.

No. 602,546.

Patented Apr. 19, 1898.



Witnesses:  
E. A. Balloch  
D. H. Miller.

Inventor:  
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Attorneys

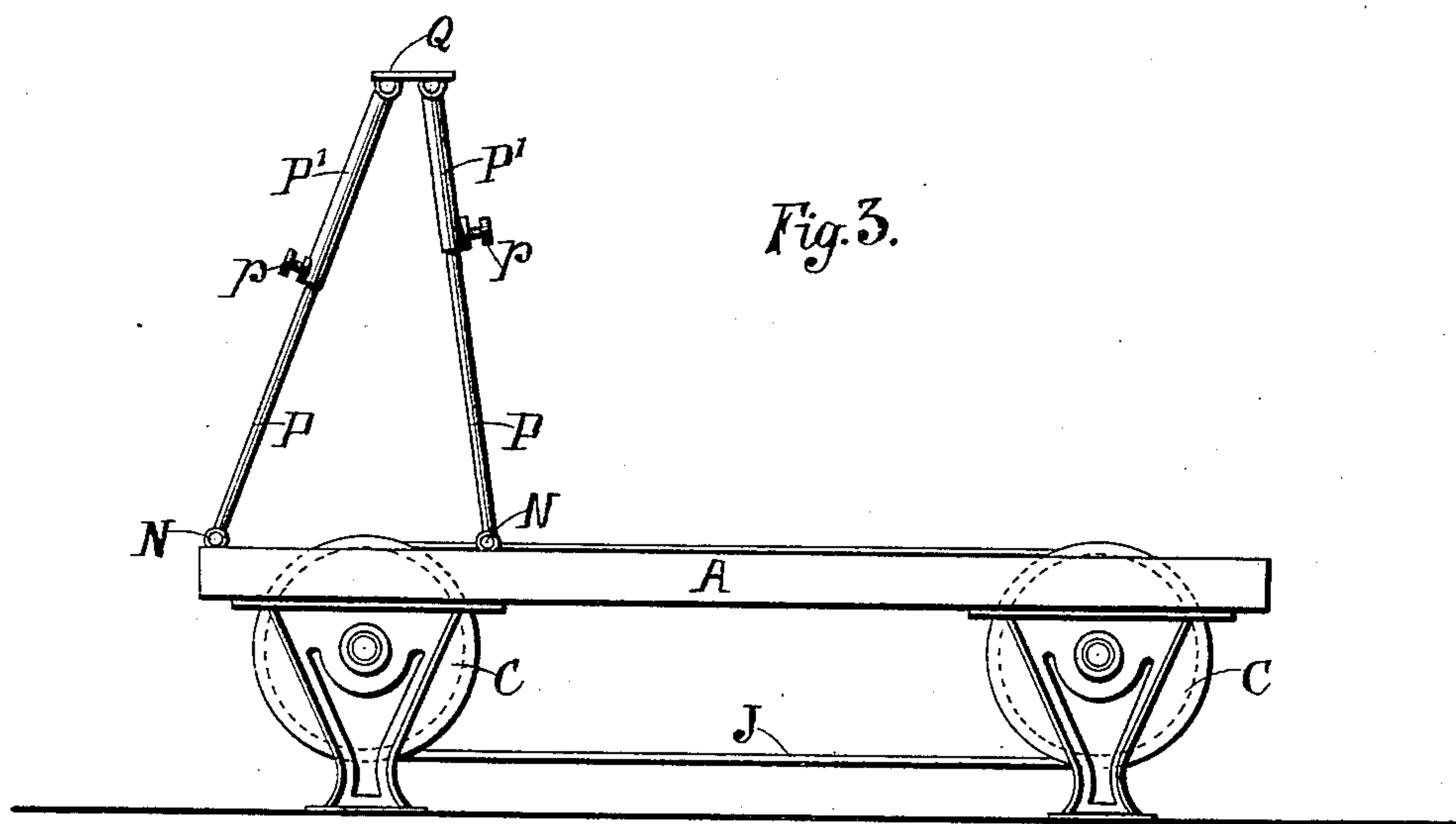
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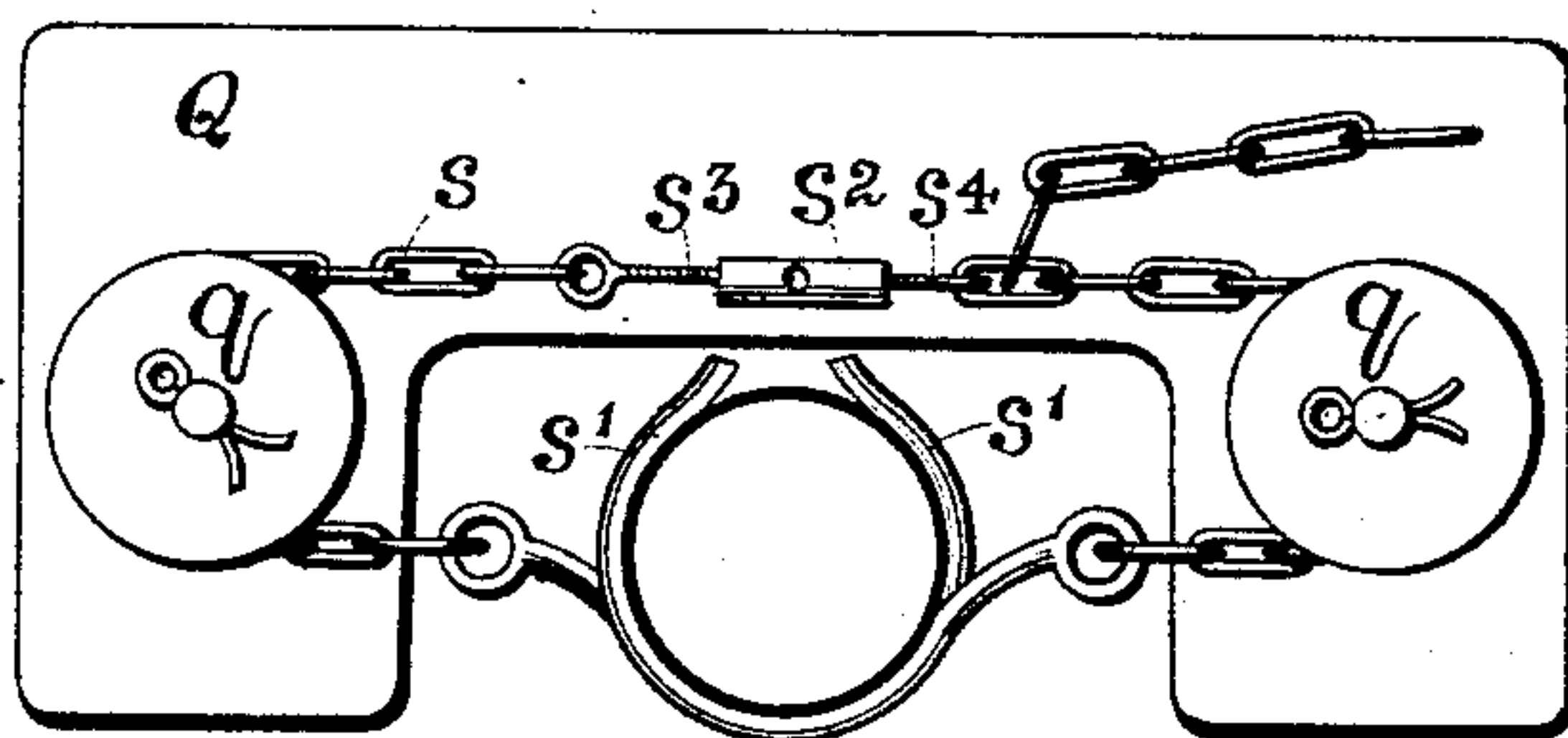
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*Fig. 5.*



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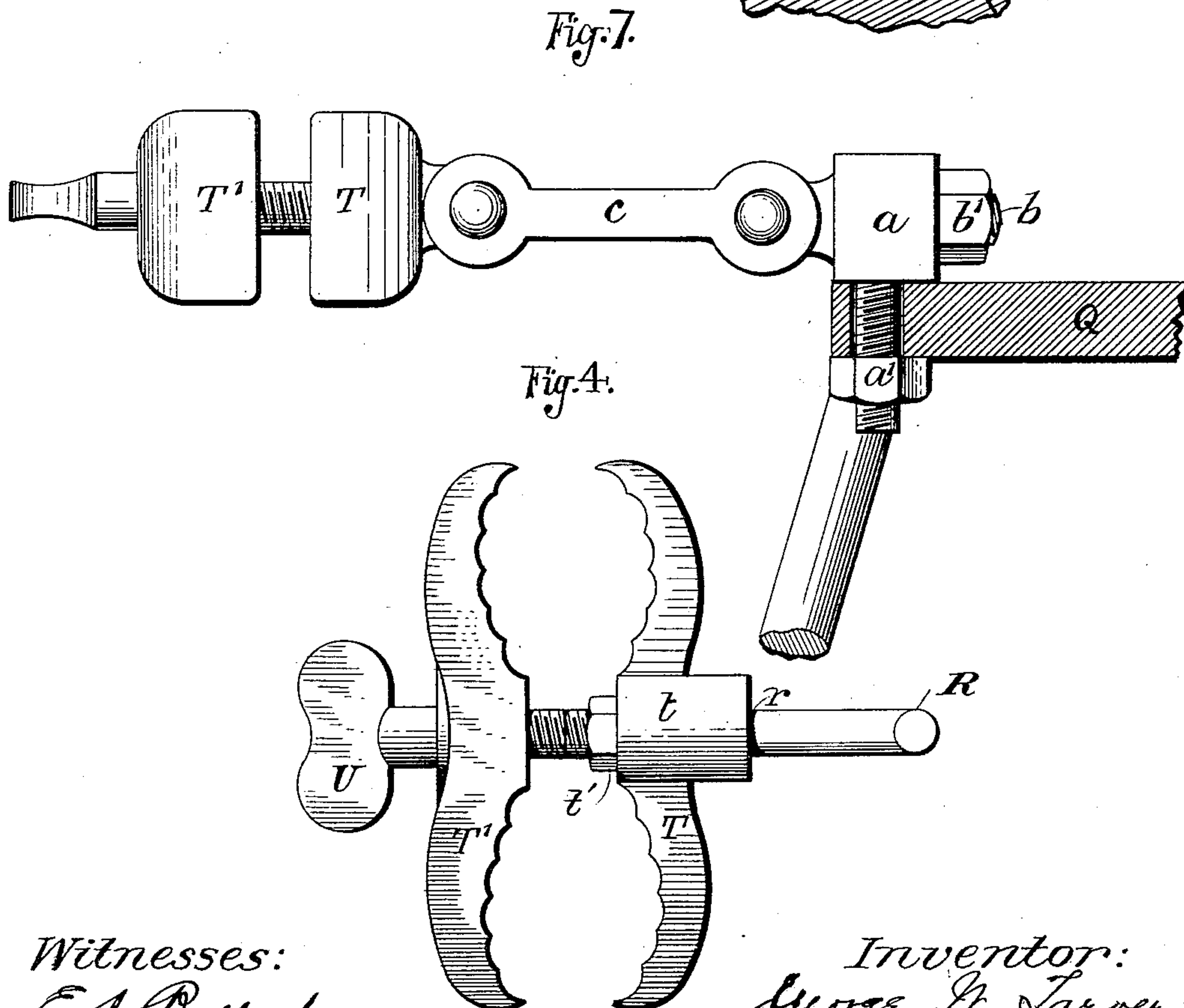
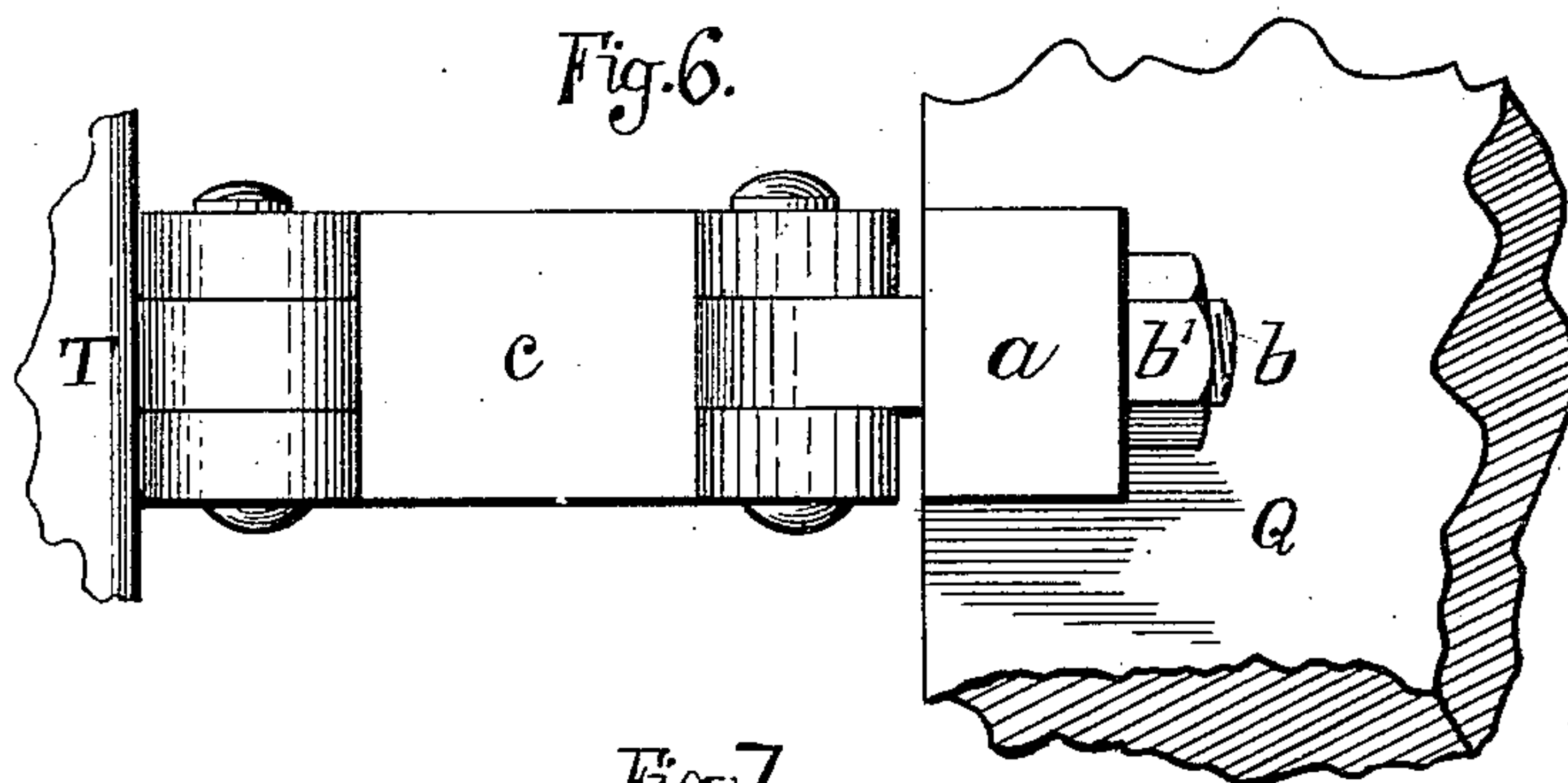
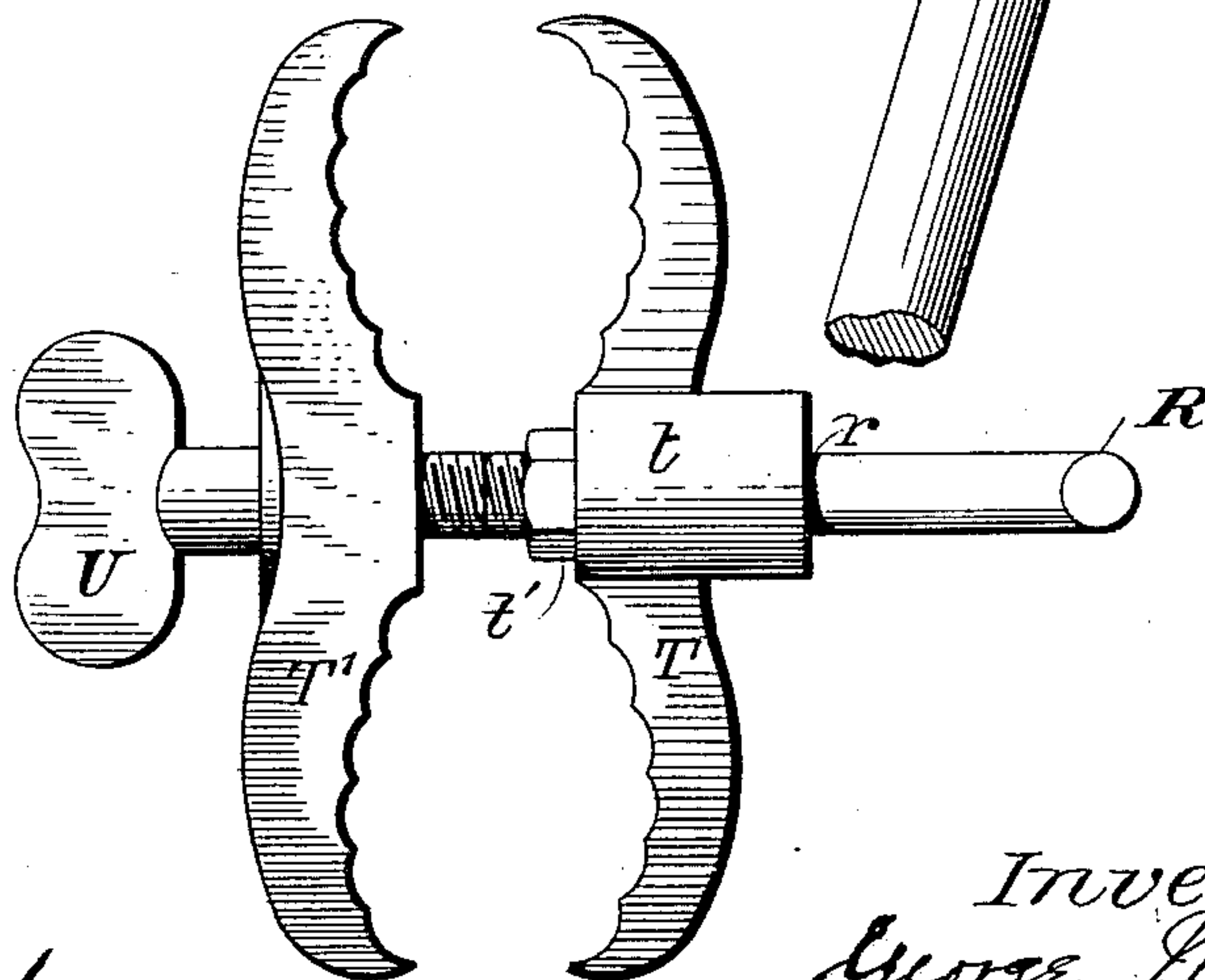


Fig. 4.



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# UNITED STATES PATENT OFFICE.

GEORGE WATERS TARVER, OF LONDON, ENGLAND.

## BICYCLE-TRAINER.

SPECIFICATION forming part of Letters Patent No. 602,546, dated April 19, 1898.

Application filed January 4, 1897. Serial No. 617,955. (No model.) Patented in England May 12, 1894, No. 9,464.

*To all whom it may concern:*

Be it known that I, GEORGE WATERS TARVER, a subject of the Queen of Great Britain and Ireland, residing at Streatham, London, in the county of Surrey, England, have invented a new and useful Machine for the Teaching and Practice of Velocipede-Riding, (for which I have obtained a patent in Great Britain, No. 9,464, bearing date May 12, 1894,) of which the following is a specification.

My invention relates to an exercising device, and specifically to a machine for practicing the riding of velocipedes, which machine is adapted to be placed in a room or apartment and which can likewise be so constructed that when it is not in use for the above purposes it can form a settee or article of furniture in the room or apartment.

A velocipede, though it is stationary, when it is attached to my improved machine can be ridden and driven in the customary manner for training and other purposes and affords tuition and exercise in all respects precisely as when a rider is actually traveling on the road.

In the accompanying drawings, Figure 1 shows in side elevation one form of my improved machine, being a couch when not employed for training or exercising purposes. Fig. 2 is an end elevation thereof. Fig. 3 is a similar view to Fig. 1, showing a modified form of machine, being a settee or box when not otherwise employed; and Figs. 4, 5, 6, and 7 are detail views hereinafter more fully referred to.

My invention consists, essentially, of a machine comprising an endless band or carrier passing over rollers that are mounted in a suitable frame, upon which band the wheels of a velocipede bear, the velocipede being held firmly but freely at a point as near as possible to or actually at the saddle. The pedaling of the velocipede rotates the driving-wheel and transmits its movement to the endless band, which in turn rotates the steering-wheel. The endless band becomes thus, in effect, a moving artificial course or road, the velocipede being maintained stationary; but owing to the method and point of attachment the same conditions of balance and steering obtain as when the velocipede is actually ridden on the road.

Referring to the drawings, A is the frame, and C are the rollers. Around these rollers is an endless band or carrier J. The desired tension may be given to such band either by so mounting one of the rollers that it can be adjusted or by providing another adjustable roller or otherwise. The band may be made of any suitable material or materials and in any appropriate manner. For example, it may be made of a strong textile or like material, and the edges and other parts thereof may be strengthened by the addition of ropes, steel ribbons, or the like.

On each side of the frame A are secured lugs or sockets N, from which supports P rise. These supports extend toward each other, and at their approaching ends they are secured to a plate Q. Between this point and the point of attachment to the velocipede, as hereinafter described, it is necessary that there should be a universal joint. For this purpose an L-shaped pin R may pass through an aperture in the plate Q and be capable of free vertical movement therethrough and allow of horizontal movement through a certain arc. The pin R carries a suitable clamping device. The drawings show one form in which the limb r passes freely through a lug t on one jaw-plate T of a clamping device, as shown more clearly in plan view in the detail Fig. 4, and is retained by a nut t' or other suitable means. The backstays of the velocipede are clamped between the said plate T and a second one, T', by means of a winged nut U, as shown, at a point as near as possible to or actually at the saddle. By modifying the form of the clamping device it is obvious that the same might be attached to the saddle, its pillar or pin, or other adjacent part of the velocipede.

Fig. 5 shows in plan and on an enlarged scale a modified arrangement for obtaining horizontal play. Fixed onto the plate Q are rollers q, around which passes a chain s. Attached to the said chain are hooks s', shown as designed to embrace the seat-pillar of the velocipede. The said chain is also provided with an adjusting device, which may, as shown in the drawings, consist of an internally-threaded sleeve s<sup>2</sup>, into which screw a hook s<sup>3</sup> and shackle s<sup>4</sup>. For attachment and detachment purposes one portion of the chain hooks onto



the hook, and the turning of the sleeve  $s^2$  permits of precise adjustment of the parts. Obviously this arrangement might be such that the hooks  $s'$  might take directly onto the saddle, and, if required, one or more springs might be inserted in the chain.

An alternative method of obtaining a universal joint is that shown, respectively, in plan and elevation in Figs. 6 and 7, wherein the screwed stem of a lug  $a$  passes freely through the plate  $Q$  and is held by a nut  $s'$  or otherwise. Through this lug a bolt  $b$ , held by a nut  $b'$ , freely passes, and connected to it is a link  $c$ , to which in turn is secured the clamping device.

When the machine is not in use with a velocipede, the supports  $P$  and the sockets  $N$  may in the arrangement shown in Fig. 1 be detached.

Fig. 3 illustrates a modified arrangement wherein the supports are telescopic, so as to be adapted for attachment to machines of various heights and to facilitate folding. The one portion  $P$  of the supports is in this instance jointed to the frame and when not in use will close down into grooves provided for the purpose in the frame or otherwise. The portions  $P'$  are attached to the plate  $Q$ , and the parts are maintained in their desired positions one within the other by the clamping-screws  $p$ .

To the sides of the frame  $A$  are secured hinged or detachable platforms  $B$ . These platforms may be retained horizontally on legs, as shown in Fig. 2, and arranged either to fold over the top of the machine or to fall down at the sides thereof.

When it is desired to employ the machine with a velocipede, the platforms  $B$  are opened out and the velocipede placed in position and secured thereto, as described. Upon the learner or rider mounting the velocipede and pedaling in the usual way the tire of the driving-wheel of the velocipede will operate to

drive the band  $J$  and the steering-wheel of the velocipede will rotate in the same direction as the driving-wheel. Consequently it becomes necessary for the rider to steer the velocipede and balance himself precisely as when the velocipede is traveling on the road.

What I claim is—

1. In a machine for teaching velocipede-riding, the combination of a frame, rollers supported therein, an endless band passing over said rollers, a supporting-frame for the velocipede secured to the said first-mentioned frame, and means for loosely coupling the supporting-frame to the rear portion of the velocipede so that the velocipede may have tilting and lateral movements relatively to the supporting-frame and rollers.

2. The combination of the supporting-frame, an endless carrier mounted therein, a velocipede-supporting frame secured to said first-mentioned frame, and means for loosely coupling the supporting-frame to the rear portion of the velocipede so that the velocipede may have tilting and lateral movements relatively to the supporting-frame and carrier.

3. The combination of the supporting-frame, an endless carrier mounted therein, a velocipede-supporting frame, devices for adjusting the velocipede-supporting frame vertically relatively to the frame that supports the endless carrier, and means for loosely coupling the supporting-frame of the velocipede to the rear portion of the velocipede so that it may have tilting and lateral movements relatively to the supporting-frame and endless carrier.

In testimony whereof I have hereunto subscribed my name.

G. WATERS TARVER.

Witnesses:

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