

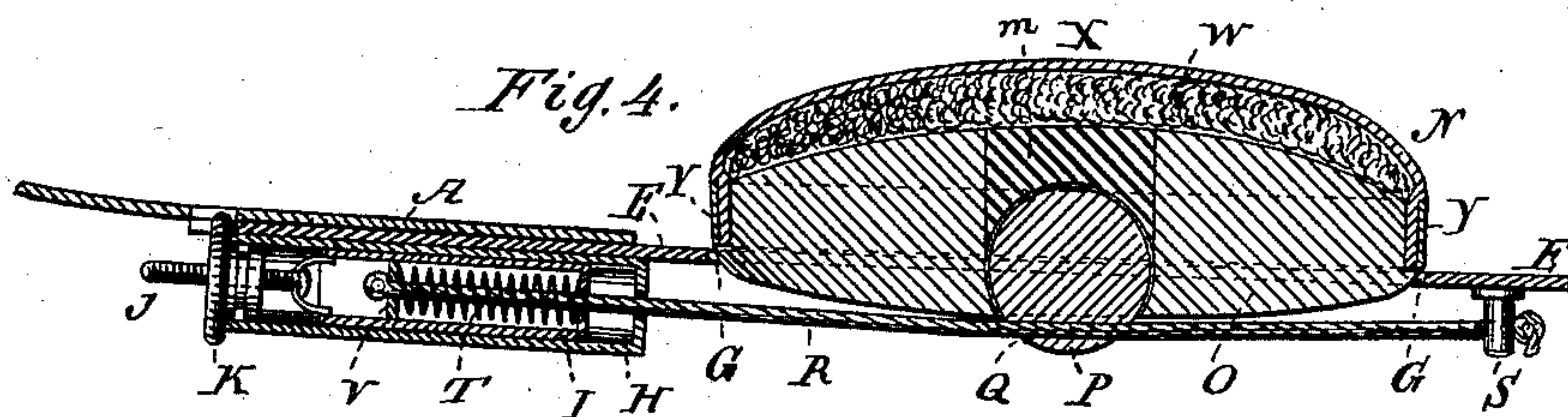
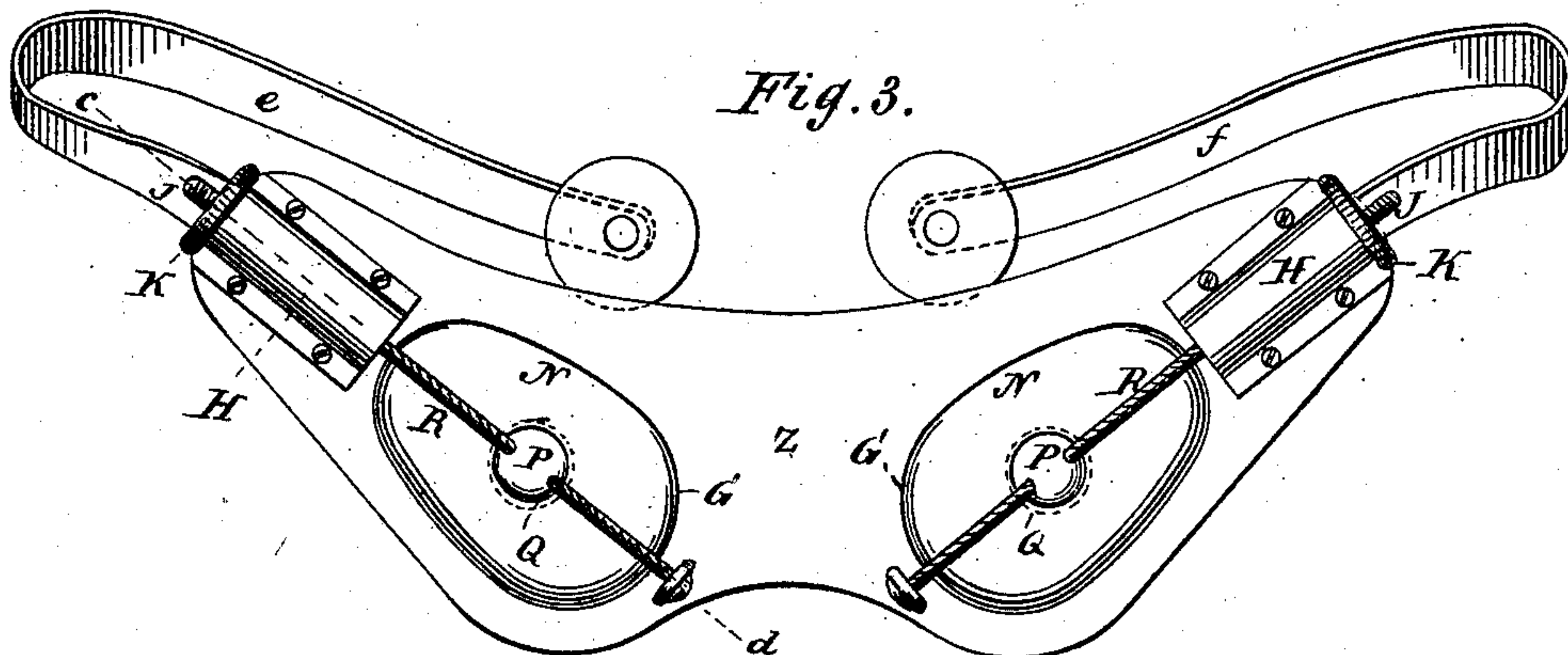
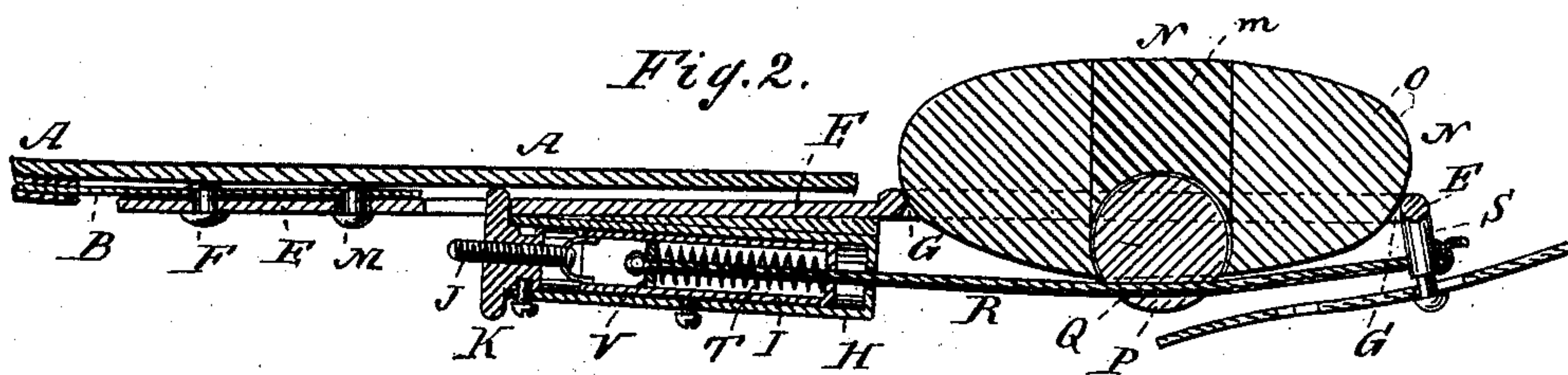
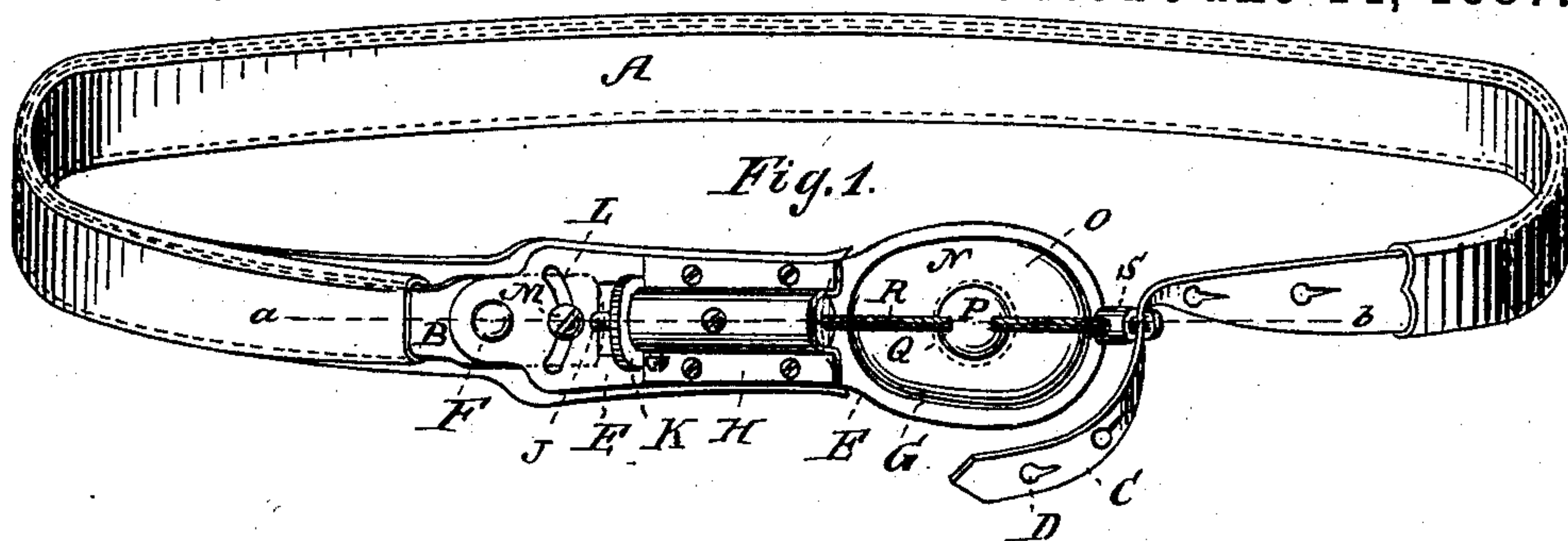
(No Model.)

G. N. TIBBLES.

TRUSS.

No. 364,738.

Patented June 14, 1887.



WITNESSES:

Edward Wolff  
W. A. C. Matthei

INVENTOR

George W. Tibbles,  
BY  
Ellison & Gill,  
ATTORNEYS.



# UNITED STATES PATENT OFFICE.

GEORGE N. TIBBLES, OF JERSEY CITY, NEW JERSEY.

## TRUSS.

SPECIFICATION forming part of Letters Patent No. 364,738, dated June 14, 1887.

Application filed February 11, 1887. Serial No. 227,257. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE N. TIBBLES, a citizen of the United States, and a resident of Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Trusses, of which the following is a specification.

The invention relates to improvements in trusses for hernia, and its object is the production of a truss which may be worn with entire comfort by the patient, and the contact-ball or bearing-point of which will retain its position without causing pain during the movements of the body of the wearer.

The invention may be embodied in either a double or single truss, and may be made electrical, if desired. The contact or pressure ball or pad is attached by means which permit its adjustment, and has a controlled spring action, and said contact part is capable of moving with the body without varying the degree of its pressure or its point of contact and without discomfort to the patient.

My invention will be more fully understood from the description hereinafter presented, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a single truss embodying the invention; Fig. 2, a central transverse section through the dotted line *a b* of Fig. 1, on an enlarged scale; Fig. 3, a front view of my truss constructed for double hernia; and Fig. 4 is a section on the dotted line *c d* of Fig. 3, on an enlarged scale.

In the drawings, A designates the band of usual construction, which passes around the body and incloses the flat spring B in the customary manner, and has upon one of its ends the flexible strap C, provided with holes D, as shown. Upon the end of the spring B, opposite to the strap C, and which end projects beyond the band A, is secured the plate E by means of the pivot F. The plate E is provided at its outer end with the elliptically-shaped opening G, and has secured upon it, between said opening and its pivoted end, the casing H, which is in the form of a hollow cylinder, and incloses an auxiliary cylinder, I; the latter being adjustable within the former by means of the screw J, rigidly connected with the cylinder I, and the rotary adjusting-nut

K, engaging said screw, as illustrated more clearly in Figs. 2 and 4, and hereinafter more particularly referred to.

Between the casing H and the pivot F the plate E is provided with the curved slot L, within which is placed the set-screw M, the lower end of the screw passing through the end of the spring B. The pivot F permits the plate E to be turned either upward or downward a given distance, according to the length of the slot L, so as to properly adjust it to either side of the body, according to the location of the rupture. After the plate E has been properly adjusted, the set-screw M will be tightened, in order to retain the plate in that position. The inner portion of the band A extends beneath the exposed end of the spring B and the adjoining portions of the plate E, as shown in Fig. 2, for the purpose of preserving the metal from contact with the body.

In the opening G is placed the contact-pad or part N, which is an important feature of my invention, and consists of the body O and ball P, the latter being small in proportion to the size of the body O, and being located in the back of the same. A small portion only of the ball P is exposed beyond the surface of the body O, and this portion is provided with the aperture Q, through which passes the cord of catgut or other material, R, one end of the latter being secured to the post S at the end of the plate E, while the other end of said cord passes through the end of the cylinder H and cylinder I, and thence through the coiled spring T, being then secured to the piston V, which closely hugs the walls of the cylinder I, and is adapted to have a sliding movement therein when drawn toward the end of the cylinder by the cord R, or forced therefrom by the expansion of the coiled spring T.

The inner face of the ball or part N is intended for contact with the body, and the extent of its pressure thereon may be regulated by the adjusting-nut K, which may be caused to either draw or retract the cylinder I, and thus tighten or slacken the cord R, which sustains the part N, and the tension of which determines the position of the part N with relation to the surrounding edge of the plate E and the body of the patient. The cord R, being



only connected with the part N by passing through the aperture in the ball P, permits said part to have a rocking motion with the movements of the body without increasing the pressure, and said ball being capable of movement in any direction the part N will preserve its contact with the body without causing discomfort during all the variable positions of same. The pressure of the part N on the body may be increased or lessened at will by the rotation of the nut K, as above described. The inner bearing-face of the part N may be left smooth and plain, as shown in Fig. 2, or may be supplied with a soft pad, as illustrated in Fig. 4, wherein W denotes a cushion of felt or other suitable material, covered with a piece of leather, X, the edges of which extend around the part N, and are there secured by the metallic band Y, which is passed over the leather and closely binds the same upon the sides of said part N. If at any time it should be desired to replace the pad on the part N with a fresh pad, this may be very readily accomplished, since both the felt and leather will become detached by the simple removal of the band Y.

The trusses shown in Figs. 1, 2, and 4 are adapted for single hernia, and any one of them may be used as either a right or left truss, while the truss illustrated in Fig. 3 is intended for double hernia, the part N being duplicated and secured by cords R in openings in the plate Z, which will be suitably conformed to comfortably rest against the body, and is provided with the supporting spring-bands *ef*. The truss may be rendered electric, if desired, by merely giving the parts N a zinc contact-surface and the spring-bands *ef* a copper surface. Other metals than those enumerated may be employed to form the opposite poles, as will be understood.

The opening G in the plate or frame E should be of such size as to permit the contact part N to have a given universal movement with the motions of the body without danger of said part rocking over on the reverse side.

In the construction of the truss the ball P may be arranged in position by being introduced through an opening from the inner side

of the body O, said opening being afterward filled by a plug, *m*, as shown.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a truss, the contact part consisting of the body O and the ball P, seated in the back of said body, combined with an open plate encompassing said contact part and a ligament secured at each end and at its central portion to the said ball, the contact part being free to have a universal movement with the motions of the wearer, substantially as and for the purposes set forth.

2. In a truss, the contact part consisting of the body O and the ball P, seated therein, combined with a supporting-frame encompassing said part and a ligament connected with the ball P, and secured at one end to said frame and at the other to an elastic tension device, substantially as and for the purposes set forth.

3. In a truss, the contact part consisting of the body O and the ball P, seated therein, combined with the supporting-frame encompassing said part and a ligament connected with the ball P, and secured at one end to the frame and at the other to a spring-tension device provided with means of adjustment, substantially as and for the purposes set forth.

4. In a truss, the contact part consisting of the body O and the ball P, seated therein, combined with the supporting-frame encompassing said part, a ligament connected with the ball P and secured at one end to the frame, the casing H, inclosed cylinder I, spring T, piston V, to which the other end of the ligament is secured, screw J, connected with cylinder I, and the nut K, for adjusting the position of said cylinder and the tension of the ligament, substantially as and for the purposes set forth.

Signed at New York, in the county of New York and State of New York, this 9th day of February, A. D. 1887.

GEORGE N. TIBBLES.

Witnesses:

CHAS. C. GILL,  
W. A. C. MATTHEE.