

No. 890,899.

PATENTED JUNE 16, 1908.

L. A. GARCHEY.

ELASTIC MEANS.

APPLICATION FILED AUG. 5, 1907.

Fig. 1.

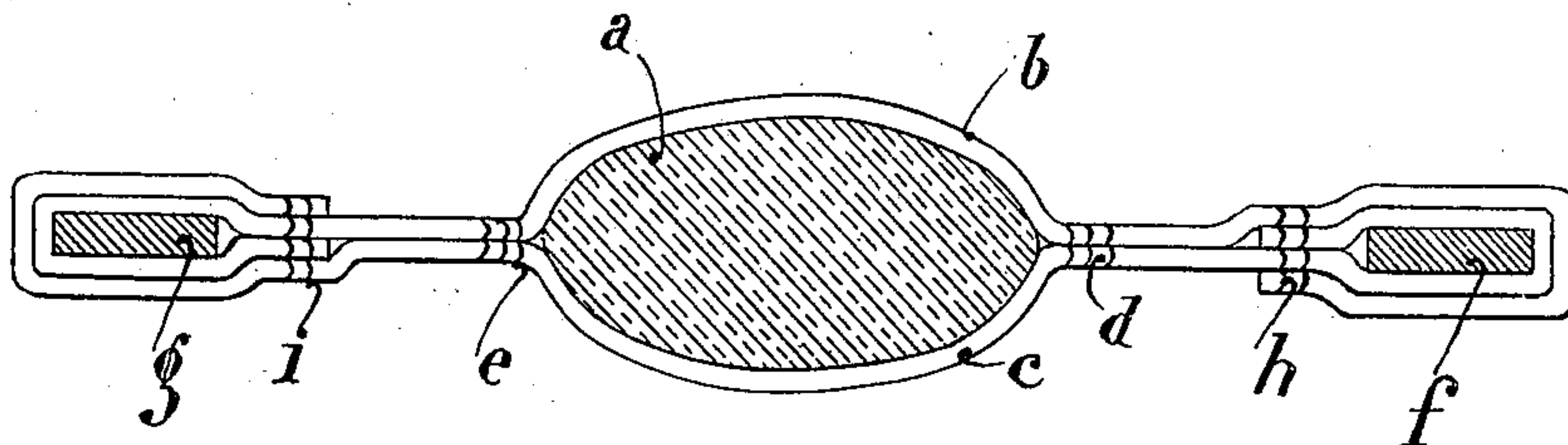


Fig. 2.

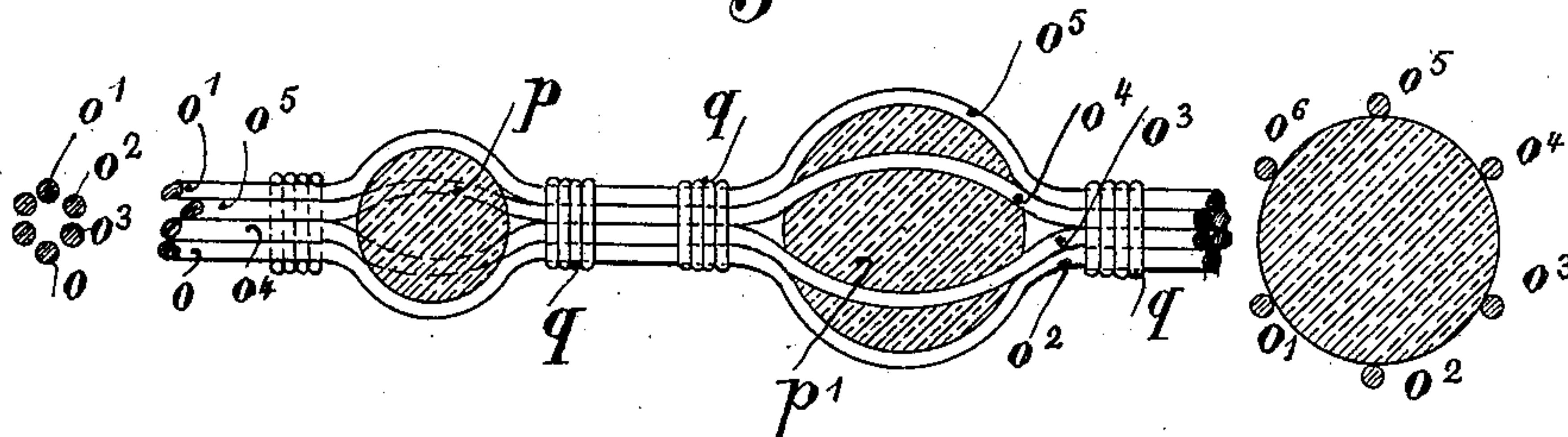


Fig. 3.

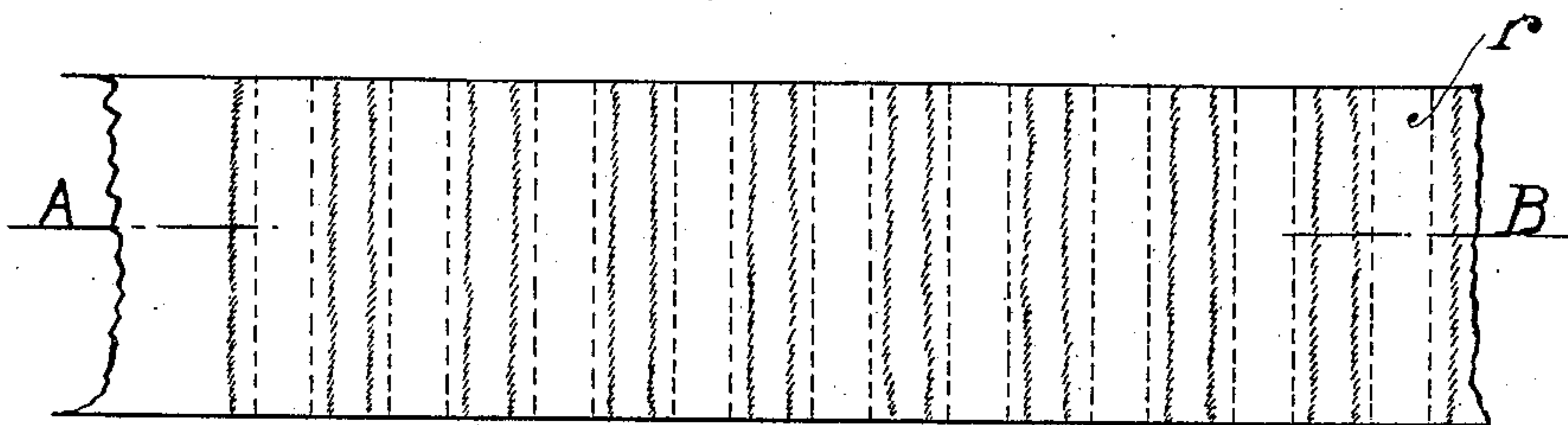
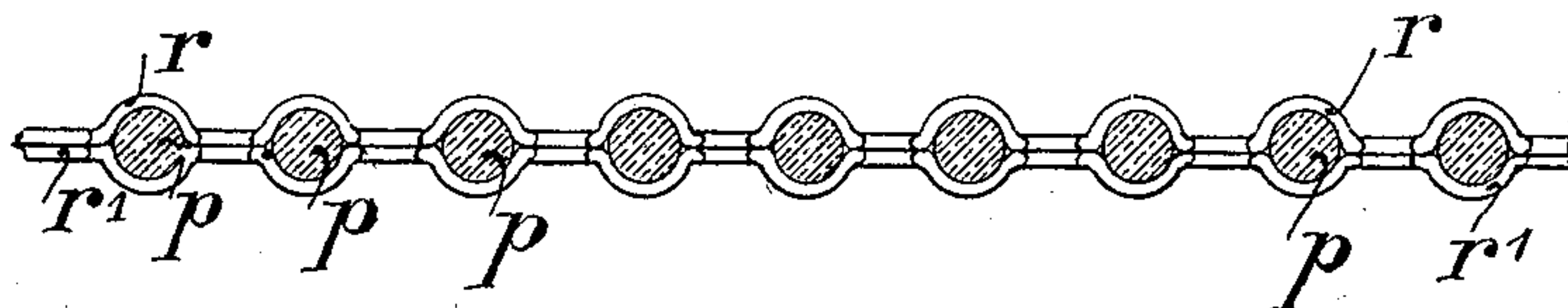


Fig. 4.



Witnesses

Charles Smith
Henri Guerin

Inventor

Louis Antoine Garchey

by Ferdinand Muel
his attorney

UNITED STATES PATENT OFFICE.

LOUIS ANTOINE GARCHEY, OF PARIS, FRANCE.

ELASTIC MEANS.

No. 890,899.

Specification of Letters Patent.

Patented June 16, 1908.

Original application filed February 5, 1907, Serial No. 355,947. Divided and this application filed August 5, 1907.
Serial No. 387,216.

To all whom it may concern:

Be it known that I, LOUIS ANTOINE GARCHEY, a citizen of the French Republic, residing at Paris, France, have invented certain new and useful Improvements in Elastic Means, of which the following is a specification.

The present invention relates to a new elastic means, characterized by the combination of two parts, of which the one is flexible, but inextensible, while the other part is elastic. The flexible part preferably consists of leather or of strong canvas, and the elastic part consists of india-rubber. The combination of these parts is such that any tractional effort is exclusively received by the canvas and that the india-rubber only works under compression, the device in its totality working under traction is lengthened. It is easy to understand, that under such conditions the india-rubber can be strictly reduced to the minimum required for elasticity because it has not to fulfil any other function; on the other hand the resistance against traction can be obtained in any required degree by combining a multiple number of sheets of canvas. In this manner there will be obtained easily and at little expense an elastic means which can support any given load and which possesses any desired degree of elasticity.

The principle of the invention consists in inclosing between two sheets of canvas a block of solid or hollow india-rubber in such a manner, that any tractional effort effected upon the canvas determines a compression of the india-rubber block and consequently an elastic lengthening of the device. As soon as the traction ceases the rubber block resumes its original shape in pushing aside the sheets of canvas between which it is inclosed, in provoking a reduction of the total length of the device.

It is evident, that instead of the canvas any other suitable flexible and inextensible material can be used, such as leather, metal wire etc.

In the accompanying drawings the invention is shown by way of example.

Figure 1 represents in section an elastic means according to the present invention; Fig. 2 represents an elastic cable; Figs. 3 & 4 represent a belt, Fig. 4 being a section on line A—B of Fig. 3.

The new elastic means is composed of a core *a* of solid or hollow india-rubber or other suitable material which must be very compressible and elastic; this core is inclosed between two sheets *b* & *c* of strong canvas or of any other suitable material which is flexible but inextensible. Around the core *a* the two sheets of canvas are fixed the one to the other in any suitable manner, for example by stitchings *d* & *e*. It is obvious that when a pull is exerted upon the two opposite ends of the sheets of canvas, their convex parts, which envelop the core *a*, will have the tendency to come together in compressing the india-rubber core *a* and that, consequently, the device in its totality will be lengthened in radial direction by a quantity corresponding to the compression of the core.

f & *g* are the organs for transmitting the effort of traction to the two extremities of the elastic device; these organs are maintained by stitchings *h* & *i*.

Each sheet of canvas having a known resistance, and each core *a* giving a lengthening which is also determined, it is very simple to combine the required number of sheets of canvas and of elastic cores to obtain an elastic device adapted to support a determined charge and having a predetermined degree of elasticity.

It is evident that the different sheets of canvas could be united by vulcanizing, tarring or otherwise; that they could be replaced by bands of leather or any other suitable material. Further, the cores *a* can be solid, hollow, or inflated by air under pressure.

Fig. 2 represents a metal cable obtained through the combination of a great number of steel wires *o*, *o*¹, *o*², which from place to place envelop a core *p*, *p*¹ of india-rubber and tied up at *q* close to said cores. It is obvious that the tractional resistance of this cable only depends on the resistance of each wire *o* and on the number of wires, and that its lengthening capacity will be in proportion with the lengthening capacity of each rubber core *p* and with the number of such cores. This cable is easy to make and not expensive.

Figs. 3 & 4 show a flat cable, such as a belt for example which is constructed on this principle, that is to say, that between two layers of canvas or leather *r* & *r*¹ there are transversely disposed a great number of cy-

lindrical rubber cores p , two adjoining cores being separated by stitchings. This cable or belt is excessively flexible, light and elastic.

What I claim as my invention is:—

5 1. An elastic device destined to work under traction, which is composed of two parts, one of which is flexible and inextensible and destined to exclusively support the tractional effort, and of which the other, which
10 gives the elasticity, works under compression.

2. An elastic cable composed of a great number of inextensible threads between which from place to place compressible elastic cores of much larger diameter than the
15 cable are inclosed, the threads of the cable

being securely tied up close to the periphery of each of said cores in such a manner that they adopt the inflated shape of the cores.

3. An elastic flat belt composed of two 20 sheets of suitable flexible but inextensible material, which are superposed and united through numerous transverse stitchings, and of rubber cylinders inclosed one between two adjacent stitchings of the flat cables. 25

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

LOUIS ANTOINE GARCHEY.

Witnesses:

DEAN B. MASON,

ALFRED FREY.