

R. A. ROACH.
 SPRING BELT.
 APPLICATION FILED MAR. 22, 1911.

1,012,101.

Patented Dec. 19, 1911.

Fig. 1.

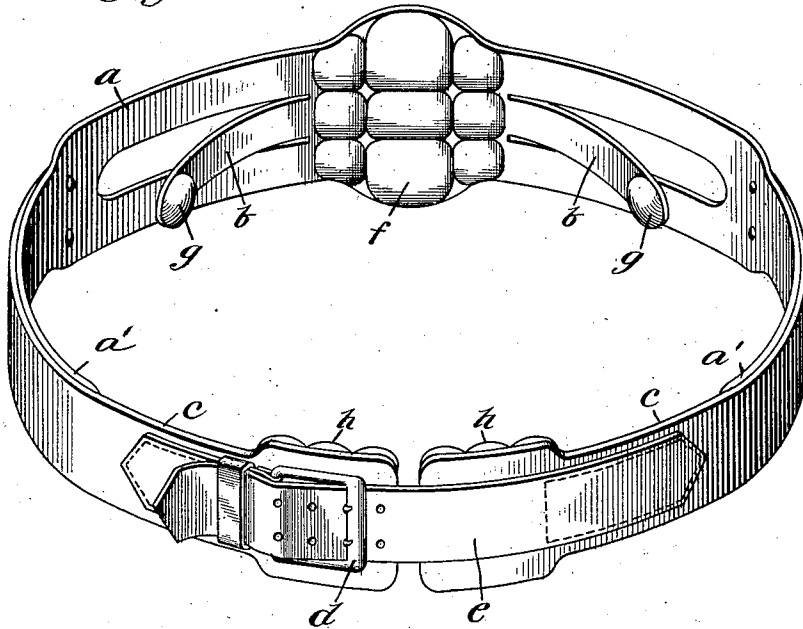
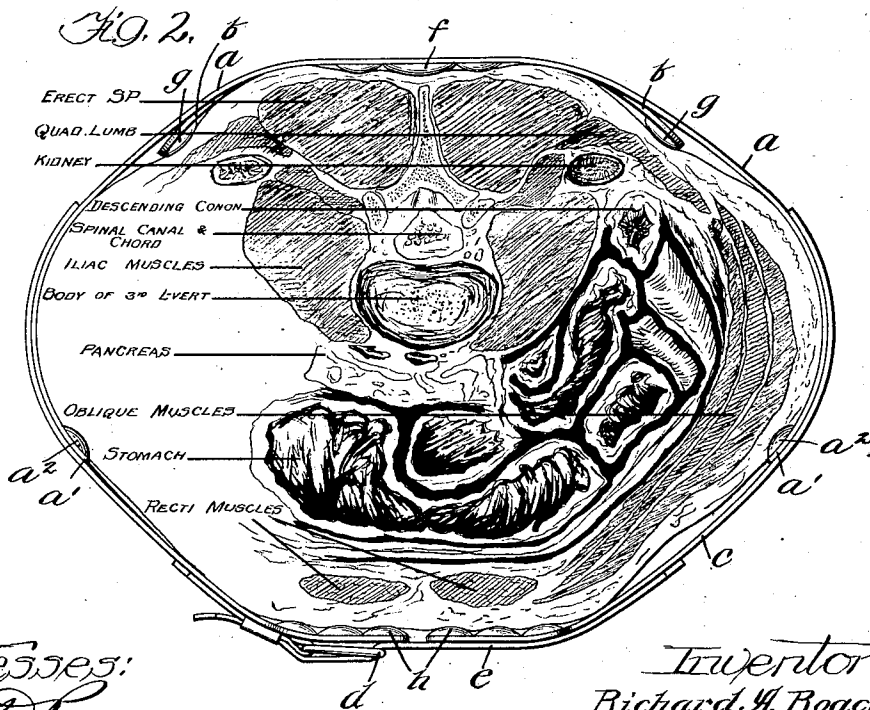


Fig. 2.



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UNITED STATES PATENT OFFICE.

RICHARD A. ROACH, OF CHICAGO, ILLINOIS.

SPRING-BELT.

1,012,101.

Specification of Letters Patent.

Patented Dec. 19, 1911.

Application filed March 22, 1911. Serial No. 616,139.

To all whom it may concern:

Be it known that I, RICHARD A. ROACH, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Spring-Belts, of which the following is a specification.

My invention relates to spring belts, and the purpose of the invention is to provide simple and efficient means which may be applied to the outside of the human body for supporting and bracing certain of the internal organs.

It is a matter of observation by physicians and others that persons who, by reason of their occupation, are subjected to constant vibration, are frequently afflicted with Bright's disease and similar ailments of the kidneys. It is known by physicians and anatomists that in the normal human specimen the kidneys are unprovided with ligamental support, but rest within a pocket or capsule of fat. It has been found in the case of locomotive engineers and firemen, and drivers of such vehicles as lumber wagons, ice, stone and brick wagons, and others, that the excessive vibration to which such men are subjected has metabolized the soft fatty tissue surrounding the kidneys to tough and comparatively unyielding fibrous tissue having little resilience and tending to induce a diseased condition of the kidneys. As a result of my invention this excessive vibration may be prevented and the kidneys and their surrounding tissue kept in normal healthy condition.

Referring to the accompanying drawings; Figure 1 is a perspective view of a belt embodying my invention. Fig. 2 is a transverse section of the human body showing the position of the kidneys and surrounding organs and tissue, and furthermore showing my belt in operative position.

Similar letters refer to similar parts in the two views.

A strip of thin sheet steel *a* has two arms or tongues *b* punched therein, which at the base remain preferably integral with the strip from which they are punched. These arms extend in opposite directions from the central portion of the strip. In practice the parts *a* and *b* are made from spring steel and in the process of manufacture the temper is first drawn so that the parts may be made to hold the shape to which they are bent. While in this untempered form

the strip *a* is bent to conform approximately to the shape of the human body and the arms *b* are bent inward, as shown in Fig. 1. The proportion of the parts is such that when the strip is placed in horizontal position against the body at the elevation of the kidneys, with the center of the strip at the center of the spine, the arms *b* reach to a point over or slightly beyond the location of the kidneys. In the preferred form the strip *a* does not conform exactly to the contour of the body but bends inwardly at the ends *a'*, *a'* to thereby exert a gentle pressure upon the adjacent organs from the front to supplement, as it were, the pressure produced by the arms *b*. The ends of the strip are preferably provided with pads *a²*, *a²*. After this configuration has been obtained the steel is retempered and means are applied for holding the strip in position upon the body of the wearer. The preferred holding means are straps *c* of leather or other suitable material, which are riveted or otherwise secured to the strip and provided with a buckle *d* and tongue *e* cooperating therewith. It is desirable that padding *f* be secured within the strip for contacting the spine and that pads *g* be secured at the ends of the arms *b*. Padding *h* may also be provided at the front of the belt.

In use, when the apparatus has been strapped into position the arms *b* press the pads *g* firmly but yieldingly against the body from the back while the strip ends *a'*, *a'* cooperate therewith and between them compress the parts around the kidneys to a degree sufficient to brace the tissue and prevent vibration of the kidneys and surrounding tissue. By thus artificially holding the parts still and preventing the rubbing of one part upon another, strain and friction of the parts is so much reduced that the parts are able to maintain their normal healthy condition in spite of the vibration of the body. By reason of the padding *f* which contacts the spine, the strain is transmitted chiefly to the spine which of all adjacent parts of the body is best able to stand it.

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

1. Apparatus comprising a strip of spring metal bent to conform approximately to the curvature of the human body

at the elevation of the kidneys, means for holding said strip in close contact with the body of the wearer, and arms integral with said strip, and extending horizontally in opposite directions from the central portion of the strip, and adapted to yieldingly press against the sides of the body approximately at the location of the kidneys, said arms projecting from the main body of the belt inwardly toward the center thereof.

2. Apparatus comprising a piece of spring metal adapted to surround the major portion of the human body at the elevation of the kidneys, arms formed integral with said strip and extending in opposite directions from the central portion thereof, said arms being adapted to yieldingly press against the sides of the body approximately at the location of the kidneys, padding so located upon the strip as to contact the spine when the apparatus is in place, and means for holding the above mentioned parts in contact with the body.

3. A belt comprising a strip of spring metal, and a tongue formed therefrom between the ends thereof and between the upper and lower edges thereof, and extending inwardly to a point inside of the general contour of the belt.

4. A belt comprising a strip of spring metal adapted to extend part way around the body, means for holding it in place, and tongues integral with said strip and of a height less than the height of said strip and located between the upper and lower edges of said strip and terminating short of the ends of said strip and extending inwardly to a point inside the general contour of said strip.

In witness whereof, I have hereunto subscribed my name in the presence of two witnesses.

RICHARD A. ROACH.

Witnesses:

HOWARD M. COX,
MARGARET D. ROBB.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."