

No. 712,016.

Patented Oct. 28, 1902.

L. & G. G. STERN & G. G. LEHMAN.

SUSPENDERS.

(Application filed Jan. 4, 1902.)

(No Model.)

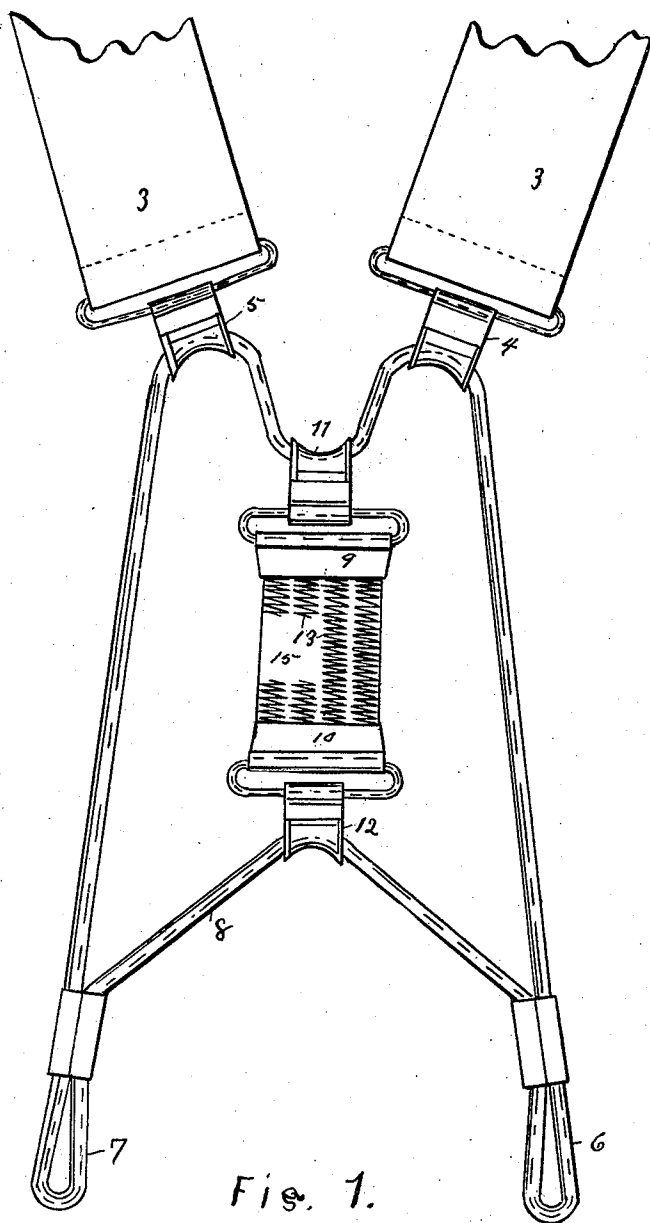


Fig. 1.

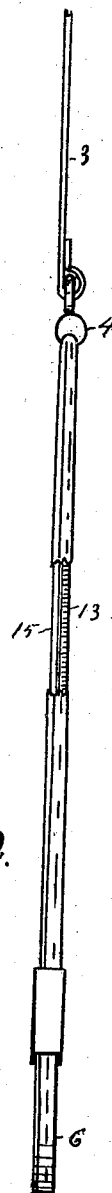


Fig. 2.

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UNITED STATES PATENT OFFICE.

LEOPOLD STERN, GORDON G. STERN, AND GEORGE G. LEHMAN, OF
KALAMAZOO, MICHIGAN.

SUSPENDERS.

SPECIFICATION forming part of Letters Patent No. 712,016, dated October 28, 1902.

Application filed January 4, 1902. Serial No. 88,458. (No model.)

To all whom it may concern:

Be it known that we, LEOPOLD STERN, GORDON G. STERN, and GEORGE G. LEHMAN, citizens of the United States, residing at Kalamazoo, in the county of Kalamazoo, State of Michigan, have invented new and useful Suspenders, of which the following is a specification.

This invention relates to that class of suspenders in which a series of spiral springs are employed between the shoulder-straps and that portion of the suspenders which in use is attached to the back of the trousers and which springs lengthen and shorten under the different strains on the suspenders caused by the movements of the body of the wearer.

The object of the invention is to introduce into the construction herein shown and described a single inelastic backing to the springs which will not only limit the lengthwise stretch of said springs, but will act as a guard between the springs and the shirt of the wearer, with a design to simplify and greatly cheapen the construction and prevent a thick heavy portion in the suspenders and a flapping portion liable to roll or fold and wrinkle and form an uncomfortable sensation in the sensitive part of the back of the wearer's body and also for the purpose of dispensing with tape or fabric inside of the spiral part of the springs to limit the lengthwise stretch of said springs, thus imparting to said springs a free and more quick action in contracting.

In the accompanying drawings, forming a part of this specification, Figure 1 is a rear end elevation of the suspenders or that part which in use is to attach to the trousers at the back of the wearer, the straps for going over the shoulders being broken away; and Fig. 2 is an elevation of Fig. 1 looking from a point at the right with parts broken away, as below described.

Referring to the parts of the drawings pointed out by numerals, 3 represents the straps which go over the shoulders, here shown broken away. Loops 4 5 are attached to the ends of these straps 3. A cord has formed in it by folding upon itself the loops 6 and 7 for attachment to the trousers-buttons, as will be understood, no buttons being here shown. The cord passes from loop 6 on up through

loop 4, over through loop 5, and down to loop 7. A branch 8 of the cord connects the loops 6 and 7.

We have adopted a series of elastic springs 13, side by side, similar to those heretofore used, and they are attached at the ends to the headings 9 and 10. The heading 9 is provided with a loop 11, through which loop 11 that portion of the cord between loops 4 and 5 passes. The heading 10 is provided with a loop 12, through which loop 12 the branch 8 of the cord passes. This arrangement we term the "spring-control." The loops 4, 5, 11, and 12 are like the loop 4 in side view in Fig. 2, the hole through them being larger than the size of the cord passing through them, so that the loops will readily slip on the cord, thus allowing automatic adjustment of the suspenders during the different movements of the wearer. It will be observed that we employ no tape or fabric inside the spirals themselves, for which reason said spirals are free to contract without liability of obstruction. During the automatic adjustment referred to the springs 13 lengthen and shorten under the movements of the body of the wearer, letting out and taking up the slack of the cord.

To limit the distance the springs 13 can stretch or expand, we provide a backing 15, which comes between the springs and the body of the wearer. It is made of any suitable kind of inelastic fabric, and it is on one side only of the springs and is firmly attached at the ends to the respective headings 9 and 10. When the backing is attached to the headings, it should be left a little slack as compared to the normal length of the spirals when in their unexpanded state. This single backing is clearly shown in Fig. 1, where the springs 13 are broken away. In Fig. 2 a portion of the cord is broken away, showing the spring at one side and one edge of the single backing 15.

Having thus described our invention, what we claim, and desire to secure by Letters Patent of the United States of America, is—

In suspenders comprising the shoulder-straps having the end loops, the series of spiral springs, the heading at each end of said springs provided with the loops; a cord hav-

ing loops for attachment to the rear trousers-
buttons, said cord passing loosely through
the loops of the headings and the loops of the
shoulder-straps; a single inelastic fabric back-
5 ing to said spirals on the side which comes
next to the wearer's body, and each end of
said backing being firmly attached to the re-
spective headings of the series of spiral
springs, substantially as set forth.

In testimony of the foregoing we have here- 10
unto set our names in the presence of two wit-
nesses.

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GORDON G. STERN.
GEORGE G. LEHMAN.

Witnesses:

GEORGE RORABECK,
FRANK TAZELUAS.