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EX
302,190

(No Model.)

G. F. BUTTERFIELD.

AIR CUSHION FOR BOOT OR SHOE SOLES.

No. 302,190.

Patented July 15, 1884.

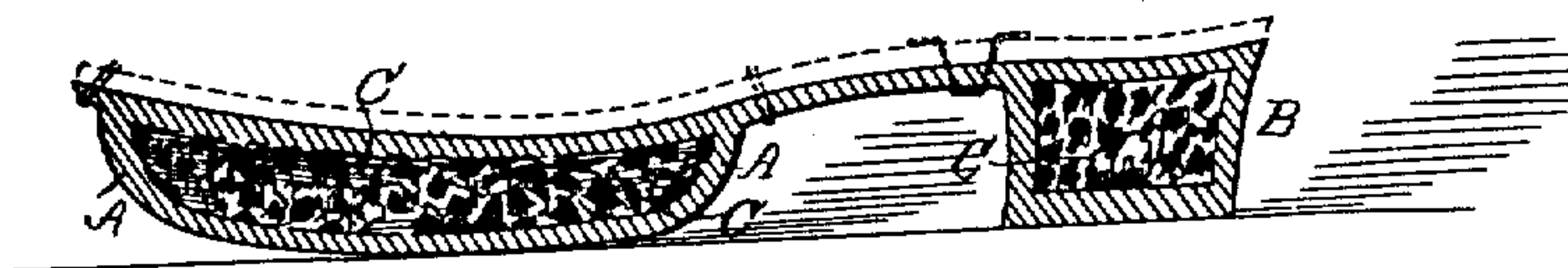


Fig. 1.

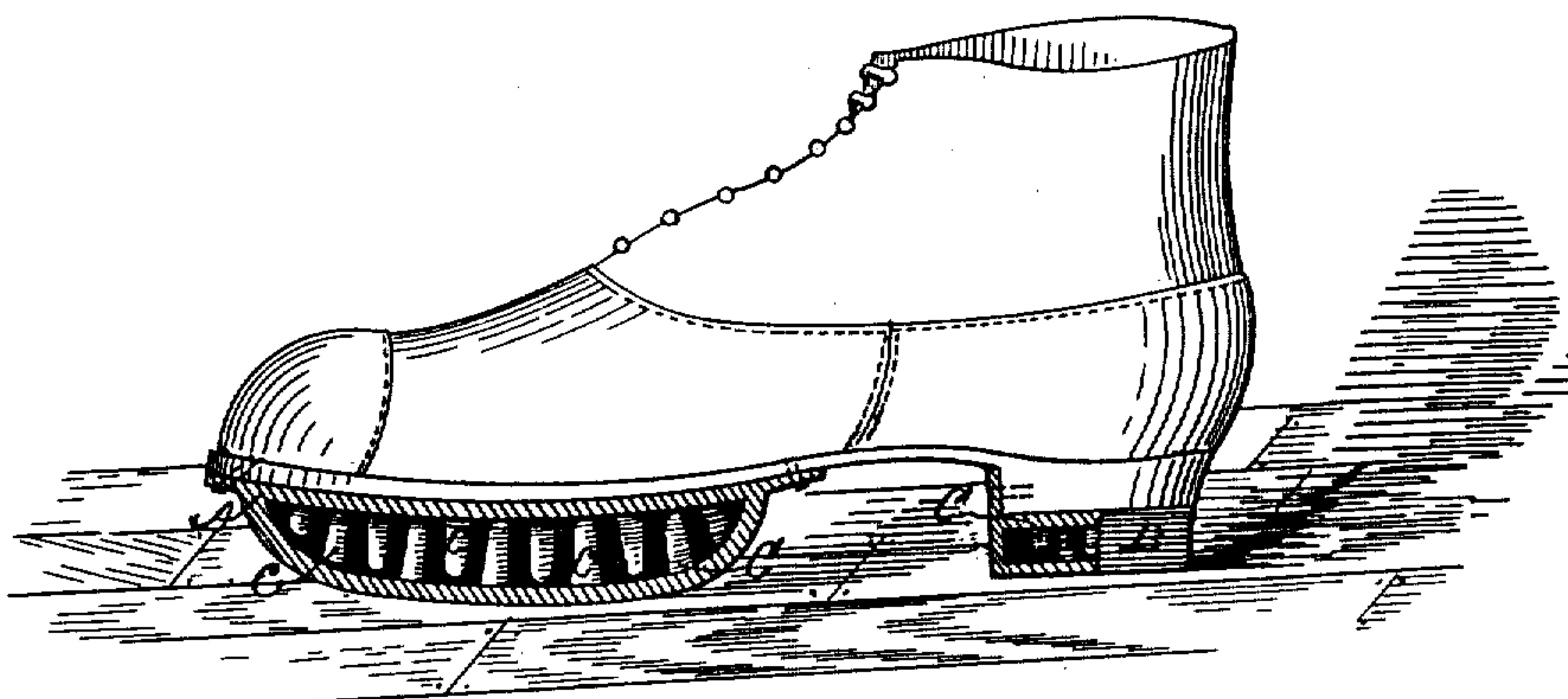


Fig. 2.

Witnesses
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GEORGE F. BUTTERFIELD, OF STONEHAM, MASSACHUSETTS.

AIR-CUSHION FOR BOOT OR SHOE SOLES.

SPECIFICATION forming part of Letters Patent No. 302,190, dated July 15, 1884.

Application filed November 5, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. BUTTERFIELD, a citizen of the United States, residing at Stoneham, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Air-Cushions for Boot and Shoe Soles; and I do hereby declare that the same are fully described in the following specification and illustrated in the accompanying drawings.

This invention is in the nature of an improvement upon that for which Letters Patent of the United States No. 259,092 were granted to me June 6, 1882. In my former invention the sole, tap-sole, or heel of a boot or shoe was formed hollow or with an inclosed air-space, so as to provide a light yielding cushion or elastic tread. Where such air-spaces are very broad, it is desirable to provide intermediate elastic supports, in order that the yield by compression or displacement of the air may not take place all at one point, but may be distributed over the whole sole or heel.

My present invention therefore consists in an elastic boot or shoe sole, tap-sole, or heel formed hollow or with spaces to contain more or less of air, with intermediate supports between the top and bottom thereof, adapted to distribute the strain or pressure over the whole surface, so that the air-spaces may not be collapsed.

In the drawings, Figure 1 shows in section a sole and heel, made hollow, except as filled with a cellular or spongy substance as a yielding intermediate support. Fig. 2 shows a shoe with the sole and part of the heel in sec-

tion, and provided with ridges or points as supports distributed through the air-space.

A is the elastic outer sole, and B the heel, having air-spaces within them and yielding supports C, distributed in such spaces or subdividing them, so as to prevent collapse or undue approach of the top and bottom of the sole or heel under pressure. These supports, as in Fig. 2, are points or ridges of the elastic material extending at intervals vertically across or nearly across the air-space, so as to keep the same open, while affording an elastic tread. In Fig. 1 the supports are shown as of a cellular or spongy nature—such as comminuted felt or sponge-rubber—giving air-spaces or connected openings between the portions of material which keep the walls distended. These two forms of supports may be employed together by making wider spaces between the ribs or ridges of Fig. 2 and filling or partially filling them with the cellular material shown in Fig. 1. These yielding soles and heels will be secured to the boot or shoe as suggested in my former patent, or in any convenient manner.

I claim as my invention—

An elastic sole, tap-sole, or heel formed with an interior air-space subdivided by yielding supports, substantially as and for the purpose set forth.

In testimony whereof I hereto affix my signature in presence of two witnesses.

GEORGE F. BUTTERFIELD.

Witnesses:

A. H. SPENCER,

E. A. PHELPS.