

No. 654,657.

Patented July 31, 1900.

D. LITTLEWOOD.  
BELT FASTENER.

(Application filed June 2, 1899.)

(No Model.)

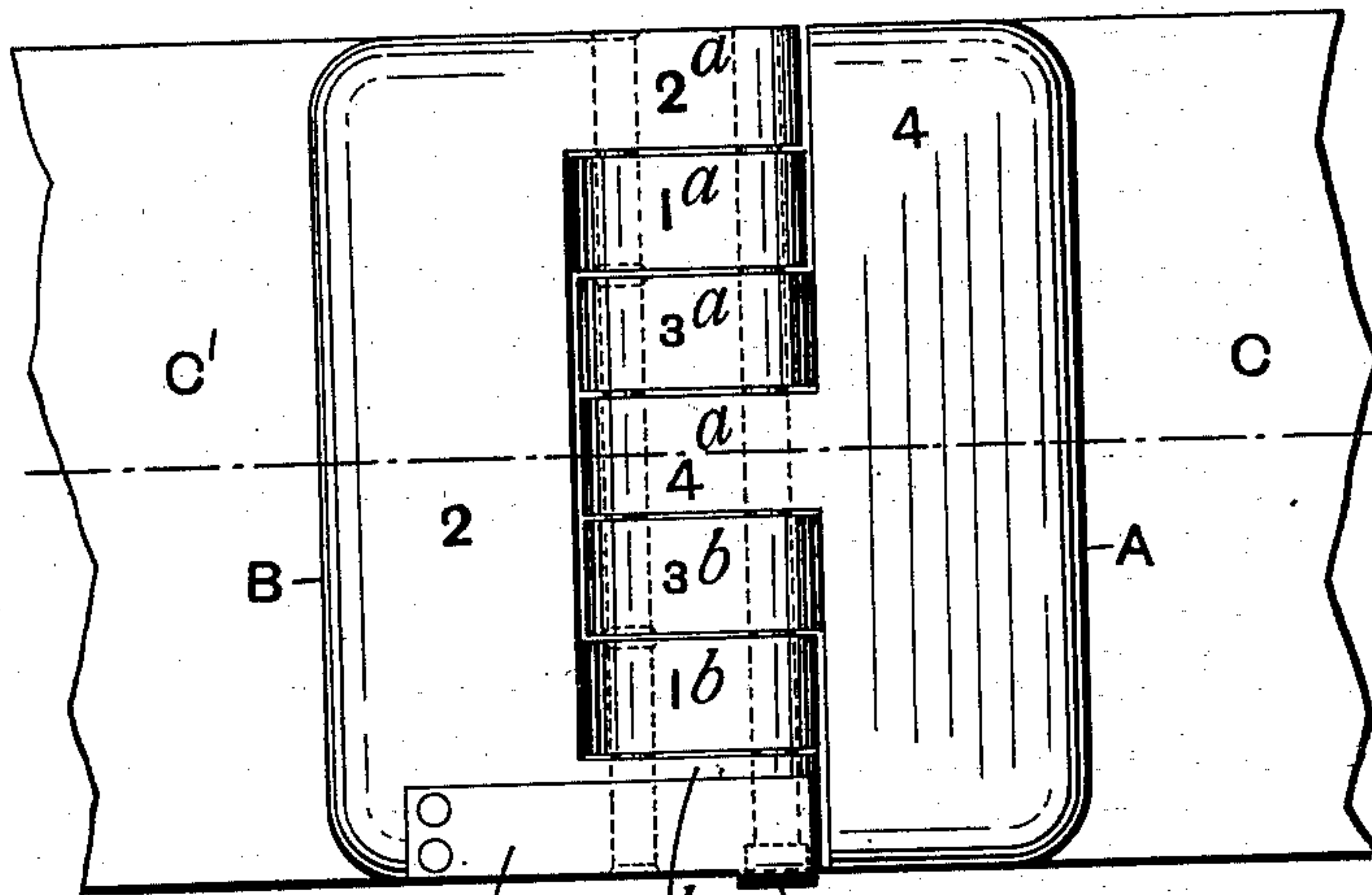


FIG. 1.

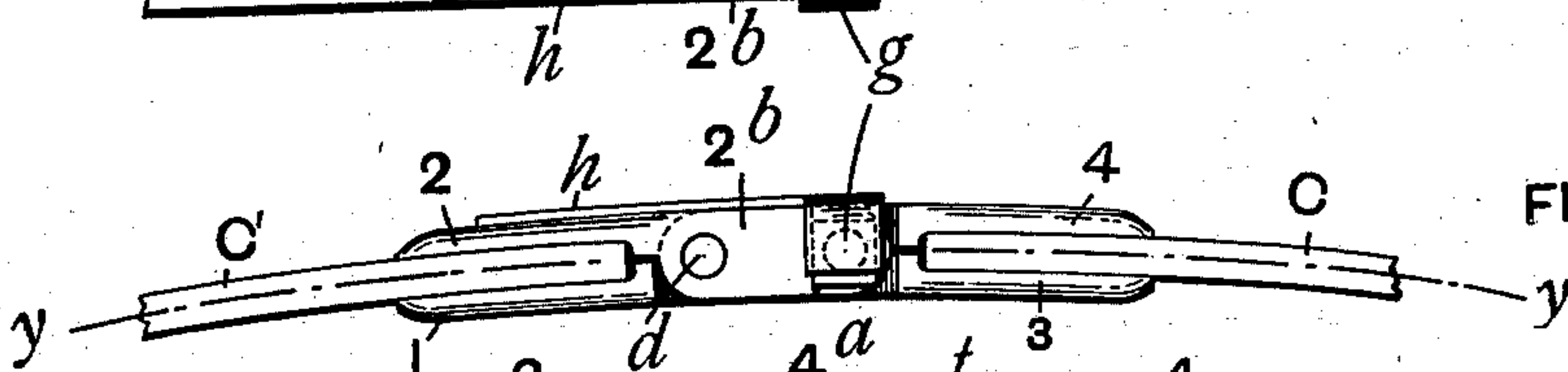


FIG. 2.

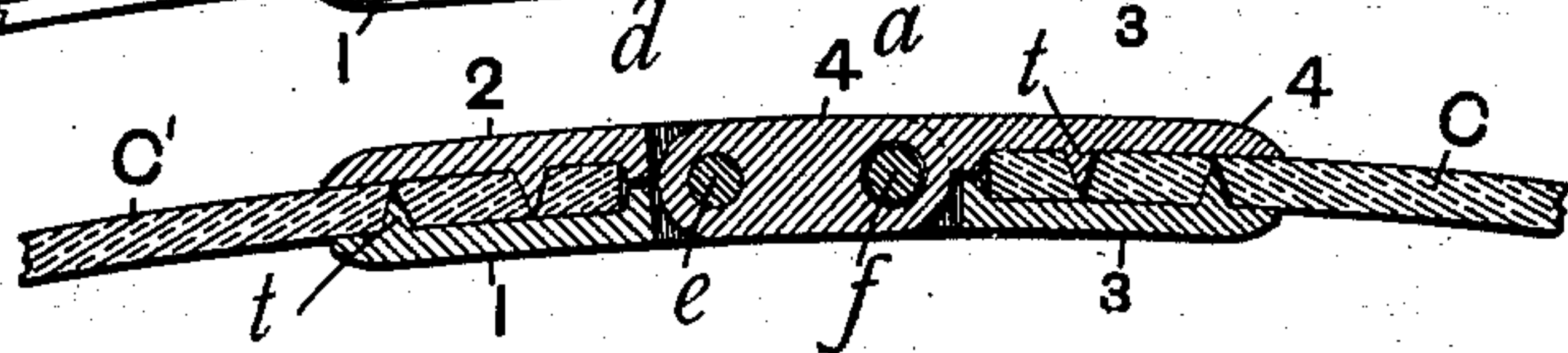


FIG. 3.

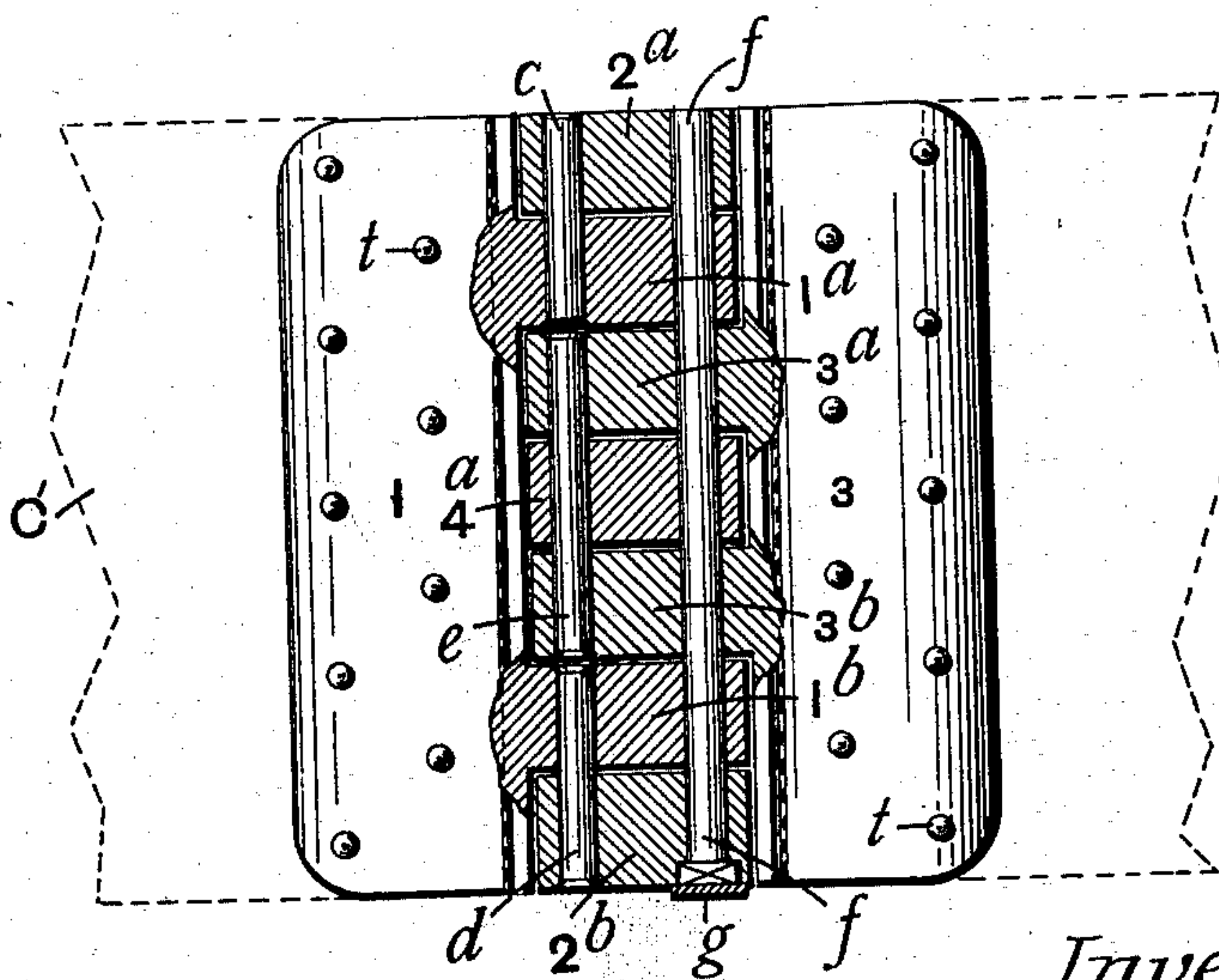


FIG. 4.

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# UNITED STATES PATENT OFFICE.

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## BELT-FASTENER.

SPECIFICATION forming part of Letters Patent No. 654,657, dated July 31, 1900.

Application filed June 2, 1899. Serial No. 719,066. (No model.)

*To all whom it may concern:*

Be it known that I, DICK LITTLEWOOD, a citizen of the British Empire, residing at Glossop, Manchester, in the county of Lancaster, England, have invented certain new and useful Improvements in Belt-Fasteners, of which the following is a full, clear, and exact description.

This invention relates to hinged fasteners for driving-belts; and it has been especially designed with the objects of insuring a firm grip upon the belt ends, of permitting the belt fastened by it to be readily removed or shortened, and of avoiding the use of bolts, nuts, and other parts which can become displaced from the fastener when the belt is in use.

My improved fastener consists of two parts which are capable of being connected together by a removable hinge-pin. Each part is composed of two plates separately hinged together by a pin or pins, so that the two plates may be folded over to embrace one end of the belt and engage it by teeth formed on the inner surfaces of the plates. The holes through which the two plates are pinned together are formed in lugs or extensions from the plates, which are so constructed and arranged that the lugs or extensions from one part fit between those from the other part of the complete fastener. In these lugs or extensions there are bored parallel with the holes which receive the hereinbefore-described pins connecting the plates constituting each part other holes adapted to receive the pin by means of which the two parts are connected together to constitute the complete hinged fastener. The fastener is therefore constructed of two parts, each of which consists of two parallel plates hinged together by a subsidiary pin or by subsidiary pins, the two parts being also hinged together by a main pin parallel with the subsidiary pins. The main hinge-pin thus serves to lock the parallel plates together, as well as to form the center of movement of the fastener.

The accompanying drawings, which will be hereinafter referred to, and in each of the figures of which similar parts are denoted by similar characters, illustrate my invention and will be hereinafter described.

Figure 1 represents a plan of the fastener as applied to the ends of a driving-belt. Fig. 2 shows a side elevation; Fig. 3, a longitudinal section; and Fig. 4, a section along the line *y y*, Fig. 2.

The four separate plates are numbered 1, 2, 3, and 4. The lugs from plate 1 are 1<sup>a</sup> and 1<sup>b</sup>. Those from plate 2 are 2<sup>a</sup> and 2<sup>b</sup>. Those from plate 3 are 3<sup>a</sup> and 3<sup>b</sup>, and that from plate 4 is 4<sup>a</sup>. The plates 1 and 2 are hinged together by the two subsidiary pins *c* and *d*, which respectively pass through the lugs 2<sup>a</sup> and 1<sup>a</sup> and through 1<sup>b</sup> and 2<sup>b</sup>. The plates 3 and 4 are hinged together by the subsidiary pin *e*, which passes through the lugs 3<sup>a</sup>, 4<sup>a</sup>, and 3<sup>b</sup>. The part composed of the plates 1 and 2 is hinged to the part composed of the plates 3 and 4 by means of the main pin *f*, which passes through all the lugs parallel with the subsidiary pins *c*, *d*, and *e*. The two parts are thus able to be moved about *f* as an axis when the fastener passes over a pulley. If the pin *f* be withdrawn, the two parts A and B are separable, and each of them may then be opened for the reception or release of the belt ends C C'. The inner surfaces of the plates are provided with teeth *t t*, which penetrate and securely hold the belt ends, as is indicated by Fig. 3.

It is advantageous to construct the fastener with a curvature of comparatively-large radius, as shown by Figs. 2 and 3, as thereby strains are diminished when the fastener runs over a pulley.

To prevent the pins coming out of the fastener, the outer subsidiary pins *c d* may be headed at their inner ends (or at both ends) and these ends be fitted into corresponding recesses in the sides of the lugs. The pin *e* cannot come out when the fastener is in use; but to keep it in place when the two parts of the fastener are separated the ends of the pin may be compressed into slight conical recesses, as indicated by Fig. 4. The main pin *f* may have at one end a head fitting into a recess or slot in the end lug of the fastener and be retained in place by a flange *g* of the spring *h*, riveted or otherwise secured upon the upper plate 2.

Having now particularly described and ascertained the nature of my said invention and



in what manner the same is to be performed, I declare that what I claim is—

1. A hinged belt-fastener consisting of two parts hinged together by a main pin, each  
5 part consisting of two parallel plates hinged together by a pin parallel with the main hinge-pin, substantially as hereinbefore described.

2. In a hinged belt-fastener, an integral  
10 part consisting of two plates provided with teeth on their contiguous surfaces and having lugs fitted with a pin by which the plates are hinged together, and holes through which

the main hinge-pin of the fastener is passed, substantially as described.

3. A hinged belt-fastener having a main  
15 hinge-pin, and subsidiary coaxial hinge-pins parallel therewith, substantially as described.

In witness whereof I subscribe my signature in presence of two witnesses.

DICK LITTLEWOOD.

Witnesses:

WILLIAM E. HEYS,  
ARTHUR MILLWARD.