No. 873,009. PATENTED DEC. 10, 1907.

F. BAXTER.

BELT FASTENER.

APPLICATION FILED APR. 8, 1907.

Fig. 1.

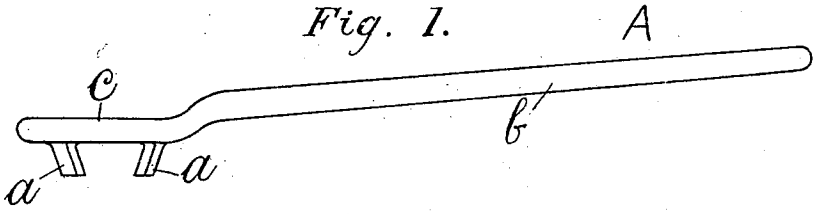


Fig. 2.

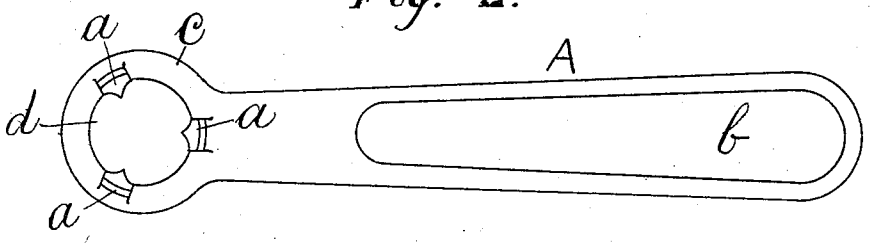


Fig. 3.

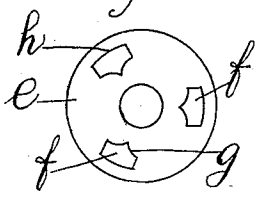


Fig 4.

Fig. 5.

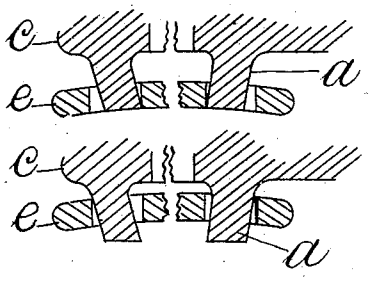


Fig. 6.

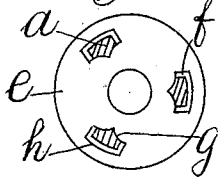


Fig. 7.

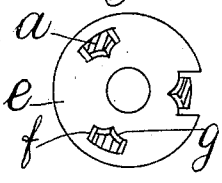
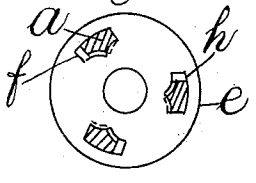


Fig. 8.



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UNITED STATES PATENT OFFICE.

FREDERIC BAXTER, OF MANCHESTER, ENGLAND.

BELT-FASTENER.

No. 873,009. Specification of Letters Patent. Patented Dec. 10, 1907.

Application filed April 8, 1907. Serial No. 367,047.

To all whom it may concern:

Be it known that I, FREDERIC BAXTER, a subject of the King of Great Britain, residing at Todd Street, Corporation Street, Manchester, in the county of Lancaster, England, have invented new and useful Improvements Relating to Belt-Fasteners, of which the following is a specification.

The improvements relate to belt fasteners of the type wherein a nut or equivalent is required to be tightened up or turned in order to secure or release the fastener, and the invention has for its object to enable, in manner as hereinafter described, such tightening or turning to be effected with less tendency of the turning key to slip out of engagement with the said nut.

To effect my improvements, I form or provide the nut aforesaid with two or more slots, gaps or openings therein, for the insertion of key projections. These openings have their inner sides disposed, in plan formation, eccentrically, or at an angle, so that the path of turn of the key projections will intersect such sides.

I employ a key provided with a suitable handle, and having projections to engage with the slots aforesaid. These projections, which may vary in cross sectional form, are preferably of regular dimensions throughout their length, but they project from the body of the key in convergent directions. When these pegs are inserted into the slots described, their extremities may approximately fit the eccentric sides of the slots, but when such pegs are passed deeper into the openings, the convergence of the sides of the pegs allows sufficient play to enable the key to be slightly turned radially, when the extremities of such pegs pass beneath the nut, and are locked against vertical motion.

In the drawing hereto appended, Figure 1. is a side view, and Fig. 2. a reverse plan view of one form of key. Figs. 3. and 4. are a plan and cross section respectively, of a nut suitable for use with such key. Fig. 5. is a sectional illustration of a key head and nut in two positions of engagement, and Figs. 6. 7. and 8. are sectional plans further illustrating the action of the key and nut as herein described.

The teeth or pegs *a*. of the key A. converge or incline from the root or head towards the common center or thereabouts.

b is the handle of the key, and *c* the head, the latter having an opening *d*. to allow for the projecting bolt of the belt fastener.

Nuts or buttons suitable for use with this key are shown at *e*. and are, generally, of similar character to the buttons ordinarily employed with bolt belt fasteners. The slots *f*. are formed to accommodate the special teeth of the keys, their inner sides *g*. being eccentric.

In Fig. 6., and in the upper view of Fig. 5, the extremities of the pegs are assumed to be passing through the slots. In Fig. 7, and in the lower view of Fig. 5. the key is fully inserted, but not yet turned; and in Fig. 8, the key and nut are in complete engagement, for tightening up the fastener.

Referring particularly to Figs. 5. and 6, it will be seen that, in the first position, the inner surfaces of the teeth approximately fit the corresponding eccentric sides of the slots, while a clearance space is presented between the outer surfaces and outer sides. The key cannot turn in this position, but, after further insertion, shown in the succeeding views, the clearance is inside, owing to the inclination of the teeth, and, the outer surfaces and sides being concentric, the key can be turned into the position shown in Fig. 8. This brings certain portions of the inner surfaces beneath the substance of the nut, beyond the slots, and increased pressure on the key further insures this engagement, so that the ordinary tendency to force out the key by the use of exertion in tightening up or releasing, is obviated.

It is not essential for the outer sides *h* of the slots *f*. to be concentric, provided that they do not interfere with the freedom of the pegs *a* to turn. For example, such sides *h*. may be omitted, as illustrated in Fig. 7.

I am aware that it has already been pro-

posed to form spanners or wrenches with jaws or openings which have inwardly sloping sides for engagement with beveled sided nuts, and I therefore do not claim such a combination broadly; but

I claim:—

In bolt belt fasteners a nut having slots formed with their innermost sides eccentrically disposed for the purpose and in manner substantially as herein set forth.

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

FREDERIC BAXTER.

Witnesses:

GEORGE FREDERICK GADD,

ARTHUR GADD.