H. T. BETTS.

Carriage-Step.

No. { 1,456. / 32,460. }

Patented June 4, 1861.

Fig: 1.

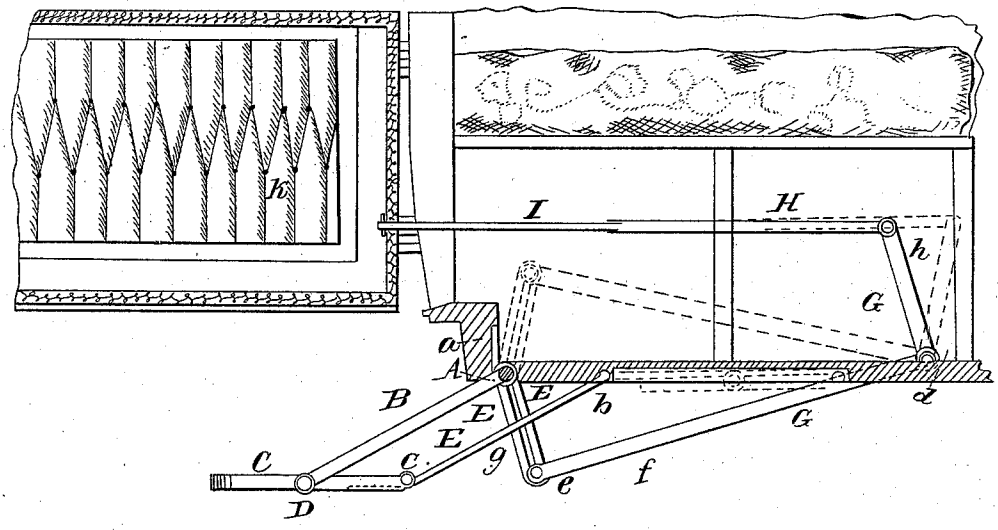
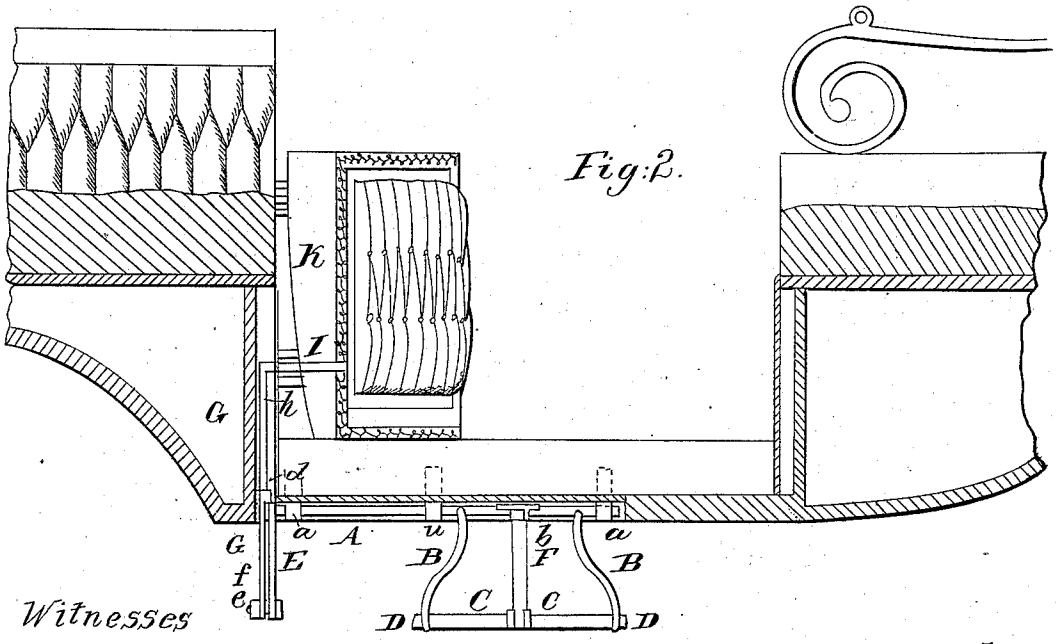


Fig: 2.



Witnesses

Milton Bradley

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UNITED STATES PATENT OFFICE.

HENRY T. BETTS, OF SPRINGFIELD, MASSACHUSETTS.

CARRIAGE-STEP.

Specification of Letters Patent No. 32,460, dated June 4, 1861.

To all whom it may concern:

Be it known that I, HENRY T. BETTS, of Springfield, in the county of Hampden and Commonwealth of Massachusetts, have invented a new and Improved Concealed Carriage-Step; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification.

It is the object of my invention to produce a step for hacks or barouches so arranged that when the carriage is running the step shall be held up under the bottom of the carriage out of the way of the mud thrown from the wheels, but which shall be thrown out into place and held permanently, on opening the carriage door.

When a step is placed permanently on the side of the carriage as at present practiced, it is generally considered necessary on good carriages to attach to the door a covering which on closing the door comes over the step and covers it up thereby keeping off the mud. But this covering takes all the mud that would otherwise fall on to the step, and therefore is anything but an ornament to the carriage in wet weather, notwithstanding the ornamentation that is usually bestowed on it. Now by my arrangement the step is turned under the carriage keeping the top of the step uppermost all the time, and bringing it up against the bottom of the carriage so that it is impossible for any mud to get on to it, and at the same time all appearance of a step is removed, thereby avoiding one great annoyance to carriage drivers, that is, the practice very natural to a person, to rest one foot on any projecting object while conversing with any one in a carriage or while standing near it. Of course the usual covering to the step, being ornamented it would soon get very much marred.

In the drawings making a part of this specification, Figure 1 is a partial vertical cross section of the body of a carriage, with the door open and the step thrown out into place. Fig. 2 is a partial longitudinal vertical section of the same.

Like letters of reference indicate the same parts in each of the figures.

A, is a shaft having securely attached to it two arms B, B, which support the step C, by two pivots D, D, on opposite sides of the step. To one end of this shaft A, is attached the slotted arm E.

a, *a*, *a*, are bearings supporting the shaft A, under the body of the carriage.

F, is a brace hinged at *b*, to a piece attached to the body of the carriage, and at *c*, to the edge of the step next to the carriage.

G, is a bent lever, pivoted at *d*.

e, is a stud inserted into the end of the long arm *f*, of lever G, which stud fits easily into the slot *g*, in the arm E.

H, is a rod attached by a hinge joint to the top of the short arm *h*, of the lever G, and connected by another rod I, to the door K, of the carriage near the hinge.

Now the operation is as follows: The door being closed, the several parts assume the positions shown by the dotted lines in Fig. 1. As the door is opened the rods I, and H, pull on the top of the arm *h*, of lever G, and throw the end *e*, of the arm *f*, down, thereby operating on the slotted arm E, to rotate the shaft A, and therefore to throw the step out into a position for use as shown in drawings. Now one of the principal results sought for in arranging such a step is to have it perfectly permanent and not liable to be tripped by a slight movement of the door on its hinges, as that would produce very unpleasant results oftentimes, and that I claim to have effected in a very perfect manner. For whenever the step is thrown down or up the slotted arm E, is nearly or exactly at right angles to the arm *f*, of lever G, so that any force applied to the step and thence to the arm E, has no effect to move the lever, which therefore acts as a sure stop, and one that can not be easily tripped.

I have found by trial that in actual use the door can be moved through a considerable arc, before any weight on the step would overcome the friction of the stud in the slot so as to move the lever and therefore trip

the step. It is therefore evident that there is never any strain on the door except the small amount necessary to move the step.

Now having fully described the construction and operation of my invention what I claim as new and desire to secure by Letters Patent is—

The bent lever G, and slotted arm E, or their mechanical equivalents when operating substantially in the manner and for the purpose herein set forth.

HENRY T. BETTS.

Witnesses:
MILTON BRADLEY,
CHAS. E. POTTER.