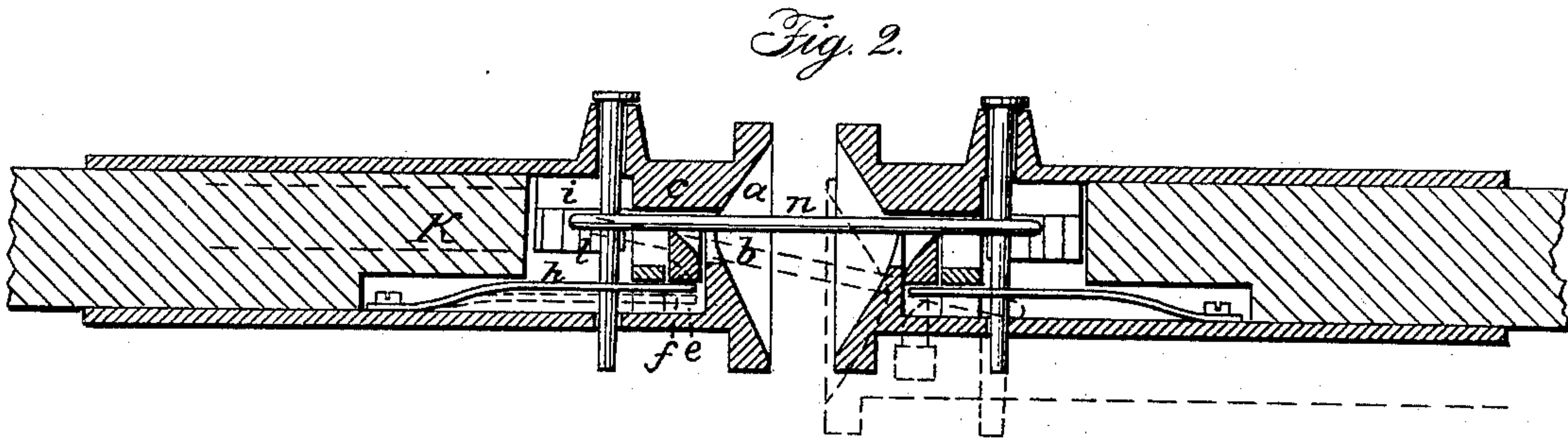
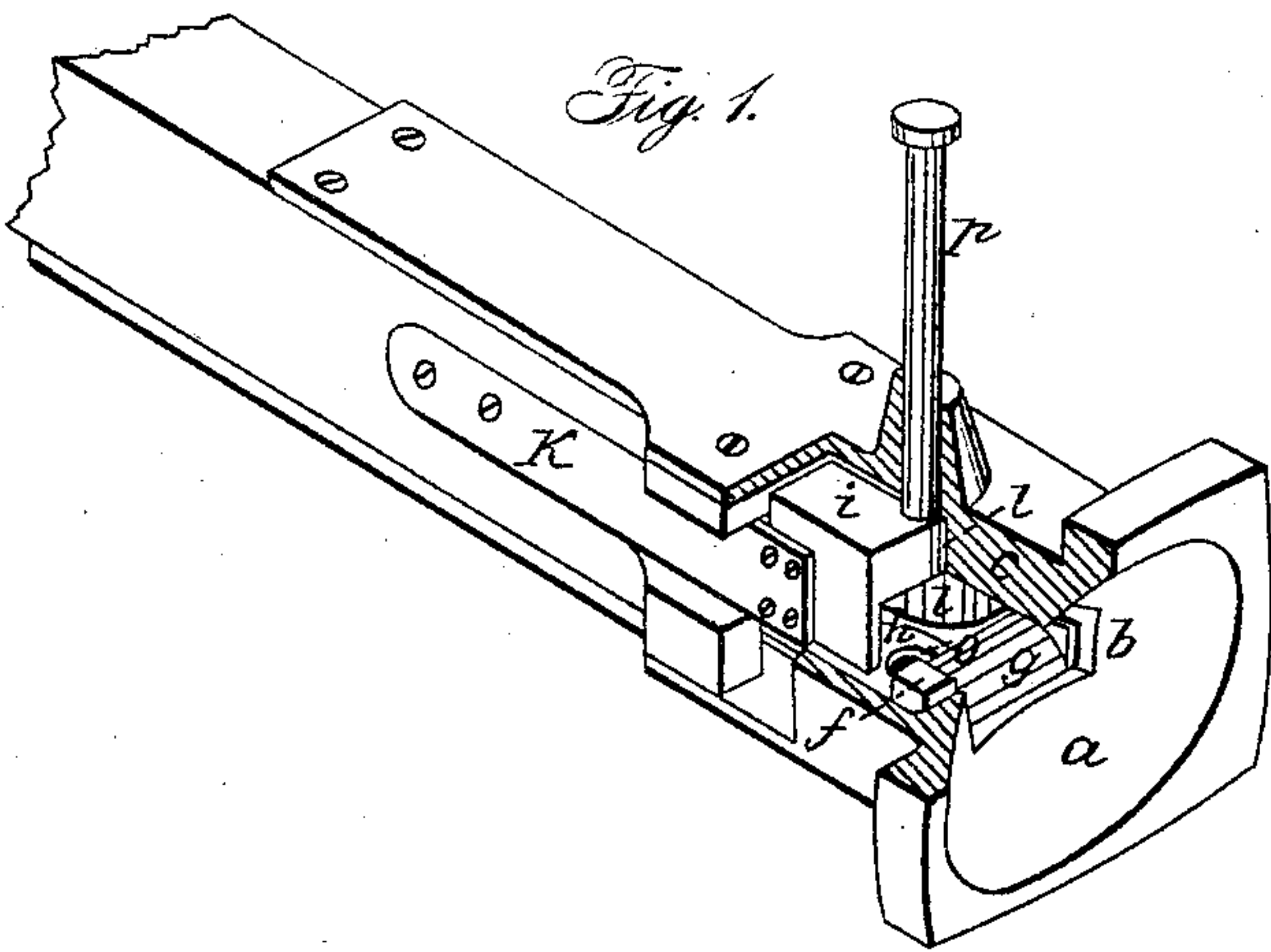


C. E. STEVENS.
Car Coupling.

No. 23,321.

Patented Mar. 22. 1859.



UNITED STATES PATENT OFFICE.

CHAS. E. STEVENS, OF NEW YORK, N. Y.

CAR-COUPLER.

Specification of Letters Patent No. 23,321, dated March 22, 1859.

To all whom it may concern:

Be it known that I, CHARLES E. STEVENS, of New York, county of New York, and State of New York, have invented certain
5 new and useful Improvements in Couplings for Railroad-Cars; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being made to the annexed drawing, making a
10 part of this specification, in which—

Figure 1 is a perspective view, and Fig. 2 a longitudinal section and similar letters indicate similar parts throughout.

My invention consists in such construction
15 of the "bumpers" or boxes by which the self coupling of one railway car with another is effected, that thereby I am enabled, firstly to use in all cases a straight link for coupling, even though the bumpers of the
20 two cars may be on levels differing considerably from each other; secondly to use bumpers of precisely the same construction on both the ends to be coupled; and thirdly to keep the coupling link constantly pre-
25 sented, while the car is detached, in a level and laterally direct position, so that it may enter the bumper of the approaching car into which it shall, by the act of entering, be fastened automatically, although the
30 bumpers may be on different levels.

It is known that even if cars are all built after one plan they cannot be kept always at the same height from the ground, because the springs settle more or less, both from age
35 and from the different loads carried, wherefore a straight link is at some times employed to couple them, while in a majority of cases a curved one is required, and it cannot always be known until the cars come to-
40 gether which of these will be necessary. It is also obviously very desirable that the bumpers should be all alike in construction, and that the cars should become by the act of contact fastened together. Many devices
45 have been employed for effecting this self fastening, but they have all been capable either of operating only when the bumpers were on the same general level, or they have required that differing constructions should
50 be always found on the respective ends it was desired to connect. My invention is therefore unlike these as will appear from the following description.

The general external appearance of my
55 bumper is much as in those of the ordinary forms, having a face plate of iron or other

suitable metal attached to the timber of the car as usual, and made dishing toward the aperture in the center, as is common to many kinds and shown in the drawings at *a*. The
60 aperture for the link to enter I make in the form of an oblong square (*b*). This is of sufficient width to afford the requisite lateral play necessary when turning curves, and it is of considerably greater height than would
65 merely admit the link, being closed—from the bottom to that precise height by a device which will be explained hereinafter. This aperture is continued back for some
70 little distance as shown at *c*; its roof and the upper part of the side walls are thus left unbroken, but just within the mouth, and along the lower side or floor is a slot run-
75 ning entirely across and extending beyond the opening for a short distance at each end into the side walls and also rising therein to such distance from the top as will merely
80 suffice to admit the link flatwise between the piece which is to play in the slot and the roof *c*. The slot is cut downward nearly through the metal of the bumper, as seen at
85 *e*, Fig. 2 and it has a piece of metal (*f*) fitted into it so as to have vertical motion freely the parts of the slot extending beyond the sides serving as guides for it to play in.
90 So much of the face of this piece as is seen through the aperture is chamfered back as shown at *g*, Fig. 1 and the piece itself is supported upon a strong spring (*h*) extending
95 backward and by which it is kept pressing upward to the extent permitted by the height of the guide grooves in the sides. This movable piece is for the purpose of closing the
100 aperture so that the link resting upon the upper part of it may be held on a level and yet may be capable of yielding whenever the link is deflected vertically from that position. Behind the aperture as thus shown,
105 the cavity is considerably enlarged, and here are placed side by side two blocks of metal (*i*) each of which is affixed to the wood work supporting the bumper by a spring (*k*) in
110 such manner that the two blocks may, when not pressed apart, touch each other along their central line as shown in Fig. 1 for a purpose to be hereinafter described but may also have lateral motion by the deflection of those springs, to enable them to be spread apart when required. That portion of the inner surface of each of these blocks which is below the level of the roof *c*, of the aperture is cut away to leave a space between, the

sum of the parts so cut away being so much less than the width of the link which is to be used for coupling; that when it is introduced flatwise between the blocks it shall cause them to recede from each other to such distance as will allow the bolt *p* (seen in Fig. 1 resting upon the closed blocks) to drop between. The forward ends of each are sloped still further as seen at *l*, so that the opening will there be nearly as wide as that of the aperture *b*.

The general level of the roof *c* and that of the upper part of the blocks *i* or that at which they come in contact with each other is the same, thus forming a continuation of the top and sides of the aperture *b*, though of somewhat diminished width. Immediately over the forward part of the central line between the blocks *i* a hole is drilled through the metal of the bumper to admit the usual bolt for coupling. The metal is here thickened up, as shown, to serve as a guide for the bolt *p*, which, when inserted therein will rest upon the blocks *i* as seen in Fig. 1, until those shall be spread apart, when it will drop by gravity into the position shown in Fig. 2, there being a hole *o*, Fig. 1, made in the spring *h* for it to pass freely through.

A straight link of common construction is used to connect the cars and the operation will be as follows: The bolt being placed in position as in Fig. 1, the straight link *n* Fig. 2 is to be pushed in over the top of the piece *f*, which is held up by its spring *h*, to such height that it sustains the link against the roof *c*, of the aperture. As the link is pushed back, its entering end causes the blocks *i* to be pressed apart, when the bolt drops between, securing the link. The back end of that rests up against the under side of the upper part of the blocks *i*; the piece *f* holds the link up against the roof *c*, of the aperture *b*, and thus the link is presented on a level to an approaching car, and is also held laterally in a direction at a right angle to the face of the bumper by means of the blocks *i*. If the cars are of the same height it enters the bumper of that, which is to be of precisely the same construction in the same manner as it was placed by hand in that just described. If however the bumper it is to enter be lower as shown in dotted lines in Fig. 2 the end of the link is directed downward by the dishing face, the supporting piece *f*, upon which the link rests yielding to the action. The end of the link then strikes the chamfered part of the

supporting piece in the approaching bumper thereby throwing that down and permitting the link to enter between the blocks *i*, when the bolt drops as before explained and the cars are coupled.

If the cars to be coupled are approaching each other on a curve a slight deflection of the link will be necessary laterally and this is permitted by the yielding of the blocks upon their supporting springs *h* the advancing end of the link being still directed to the aperture by the dishing piece. If the bumper presenting the link be the lower one the end of the link is directed upward by the dishing face when the chamfered part of *f* causes that to yield and admit the link to open the blocks as before stated.

I am aware that the bolt has been held up by a sliding piece kept forward under the hole by a spring until pushed back by the entering link, but this sliding piece has been in combination with an unyielding support at the mouth of the bumper and therefore to operate to the best advantage requires a bent link to attach cars of different heights. I am also aware that a sliding piece similarly combined has been made to hold the link at any desired inclination necessary in order that it may enter the mouth of the bumper of an advancing car which is of a different level, but this requires that an attendant shall place the link when the car has approached so near that he can judge of the proper inclination to be given. These are therefore entirely unlike mine wherein the link is always presented on a level, and is changed from that position when necessary merely by the action of the car to be coupled. It is evident that if any of the springs become broken the bumper can still be used as an ordinary connection.

What I claim as my invention and desire to secure by Letters Patent is—

The combination of the yielding support within the mouth of the aperture of railway car boxes with one or more blocks inside, and the annular flange outside the said boxes, when said parts are arranged in relation to each other substantially as described, to effect the coupling of the boxes automatically, by the action of straight links and locking bolts, in the manner specified herein and for the purposes set forth.

CHAS. E. STEVENS.

Witnesses:

J. P. PIRSSON,
S. H. MAYNARD.