(No Model.) 3 Sheets—Sheet 1.

J. E. H. CHAPMAN.

CAR COUPLING.

No. 264,929. Patented Sept. 26, 1882.

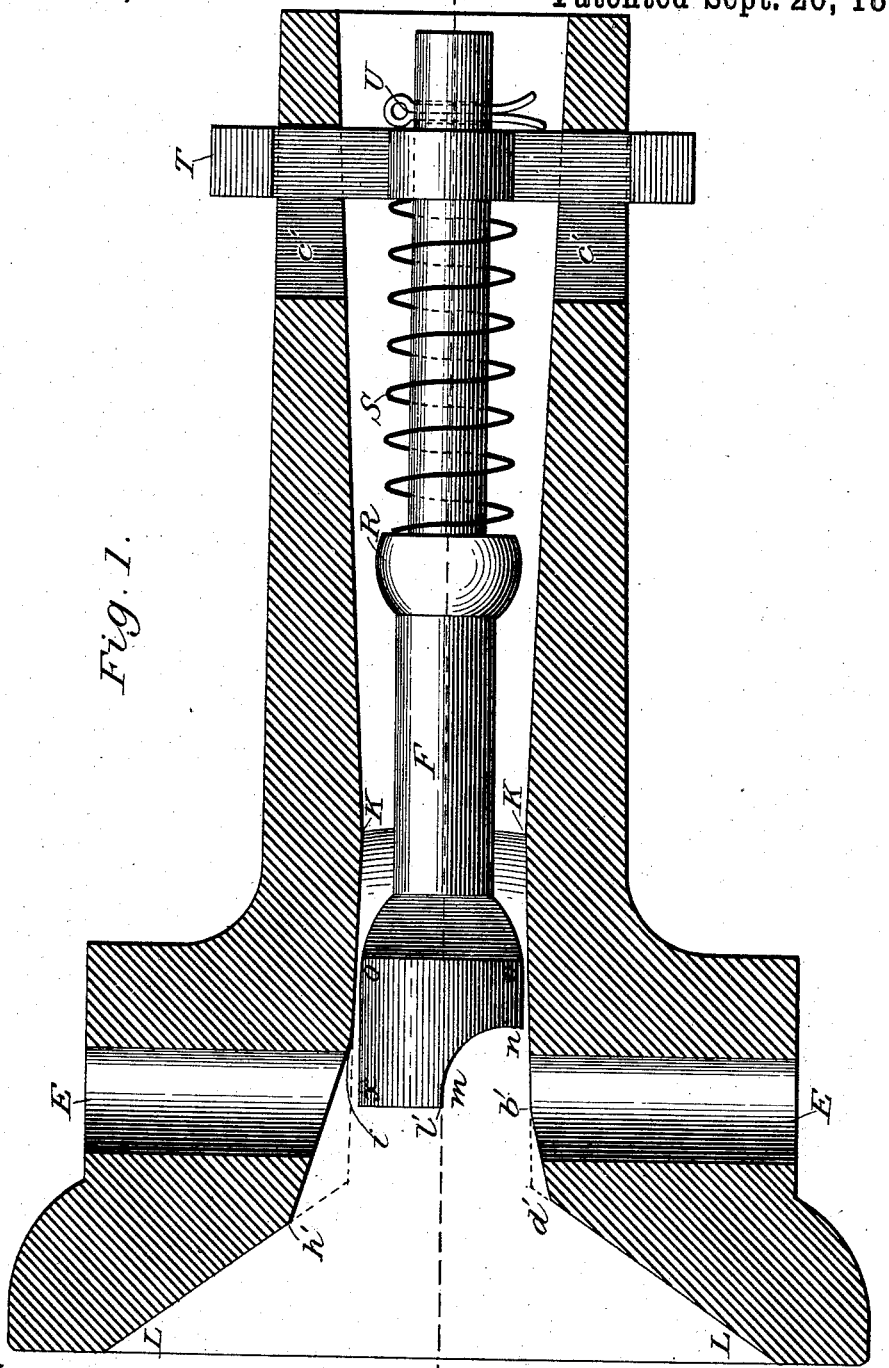

Fig. 1.

Witnesses:
James Robert Cadey
Augustus Henry Sheppard

Inventor:
John Edward Hourd Chapman

(No Model.) 3 Sheets—Sheet 2.

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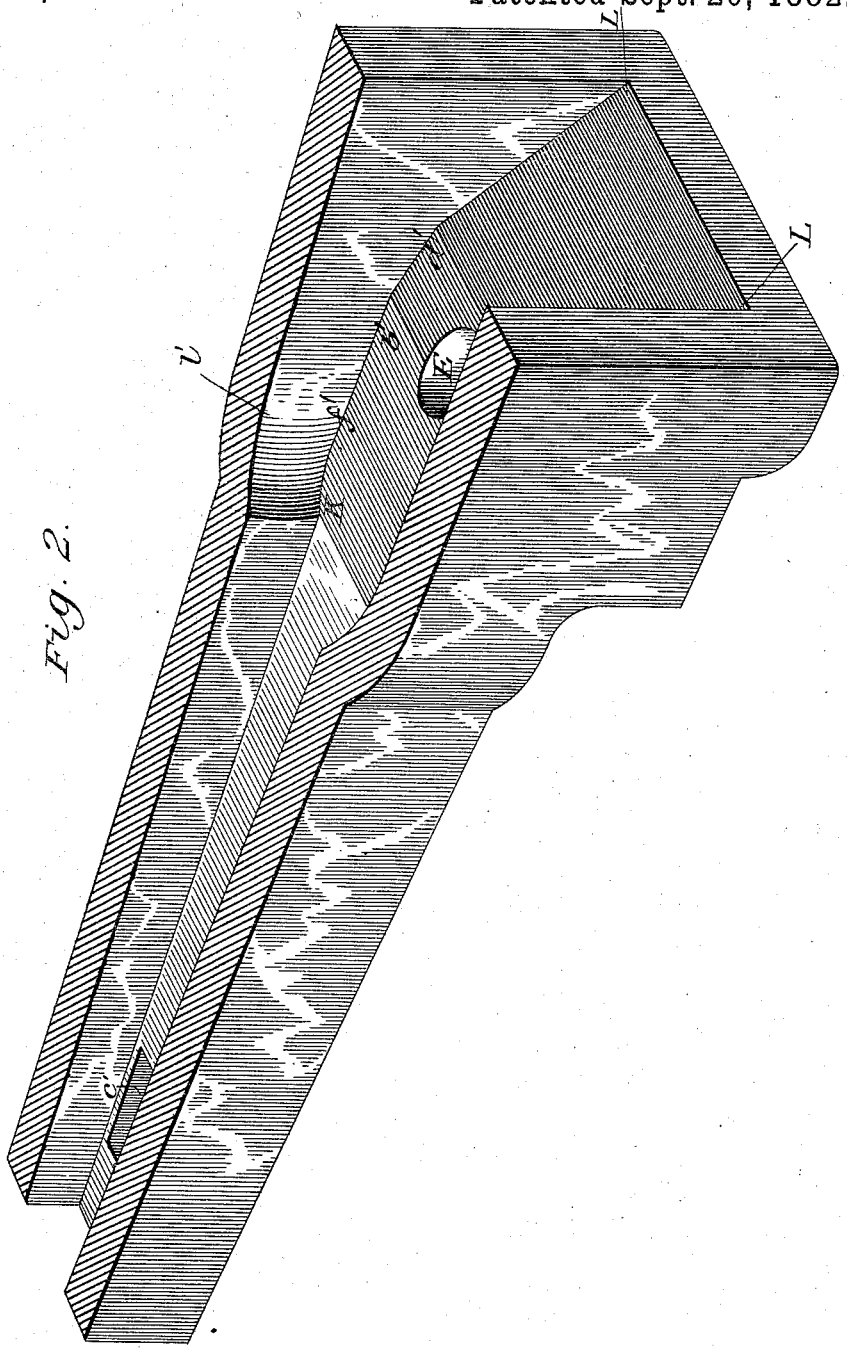

Fig. 2.

Witnesses:
James Robert Cade
Augustus Henry Sheppard

Inventor.
John Edward Howd Chapman

(No Model.) 3 Sheets—Sheet 3.

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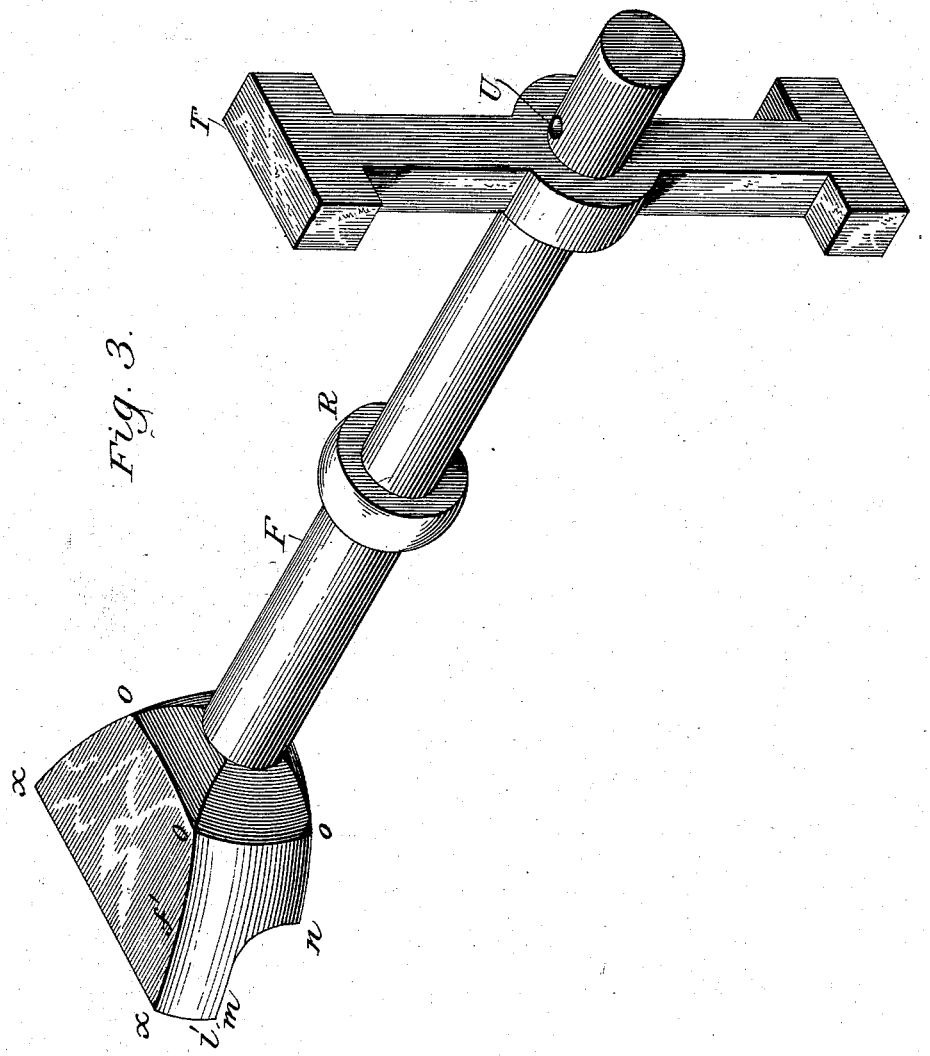

Fig. 3.

Witnesses:
James Robert Cade
Augustus Kenny Shepherd

Inventor:
John Edward Howd Chapman

UNITED STATES PATENT OFFICE.

JOHN E. H. CHAPMAN, OF HARRISBURG, TEXAS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 264,929, dated September 26, 1882.

Application filed April 25, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN EDWARD HOWD CHAPMAN, residing at Harrisburg, county of Harris, and State of Texas, have invented a new and Improved Self-Coupler for Freight-Cars, of which the following is the specification.

My invention relates to improvements in freight-car couplers in which the cars are coupled when brought together without the aid or assistance of any one. It obviates the necessity of any one going between the cars while being coupled. I attain the object of the invention by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section of the half of the coupler with pin-catcher, spring, stop, and safety-pin. Fig. 2 is a perspective view of the lower half of the coupler, showing the three beveled planes, also the horizontal and perpendicular circles, throat, slot, and size in width and sides. Fig. 3 is a perspective view of the pin-catcher partly turned, so as to show the top of pin-catcher and partial view of the side and stop, without the spring or safety pin, all of which will be cast-iron except the spring, stop, and safety-pin, the stop to be of wrought-iron.

Similar letters refer to similar parts throughout the several views.

In Fig. 1, B represents the base line or face of the coupler. C represents the center-line of the entire coupler. The line B is thirteen (13) inches. The line C is twenty (20) inches. L and L are five (5) inches on either side of the center-line on the line B. D and D are one and three-eighths ($1\frac{3}{8}$) inch on either side of the line C, and two and one-half ($2\frac{1}{2}$) inches from the line B from L L to D D gives the first beveled plane for the upper and lower half of the coupler. On the beveled plane L D on the lower half of the coupler commences the second beveled plane one and eleven-sixteenths ($1\frac{11}{16}$) inch from the line C, and two and one-fourth ($2\frac{1}{4}$) inches from the line B marked d' to a point, b', three and five-eighths ($3\frac{5}{8}$) inches from the line B on the plane D K one and three-eighths ($1\frac{3}{8}$) inch from the line C. On the beveled plane L D, on the upper half of the coupler, commences the second beveled plane of the upper half of the coupler at a point, h', two (2) inches from the line B and two and one-eighth ($2\frac{1}{8}$) inches from the line C to a point, i, on the plane D K, four and three-fourths ($4\frac{3}{4}$) inches from the line B, and one and three-eighths ($1\frac{3}{8}$) inch from the line C. K and K are seven and three-fourths ($7\frac{3}{4}$) inches from the line B, and one and one-fourth ($1\frac{1}{4}$) inch on either side of the line C. The points i K of the upper half and b' K of the lower half of the coupler form the third beveled plane of the coupler. Draw a line from K on either side of the line C to the figures 10 10 on either side of the line C twenty (20) inches from the line B, and one and three-fourths ($1\frac{3}{4}$) inch on either side of the line C. A and A are on the line B six and one-half ($6\frac{1}{2}$) inches from the line C, the corners of which are rounded off to one-eighth ($\frac{1}{8}$) of an inch on either side. Place your compass on the line B three and one-half ($3\frac{1}{2}$) inches on either side of the line C at I of three and one-eighth ($3\frac{1}{8}$) inches radius to a point, H, one inch from the line B, parallel with the line C, and scribe a circle to a point, G, five and three-eighths ($5\frac{3}{8}$) inches from the line C and two and one-half ($2\frac{1}{2}$) inches from the line B. Then from G, on either side of the line C, to J, six (6) inches from the line B and five and three-eighths ($5\frac{3}{8}$) inches from the line C, connect these points with a straight line. Draw a line from J to P four (4) inches on either side of the line C, and six (6) inches from the line B. Scribe a circle from P to V two and three-fourths ($2\frac{3}{4}$) inches on either side of the line C and seven (7) inches from the line B, with compass at one and one-fourth ($1\frac{1}{4}$) inch radius, using the concave side of circle. Then draw a line from V to W two and five-eighths ($2\frac{5}{8}$) inches on either side of the line C and twenty (20) inches from the line B. This part of the coupler may be altered to suit the convenience of the person making the pattern for the coupler, and the stop to suit in length, according to the manner in which the coupler is intended to be fastened, either by a pin or yoke-bar to the car, from the points from V to W and K to 10, with this exception, that it or the inside must not be made smaller than three and one-fourth ($3\frac{1}{4}$) inches at the point c'; a slot, c', two and one-half ($2\frac{1}{2}$) inches long on the lower and upper half of coupler, the back part of which is seventeen and three-fourths ($17\frac{3}{4}$) inches from the line B, one and three-eighths ($1\frac{3}{8}$) inch broad in the cen-

ter of the upper and lower half of coupler. F represents the pin-catcher complete, with spring, stop, and safety-pin. It is two and one-half ($2\frac{1}{2}$) inches in depth by four and one-half ($4\frac{1}{2}$) inches in width, sixteen (16) inches in length, described by x on the upper corner and M at a point one and one-fourth ($1\frac{1}{4}$) inch from x, called the base-line of pin-catcher. C, the center-line. From M to a point, N, one and one-eighth ($1\frac{1}{8}$) of an inch from a line drawn across the piece in the direction of the line x M, take out the part scribed by a circle of one (1) inch radius from a point one (1) inch from the line C, and one-fourth ($\frac{1}{4}$) of an inch from line x M drawn across the piece. The point N being one and one-fourth ($1\frac{1}{4}$) inch from the line C, draw a line from x to a point two (2) inches from the line x M marked O, one and one-fourth ($1\frac{1}{4}$) inch from the line C. From the point N draw a line seven-eighths ($\frac{7}{8}$) of an inch to a point two (2) inches from base-line and one and one-fourth ($1\frac{1}{4}$) inch from the line C marked O. From the points O, on either side of the line C, draw a circle of one and three-fourths ($1\frac{3}{4}$) inch radius to a point, a', three (3) inches from the base-line x M, and three-fourths ($\frac{3}{4}$) of an inch on either side of the line C, using the convex side of the circle. From a', on either side of the line C, draw a line to a point, Q, on either side of the line C, three-fourths ($\frac{3}{4}$) of an inch from the line C, seven and one-fourth ($7\frac{1}{4}$) inches from the base-line x M. From Q, on either side of the line C, scribe a circle of one (1) inch radius to a point, R, on either side of the line C one (1) inch, and one (1) inch from Q, using the convex side of the circle, making a shoulder for spring. The points or space between a' and Q should be round from the shoulder, five-eighths ($\frac{5}{8}$) of an inch on either side of the line C to a point seven and one-half ($7\frac{1}{2}$) inches from shoulder of the same size throughout being round, one (1) inch from the end of which drill a hole through the perpendicular way seven-sixteenths ($\frac{7}{16}$) of an inch diameter for a No. 42 cotter-key for a safety-pin. E represents the hole for the coupling-pin, one and five-eighths ($1\frac{5}{8}$) inch in diameter, the center of which is three and three-fourths ($3\frac{3}{4}$) inches from the base-line or B. Y represents the sides described in Fig. 2. The spring S is made of one-eighth ($\frac{1}{8}$) of an inch spring steel wire, having ten (10) coils in five (5) inches. The spring must be six and one-half ($6\frac{1}{2}$) inches long, the inside measuring one and one-half ($1\frac{1}{2}$) inch. The stop 3, or rather the stop T, is described in Fig. 3.

In Fig. 2, B and B represent the base-line, as in Fig. 1. A and A represent the outside measure or points, as in Fig. 1. The width of the coupler at A, or from A to A, is nine (9) inches, and from L to L six (6) inches, inside measure. From the point f', five and seven-eighths ($5\frac{7}{8}$) inches from the line B, two and one-fourth ($2\frac{1}{4}$) inches from the line C on either side, commences the circle of the perpendicular to l', six and seven-eighths ($6\frac{7}{8}$) inches from the line B; also, the circle of the horizontal commences at f'. The circle of the perpendicular has a radius of one and five-eighths ($1\frac{5}{8}$) of an inch. The circle of the horizontal has a radius of two and three-eighths ($2\frac{3}{8}$) inches to a point six and seven-eighths ($6\frac{7}{8}$) inches from the line B and one and one-fourth ($1\frac{1}{4}$) inch on either side of the line C on the plane of b' K; also, the circle of the horizontal commences at l', this being the middle of the coupler, with a radius of two and three-eighths ($2\frac{3}{8}$) of an inch to a point seven and three-fourths ($7\frac{3}{4}$) inches from the line B, and one and one-fourth ($1\frac{1}{4}$) inch on either side of the line C, forming a throat, Z. The throat must be one and one-fourth ($1\frac{1}{4}$) inch in length. E represents the hole for coupling-pin described in Fig. 1. Y represents the sides described by the beveled planes L, d', b', and K on the lower half of coupler, and L h' i K, Fig. 1, for the upper part of coupler. From the points A, on either side of the coupler, draw a line to a point, V, seven (7) inches from the line B and three and one-fourth ($3\frac{1}{4}$) inches on either side of the line C, making the coupler at this point five and one-half by six and one-half, outside measure, from the throat Z to 10 and V to W. c' is the slot in lower half of the coupler.

In Fig. 3, x and M, as in Fig. 1, are the base-line of pin-catcher. The circle of the perpendicular commences at x; also, the circle of the horizontal, corresponding with the circles in Fig. 2, f and L. The circle of the horizontal extends to a point within one-fourth ($\frac{1}{4}$) of an inch on either side of the line C, with a radius of two and three-eighths ($2\frac{3}{8}$) inches. On the upper and lower sides the circle of the perpendicular must correspond with each other. At a point one (1) inch from x commences the circle of the horizontal, it being the middle of the pin-catcher, with a radius of two and three-eighths ($2\frac{3}{8}$) inches, corresponding with the horizontal circle commencing at l' in Fig. 2. This circle includes the circle from N to O, being one-fourth ($\frac{1}{4}$) inch on either side of the line C and two (2) inches from the line x M. From the points O, at two (2) inches from the line x M on either side of the line C, being round at this point, scribe the circle to a', as in Fig. 1, the other points being described in Fig. 1. The stop T is a double T-head bar of one (1) inch square, wrought-iron, swelled in the middle to a size not exceeding two and three-eighths ($2\frac{3}{8}$) inches in width, a hole through the center of flat side of one and one-half ($1\frac{1}{2}$) inch diameter for the pin-catcher to slide in. The length between the heads is five and one-half ($5\frac{1}{2}$) inches. The double T-heads should extend one-half ($\frac{1}{2}$) inch over the bar in the direction of the swelled side, so that when the stop is inserted in the coupler and turned it cannot come out. In other words, the pin-catcher must fit the curved or rounded surfaces of the coupler, one-eighth ($\frac{1}{8}$) of an inch play being left at the top and sides, with the exception of the curved surfaces.

I am aware that prior to my invention a coup-

ler has been invented with a beveled surface similar to the one I have invented from L to D, Fig. 1; but I am not aware that said coupler would couple cars differing in height three and one-half ($3\frac{1}{2}$) inches above or below the center of the coupler containing the link. Neither am I aware that a coupler has been invented having three beveled planes, which are necessary for coupling cars of such difference in height; nor am I aware that a spring pin-catcher was ever invented as set forth in my specification.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. A self-coupler having three bevels or planes, L *d′ b′* K, on the lower half, and three bevels or planes on the upper half, L *h′ i* K, connected with a perpendicularly concave surface, *f′ l′*, also a horizontal concave surface connecting the sides, all substantially as set forth.

2. The combination, in a self-coupler, of the pin-catcher F, which has attached to a coil-spring, S, a double T-head stop, T, a safety-pin, U, and a slot, *c′*, in the body of the coupler, having a convex surface perpendicularly and horizontally corresponding with *f′ l′*, all substantially as described and set forth.

JOHN EDWARD HOWD CHAPMAN.

Witnesses:

JAMES ROBERT CADE,

AUGUSTUS HENRY SHEPPERD.