W. F. GRASSLER.

Car-Coupling.

No. 133,437. Patented Nov. 26, 1872.

Fig. 1.

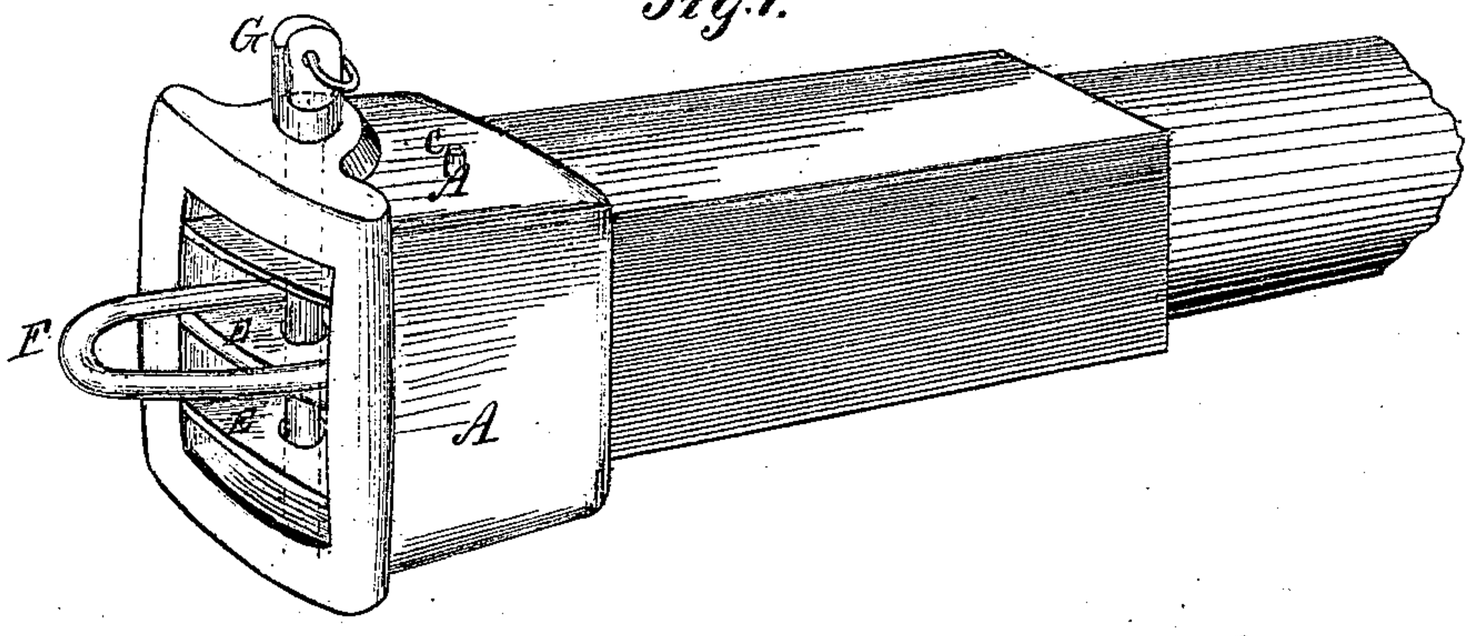


Fig. 2

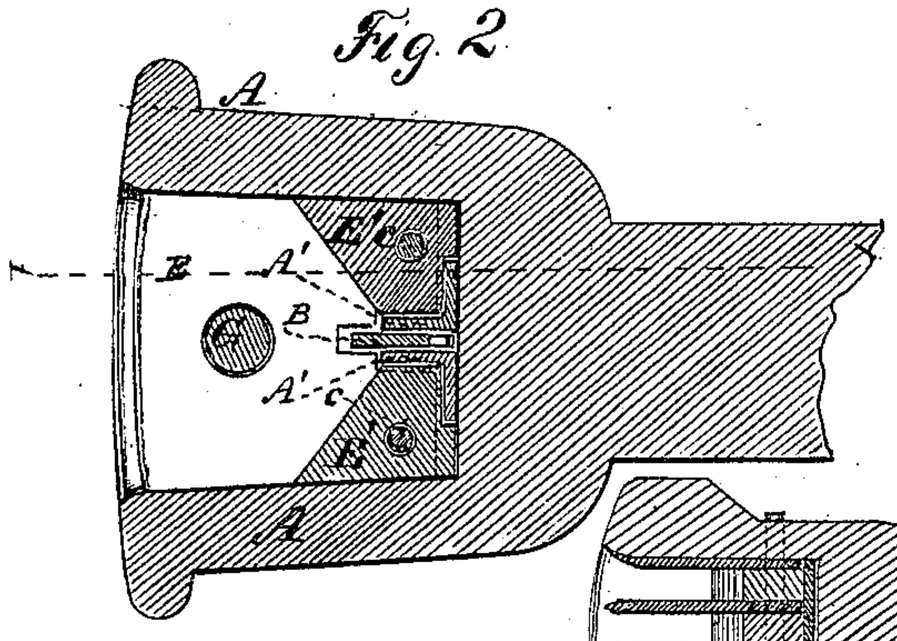


Fig. 3.

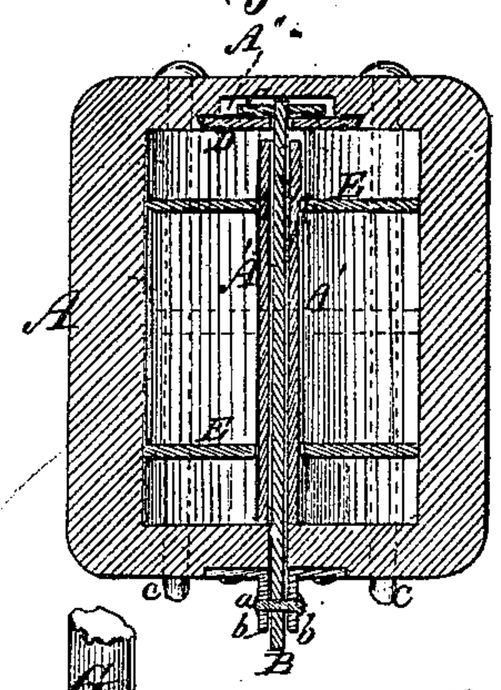


Fig. 8.

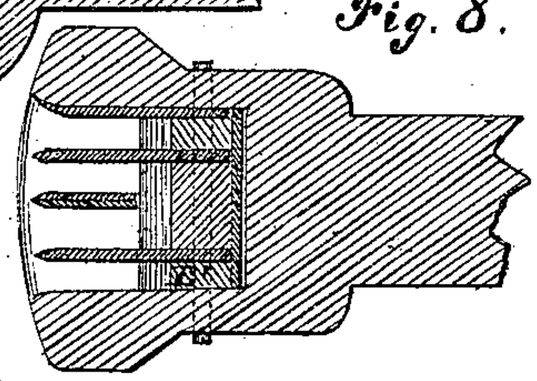


Fig. 4.

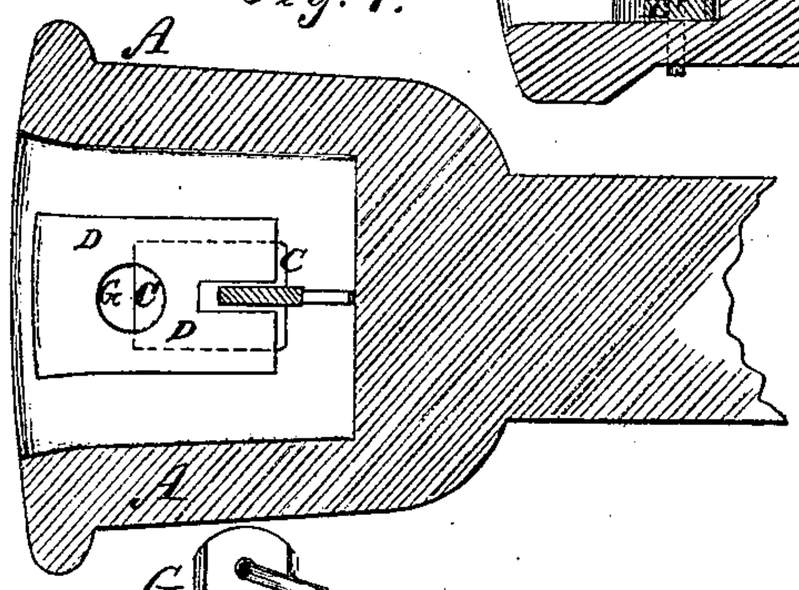


Fig. 5.

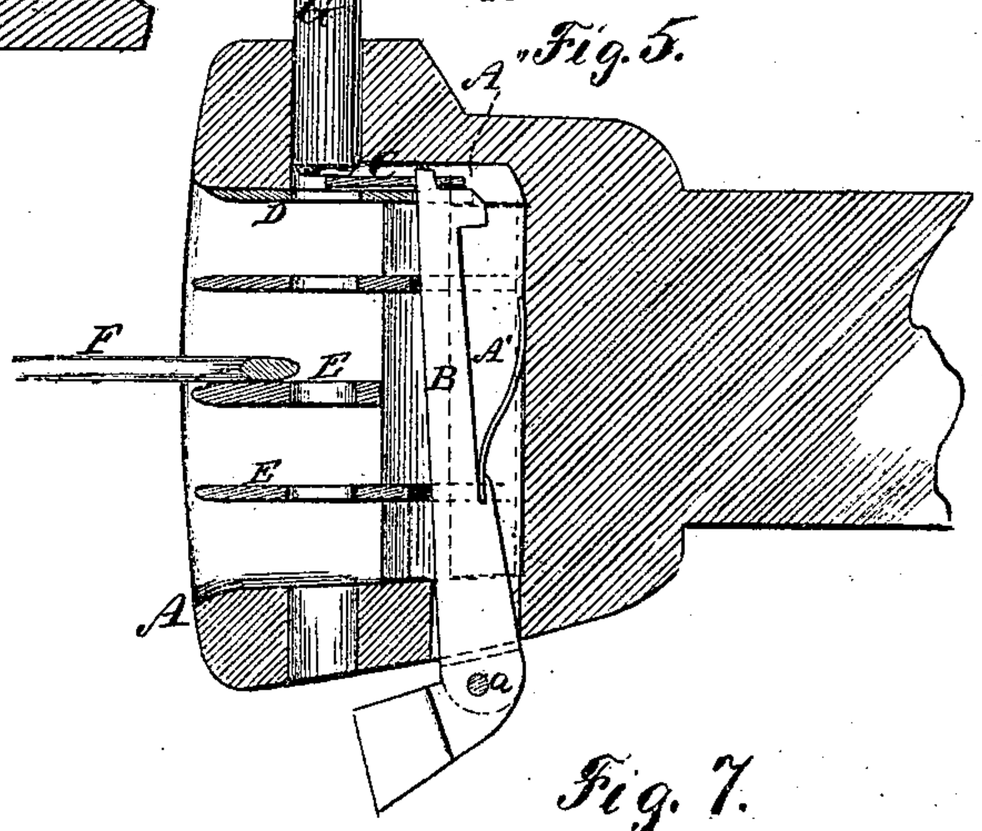


Fig. 6.

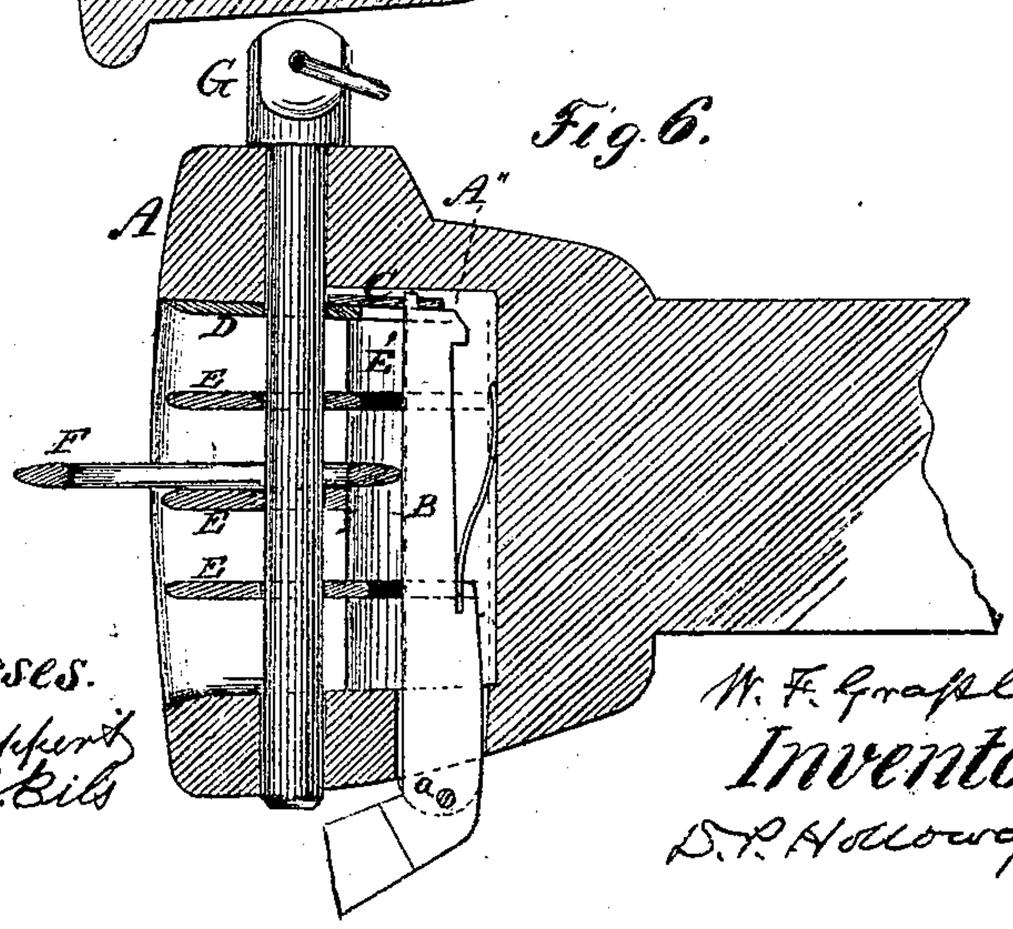
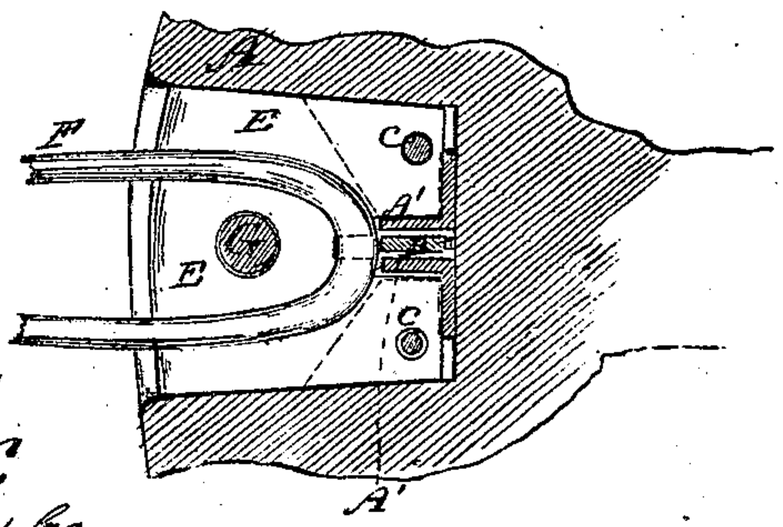


Fig. 7.



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Attys

UNITED STATES PATENT OFFICE.

WILLIAM F. GRASSLER, OF MUNCY, PENNSYLVANIA.

IMPROVEMENT IN CAR-COUPLINGS.

Specification forming part of Letters Patent No. **133,437**, dated November 26, 1872.

To all whom it may concern:

Be it known that I, WILLIAM F. GRASSLER, of Muncy, in the county of Lycoming and State of Pennsylvania, have invented a new and useful Improvement in Buffer or Draw Heads for Railroad Cars; and I do declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, in which—

Figure 1 is a perspective view of my improved draw-head, showing the parts in position to be coupled to another draw-head. Fig. 2 is a horizontal section, showing the vertical walls at the back end of the head, which, in part, form the groove or recess in which a pivoted bar stands and is protected when it is driven back to perform a coupling. Fig. 3 is a transverse section, showing the recess or chamber in the under side of the upper wall of the head, the dovetailed grooves in the under side of said wall, the pivoted bar and slide connected thereto, the ears *b b* on the under side of the lower wall, and the bolt *a* passing through said ears and keyed or riveted therein. Fig. 4 is a sectional bottom view, showing the form of the small plate that fits into the upper wall of the head and closes the chamber therein. Fig. 5 is a vertical sectional elevation, showing the coupling bolt or pin resting upon the slide in the upper wall of the head, the plates or bars, the manner of securing them in the head and to the upper and lower walls of the same, the small plate in the upper wall of the head, and the coupling-link as just entering a space between the plates or bars. Fig. 6 is a vertical sectional elevation, showing the coupling-link inserted into one of the division-spaces in the head, and, having driven back the pivoted bar and slide, the coupling-bolt has passed down through said link, and also down through the entire depth of the head. Fig. 7 is a sectional bottom view, showing the plates and division-blocks, the bolts *c c* which fasten them in the head, and the position of the coupling-link. Fig. 8 is a vertical section on line *x x* of Fig. 2.

Corresponding letters refer to corresponding parts in the several figures.

This invention consists mainly in dividing the mouth of the draw-head horizontally by a series of plates capable of yielding independent of each other to the action of the coupling-link. It further consists in providing a buffer or draw head having in its "outer end" or head a deep mouth or elongated aperture, the opposite walls of which are as near as practicable parallel to each other, the greatest depth or transverse diameter of which head is at a right angle to the platform or bumping-beam of the car to which it may be attached, said deep mouth or aperture being provided with a series of division plates or bars, or both combined, for dividing said aperture or mouth into two or more divisions or spaces into which the coupling-link may enter, said plates or bars holding the link in a proper direction to enter similar spaces in another head, or to enter any draw-head without any assistance of the hand, and, when a coupling has been effected between cars of equal height or varying several inches in the height of their wheels, platforms, or bumping-beams, causing the draft to be in a direct or horizontal line. The division-plates fitting loosely in the buffer-head are, in the rear end of the latter, separated by and confined between gum blocks, so that such plates may yield to the strain of the coupling-link upon them in the up-and-down motions of the cars to prevent their fracture or bending, all as will be more fully explained hereinafter.

A in the drawing refers to a buffer or draw head, which may be made of cast or wrought iron, or of any suitable material, and in sections and be bolted together, or it may be cast or wrought in one piece, as preferred. Its "outer end" or head is to be provided with a deep mouth or elongated aperture, the opposite walls of which are as near as practicable parallel to each other. The greatest depth of said head is to be placed at a right angle to the platform, bumping-beam, or body of the car to which it may be attached, it being of sufficient size to receive within it a series of plates or bars of metal or other suitable material for the purpose of dividing it into spaces of sufficient width to receive the coupling-link. A′ refers to vertical walls, in the back end of said head, which form a groove or recess sufficiently wide and long to receive and protect a pivoted bar, as shown in Figs. 2, 5, and 6. A″ refers to a recess or chamber in the under side of the upper wall of said

head, together with dovetailed grooves on two sides of said chamber, extending to the front end of said wall, as shown in Fig. 3. B refers to the pivoted bar, of iron or of any suitable material, passing up through a mortise cast or cut in the lower wall of the head, and resting on bolt *a*, which passes through ears *b b* cast or wrought onto the under side of said wall, and keyed or riveted in said ears, as shown in Fig. 3. The bar extends slightly below the bolt *a*, and is bent forward at a right angle to the vertical portion of said bar. When the coupling-bolt is withdrawn above the slide C in the upper wall, or the cars are uncoupled, there being more weight of metal in the horizontal arm below said bolt *a* than above it, the weight of said arm or the force of gravitation will throw the vertical portion of said bar forward, shoving said slide under and partially shutting off the coupling-bolt hole, and thus forming a support for said bolt. The vertical portion of said bar stands in the groove or recess formed by the plates and vertical walls, and is protected by the latter when it has been driven back by the coupling-link, in order to effect a coupling, as shown in figure. D refers to the small plate, of steel or other suitable material, having a coupling-bolt hole, and in the center of its rear end a portion of the metal or material of which it is composed is cut out, and the open space so made, in connection with the groove or recess formed by the vertical walls in the back end of the head, form the groove or recess in which the pivoted bar moves and is protected. The under side of the outer end of this small plate is ground or filed off to fit the under side of the upper wall of the head. The edges of the under side of said plate are to be planed or filed off to a bevel so as to fit the dovetailed grooves in the under side of said wall. The small plate, when shoved or driven into said dovetailed grooves, closes up the chamber or recess in said wall, and serves as a support to the slide therein, and protects and confines it in said chamber, as shown in Figs. 3, 5, and 6. E E E refer to a series of plates or bars, or both combined, made of metal or of any suitable material, such as hard vulcanized rubber, they being placed within the head, and are in the rear end of such head separated by and confined between elastic division-blocks E′. The number of the plates or bars, or of both combined, as thus arranged, may be from two upward to any number required to fill the deep mouth or aperture in the head of the buffer or draw head, it being of sufficient depth to enable it to receive the coupling-link, when held in corresponding heads, attached to cars of any and all difference of elevation or height in the platforms, bumping-beams, or wheels of said cars. The upper and lower sides of the outer ends of the plates or bars are to be reduced in thickness, as shown in the drawing, and slightly set back from the outer end of the mouth or aperture in said head, so that when the end of the coupling-link, having both ends flattened or wedge-shaped, comes in contact with a plate or bar it shall be guided into a space between two such plates or bars, or between a plate and the upper or lower wall, in an opposite draw-head; the distance from the pivoted bar, when driven back into the groove or recess formed by the vertical walls and the front end of the plates or bars, being sufficient to enable them to hold the coupling-link in a horizontal direction when it has been inserted into the head; and coming in contact with the pivoted bar, and driving it back between the vertical walls, it has moved back the slide and caused the coupling bolt or pin to drop through the plates or bars and coupling-link, as is shown in Fig. 6. Small-sized bolts or pins *c c* are countersunk in and pass down through the back end of the upper wall of said head into and through the rear end of the plates and division-blocks which separate them from each other, and, passing on down through the back end of the lower wall of said head, are there secured by keys, of steel or other suitable material, as is shown in Fig. 3, which firmly secure said plates and division-blocks within the head. The coupling-bolt hole of the walls, plates, and bars may be so perfectly on a line with each other as to guard against the bending or springing of the coupling-bolt. To provide for the up-and-down oscillation of short railroad cars when in motion, and in order to protect the plates against any up-and-down strain on them should not the space between them be sufficient for that purpose, the plates are separated by blocks of spring-gum or India rubber, or any other elastic substance suitable for that purpose, and having in their center, in each division, a cast-iron washer or division-block, with flanges extending along the inside edges of the gum blocks, in order to protect them and cause the coupling-link to move freely; and, if found necessary, the bolt-holes in the plates or bars may be slightly elongated. When the plates or bars, or plates and bars, have been constructed as above described, and the pivoted bar, slide, and coupling bolt or pin are also properly placed in position in the head, the latter will rest upon the slide, as shown in Fig. 5. If the coupling-link is inserted into any one of the spaces in said head, and driven back with force sufficient to strike the pivoted bar back into the groove or recess between the vertical walls in the back end of the head, it will move back the slide connected with said bar, and upon which the coupling bolt or pin rests, and cause it to drop, as a consequence of its own gravity; and if the draw-head is brought in contact with another draw-head the coupling bolt or pin of which is withdrawn and resting upon the slide, as shown in Fig. 5, the heads and cars to which they may be attached will be coupled together, and the draft will be in a direct or horizontal line; and this result will be accomplished without any reference to the height of the buffer or draw-heads, or to the difference in the elevation of the platforms, bumping-beams, or wheels of the

cars; because, if the coupling-link is secured in one head, at or near its center, it can enter any one of the spaces in the other, either above or below the center, and when such a coupling shall have been formed the draft will be in a direct line, as much so as if the cars were of equal height. F refers to the coupling-link with the ends flattened or wedge-shaped, as shown in the drawing; or it may be round at the ends, as is the common form in ordinary use, or of any other form that will accomplish the purpose designed. G refers to the coupling bolt or pin, which may be of any suitable form, such as is shown in the drawing, or any other that will answer the purpose for which it is designed.

The devices for sustaining the coupling-pin in an elevated position, consisting of the gravitating-bar and sliding plate, have been made the subject of a claim of another patent granted to me; and I therefore disclaim them in this patent.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A buffer or draw-head divided horizontally by a series of independent yielding plates, substantially as and for the purpose specified.

2. The combination of the deep-mouthed draw-head A, horizontal division-plates E, and elastic blocks between said plates, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM F. GRASSLER.

Witnesses:
WM. BRINDLE,
ADOLPHUS W. PETRIKIN.