

No. 630,575.

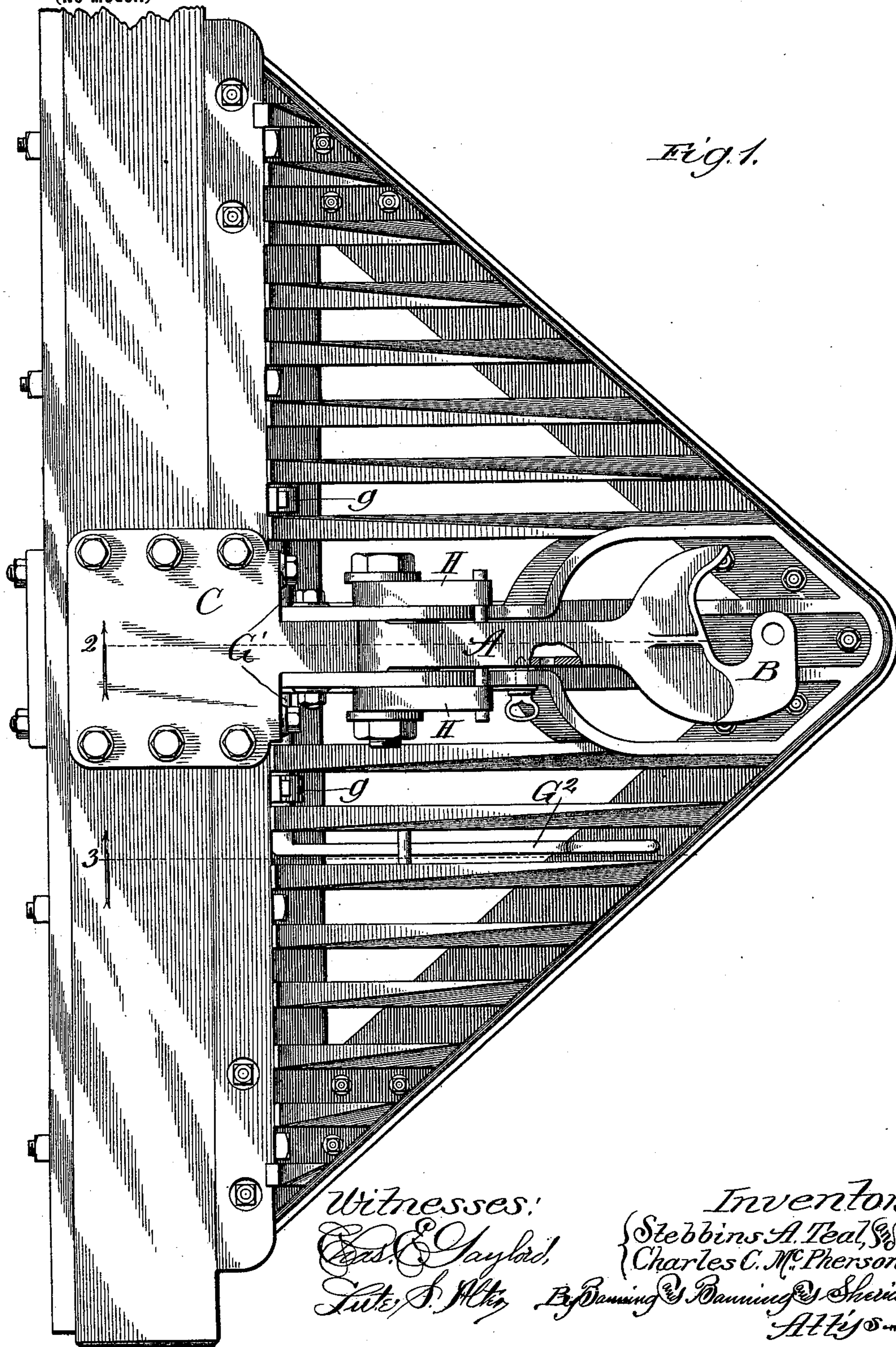
Patented Aug. 8, 1899.

S. A. TEAL & C. C. McPHERSON.
PILOT COUPLING.

(Application filed Mar. 6, 1899.)

3 Sheets—Sheet 1.

(No Model.)



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Fig. 2.

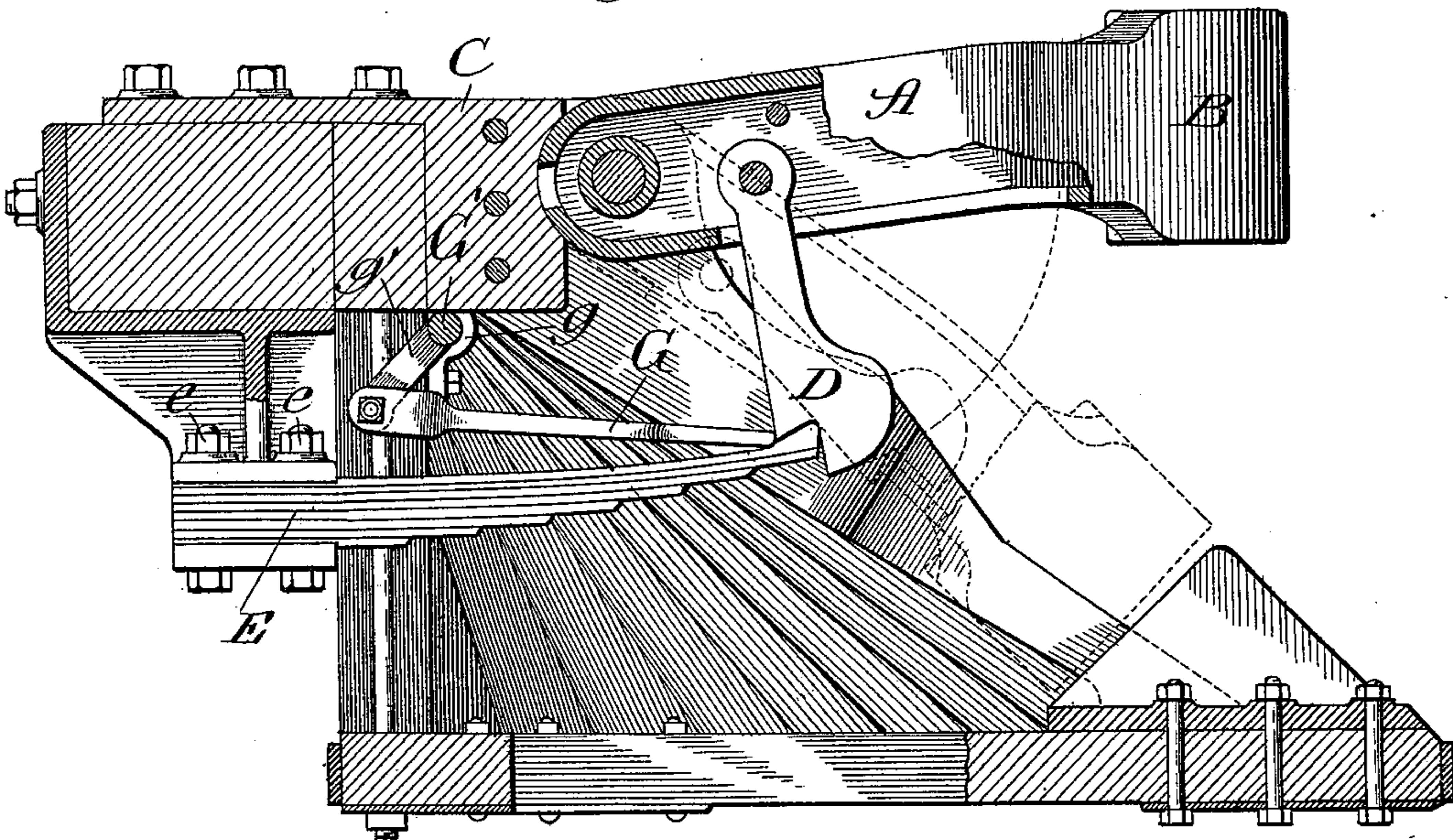
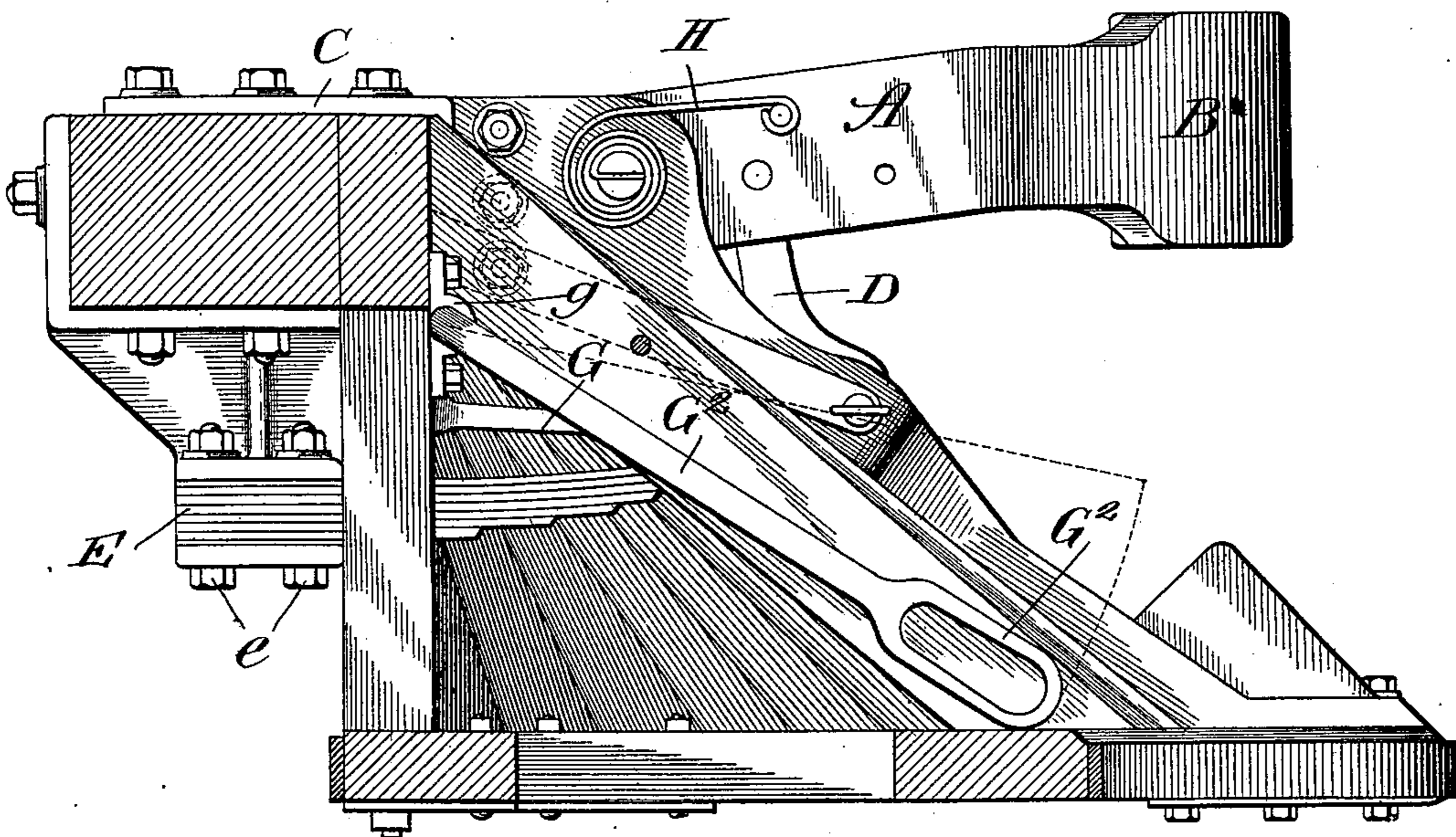


Fig. 3.



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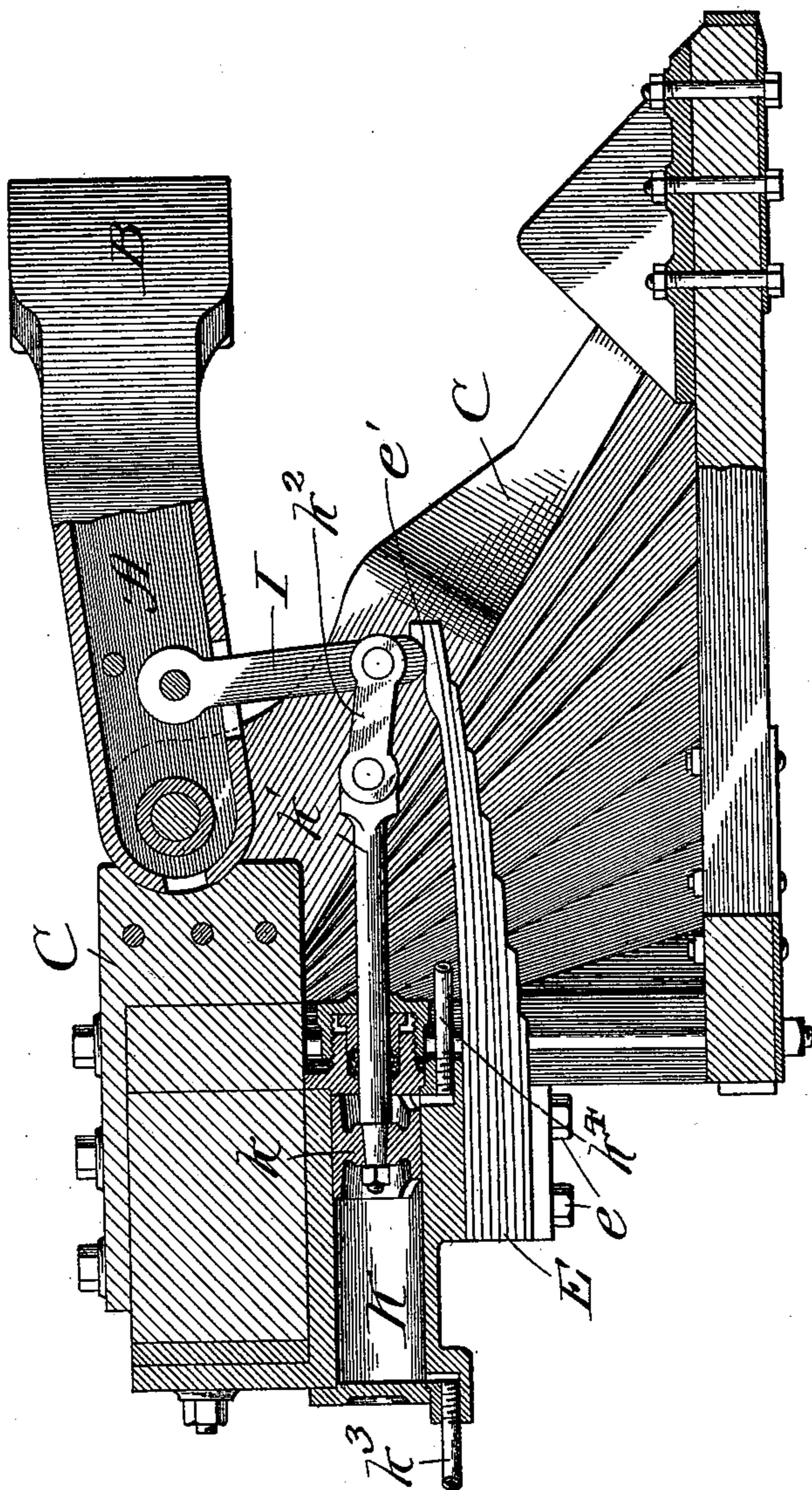
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3 Sheets—Sheet 3.

Fig. 4.



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UNITED STATES PATENT OFFICE.

STEBBINS A. TEAL AND CHARLES C. MCPHERSON, OF MISSOURI VALLEY,
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PILOT-COUPLING.

SPECIFICATION forming part of Letters Patent No. 630,575, dated August 8, 1899.

Application filed March 6, 1899. Serial No. 708,000. (No model.)

To all whom it may concern:

Be it known that we, STEBBINS A. TEAL and CHARLES C. MCPHERSON, citizens of the United States, residing at Missouri Valley, Harrison county, Iowa, have invented certain new and useful Improvements in Pilot-Couplers, of which the following is a specification.

Our invention relates to that class of couplers which are pivoted to the front part of a locomotive directly over the pilot, and particularly to the mechanism by which the coupler is moved into its operative position, sustained therein, and withdrawn from such position.

The object of our invention is to provide a pivoted pilot-coupler with means for moving it into operative position, yieldingly holding it in such position, and removing it from such position; and the invention consists in the features, combinations, and details of construction hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a plan view of the pilot of a locomotive, showing our improvements attached thereto; Fig. 2, a longitudinal sectional elevation of the same, taken on line 2 of Fig. 1; Fig. 3, a similar view taken on line 3 of Fig. 1, and Fig. 4 a longitudinal vertical sectional elevation of a modified form of our improvements.

In illustrating and describing our improvements we have only illustrated and described so much of a locomotive as is necessary to properly disclose the invention and enable those skilled in the art to practice the same, leaving out of consideration other and well-known parts which, if illustrated and described here, would only tend to prolixity, confusion, and ambiguity.

In constructing a pilot-coupler in accordance with our improvements we provide a draw-bar A of the desired size and shape, having a coupling-head B of the twin-jaw type secured thereto, both preferably in one integral casting. This draw-bar, with its coupling-head, is pivotally secured to a frame C, which in turn is bolted or otherwise secured to the pilot and which is provided with a pocket or recess adapted to hold and shield the coupler when in its inoperative position, as shown particularly in Fig. 2. This frame

portion may be made of a metal casting or of any other desired material.

To hold the coupler in its operative position, as shown in full lines and as illustrated by the mechanism in Figs. 1, 2, and 3, we provide a supporting-link D, which is pivotally connected to the draw-bar portion, as shown particularly in Fig. 2, and which is notched at *d* at or near its lower portion and adapted to engage with a semi-elliptical leaf-spring E, which spring is secured to the frame portion of the locomotive by means of the bolts *e*. From an inspection of Fig. 2 of the drawings it will be seen that the supporting-link is in engagement with the extreme free end of the leaf-spring, so that during the movements of the locomotive the coupler is sustained in its operative position in a yielding manner, thus minimizing the danger of the destruction of the parts owing to the rapid running of the locomotive or the irregularities of the rails.

In order to provide hand-operated mechanism by which the pilot-coupler is allowed to return to its inoperative position, a rock-shaft G is provided, having its bearings in the brackets *g* on the frame of the pilot. This rock-shaft is provided with a bell-crank lever *g'*, which in turn is provided with a tripping-arm G', pivotally connected thereto, and which has its free end arranged to contact the supporting-link, as shown in Fig. 2. When the handle G², that is formed integral with the rock-shaft, is raised, as shown in dotted outline in Fig. 3, the tripping-arm pushes the supporting-link out of engagement with the leaf-spring and allows the parts to drop into the position shown in dotted outline in Fig. 2. As the parts reach their lowest limit of motion they contact the spring, which acts as a cushion to prevent injury to the parts. A coiled spring H (shown in Fig. 2) is also provided, which has one end secured to the frame of the coupler and the other to the draw-bar, so as to act as a cushion and prevent the parts contacting each other with injurious force during the disengaging motions. To return the draw-bar to its engaging position, as shown in solid lines in Figs. 2 and 3, the draw-bar is raised so that the supporting-link D comes above the forward free end of the leaf-spring and

by gravity is in position to engage therewith. The letting go of the draw-bar permits the weight of the draw-bar and link to rest upon the end of the leaf-spring and in position to be engaged again by the rock-shaft and tripping-arm.

In Fig. 4 we have shown modifications of mechanisms for moving the coupler into operative position, yieldingly holding it in such position, and withdrawing it therefrom. These mechanisms consist of a supporting-link I, arranged to engage with a recess e' on the free end of the supporting leaf-spring. A fluid-pressure cylinder K is used, having a movable piston k therein and provided with a piston-rod k' , projecting therefrom, which in turn is connected with the supporting-link by means of the link k^2 . The fluid-pressure for operating this piston may be steam, though we prefer to use compressed air, which is admitted or exhausted through either of the pipes k^3 and k^4 . Examining the drawings it will be seen that when fluid-pressure is admitted to the fluid-pressure cylinder through the pipe k^3 the piston is moved forwardly, so as to push the supporting-link I into its vertical position, as shown in Fig. 4. When fluid-pressure is permitted to exhaust from the left of the movable piston and to enter through the pipes k^4 , the piston is withdrawn, so as to pull the link toward the left and permit the draw-bar to drop into its inoperative position. The leaf-spring, as will be seen, acts to hold the draw-bar and coupling-head yieldingly in operative position.

We claim—

1. In a pilot-coupler, the combination of a draw-bar pivotally secured to a pilot, and a supporting-spring arranged to yieldingly hold the draw-bar and its coupling-head in operative position, substantially as described.

2. In a pilot-coupler, the combination of a draw-bar and coupling-head pivotally secured to a pilot, supporting-spring mechanism, and a link or similar element pivotally secured to the draw-bar and arranged to contact the supporting-spring mechanism and yieldingly hold the draw-bar and its coupling-head in operative position, substantially as described.

3. In a pilot-coupler, the combination of a draw-bar and coupling-head pivotally secured to a pilot, a supporting leaf-spring secured to the frame of the locomotive and arranged in a substantially horizontal plane, a link or

similar element pivotally secured to the draw-bar and arranged to contact the leaf-spring and yieldingly hold the draw-bar in its operative position and adapted to be folded or swung on the draw-bar to permit such draw-bar and its coupling-head to be moved into an operative position, substantially as described.

4. In a pilot-coupler, the combination of a draw-bar and coupling-head pivotally secured to a pilot, a leaf-spring arranged in a substantially horizontal plane and secured to the frame of a locomotive, a link pivotally secured to the draw-bar and adapted to engage the free end of the leaf-spring and yieldingly hold the draw-bar and coupling-head in operative position, and means for moving the link to permit the draw-bar and coupling-head to be moved into an operative position, substantially as described.

5. In a pilot-coupler, the combination of a draw-bar and coupling-head pivotally secured to the pilot of a locomotive, a leaf-spring secured to the frame of a locomotive, a supporting-link pivotally secured to the draw-bar and arranged to contact the leaf-spring and yieldingly hold the draw-bar and coupling-head in operative position, a fluid-pressure cylinder having a movable piston therein, and means connecting the movable piston with the supporting-link to operate the same and move the draw-bar and coupling-head into their operative and inoperative positions, substantially as described.

6. In a pilot-coupler, the combination of a draw-bar and coupling-head pivotally secured to the pilot of a locomotive, a leaf-spring secured to the frame of a locomotive, a supporting-link pivotally secured to the draw-bar and arranged to contact the leaf-spring and yieldingly hold the draw-bar and coupling-head in operative position, a fluid-pressure cylinder having a movable piston therein, means connecting the movable piston with the supporting-link to operate the same and move the draw-bar and coupling-head into their operative and inoperative positions, and a spring secured to the pilot-frame and draw-bar to act as a cushion for the draw-bar, substantially as described.

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