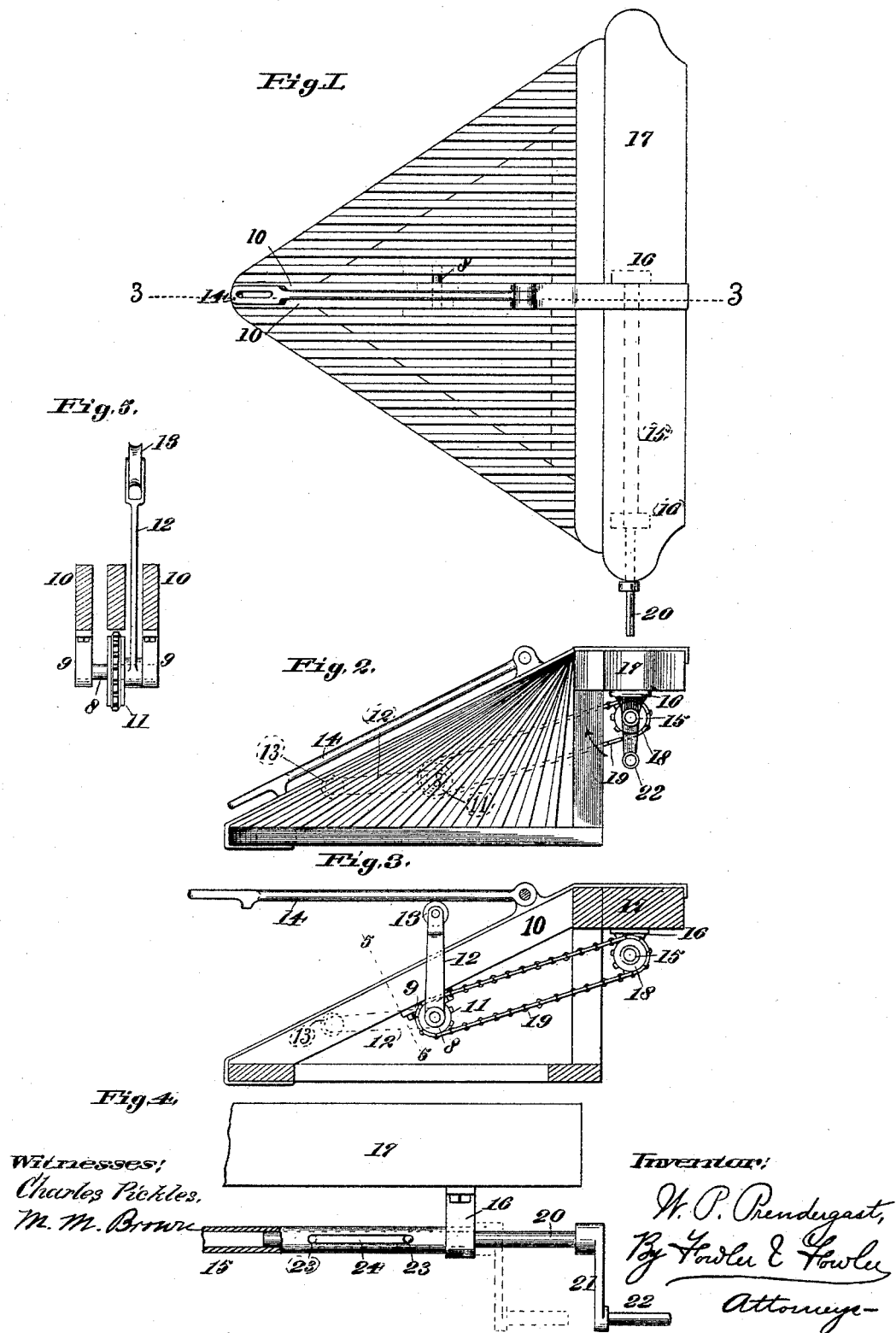


(No Model.)

W. P. PRENDERGAST.
LOCOMOTIVE COUPLING.

No. 491,719.

Patented Feb. 14, 1893.



UNITED STATES PATENT OFFICE.

WILL. P. PRENDERGAST, OF DE SOTO, MISSOURI.

LOCOMOTIVE-COUPLING.

SPECIFICATION forming part of Letters Patent No. 491,719, dated February 14, 1893.

Application filed June 11, 1892. Serial No. 436,333. (No model.)

To all whom it may concern:

Be it known that I, WILL. P. PRENDERGAST, a citizen of the United States, residing at De Soto, county of Jefferson, and State of Missouri, have invented a certain new and useful Improvement in Locomotive-Pilot Draw-Bar Couplers, of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to the coupling of pilot draw-bars of locomotive engines.

One object thereof is to provide means whereby a pilot draw-bar may be coupled to a car more conveniently, and with less danger to the person effecting the coupling than heretofore.

My invention has in view also, the attainment of the foregoing object by means of mechanisms so constructed and arranged as to be out of the way, and not exposed to injury.

To accomplish these objects I have provided a device, all of whose parts normally lie under or behind the inclined bars of the pilot or cow-catcher, which device is actuated to raise or lower the draw-bar by suitably manipulating a handle placed at the side of the forepart of the engine, and in such a position that injury is not likely to result to the operator as the car and locomotive to be coupled, collide.

The invention will be best understood by referring to the accompanying drawings, illustrating one form of my invention.

Figure 1 is a plan view of the forepart of a locomotive (cow-catcher) provided with my improvement. Fig. 2 is a side elevation thereof. Fig. 3 is a sectional view taken on the plane of line 3—3 in Fig. 1. Fig. 4 is a detail view of my extensible shaft, and the crank by which the same is turned when the draw-bar is being brought into position. Fig. 5 is a sectional detail view taken on the plane of line 5—5 of Fig. 3.

The horizontal spindle 8 (Figs. 3 and 5) is journaled in the brackets 9—9, which I prefer to mount on the under surface of two of the inclined bars 10—10 of the cow-catcher. Rigidly mounted on the spindle 8 are the

sprocket-wheel 11 and arm 12. Said arm is bifurcated at its free end to support a roller 13 which takes beneath the pilot draw-bar 14. This draw-bar is of the usual construction, and requires no explanation. Sprocket-wheel 18 (Figs. 2 and 3) is rigidly mounted on the spindle 15 which is journaled in brackets 16—16 secured preferably to the under surface of the heavy cross-bar 17. Sprocket-chain 19 works over the sprocket-wheels 11 and 18, its links engaging the teeth of said wheels. The spindle 15 is preferably made hollow, and of suitable bore to receive the shaft 20 (Fig. 4) which bears the crank 21 having a suitable handle 22. Said spindle has a longitudinal slot 24. The pin 23, which is firmly held in a transverse perforation in said shaft 20, projects into said slot and is adapted to slide therein. An expansion-joint or telescope connection is thus formed between the shaft 20 and the spindle 15. Normally these parts are in the position shown by dotted lines in Fig. 4, but when in use, the shaft 20 is drawn out as shown by full lines in said Fig. 4. The crank is preferably mounted on the forepart of the locomotive engine, and at that side thereof which is visible from the engineer's cab. This enables the engineer readily to see when the coupling is effected, so that he may govern the locomotive accordingly.

Fig. 2 shows the draw-bar and other parts in their normal position. When a coupling is to be made, the crank 21 is grasped, and the shaft 20 drawn out to the limit of construction (Fig. 4.) The crank is then turned in the direction of the arrow in Fig. 2, turning sprocket-wheel 18, which turns sprocket-wheel 11 by means of the chain 19. As wheel 11 revolves, it causes the spindle 8 to rotate, thereby raising arm 12 from its normal position (Fig. 2) to the position shown in Fig. 3. The lever in rising carries the pilot draw-bar from its normal position to that shown in Fig. 3, or to any intermediate position, as may be required. When the coupling has been effected, the crank 21 is turned in the direction opposite to that of the arrow in Fig. 2 to return the lever 12 to its normal position, and is then made to slide back to its normal position, as indicated by dotted lines in Fig. 4.

In the drawings, the sprocket-wheels 11 and

18 are of about the same size, but it will usually be found more convenient to have wheel 11 the larger, so as to increase the leverage.

I do not wish to limit myself to the particular kind of extensible crank-shaft employed, nor to the particular mechanism described for communicating the rotary motion from the spindle turned by the crank to the arm which raises the draw-bar, as means equivalent to those described will readily suggest themselves to the skilled mechanic, whereby the same ends would be accomplished without departing from the spirit of my invention.

In Letters Patent No. 470,897 granted to me March 15, 1892, for a locomotive draw-bar coupling, I described a device somewhat similar to the one herein described. The arm 12 and shaft 8 herein are substantially the same as the corresponding arm and shaft described in said former patent, but the remaining mechanisms above set forth, are new. In said former invention the spindle on which is mounted the arm that raises the draw-bar, is placed in substantially the position occupied by spindle 8 herein. This arrangement has a decided advantage over almost any other that could be suggested, inasmuch as with this position of the spindle the arm which raises the draw-bar is almost vertical when the said draw-bar has been brought to the position required in coupling, so that very slight force is required to hold the same in place. The violence of the jar of the collision which might, in any other position of the arm, tend to throw the draw-bar out of place and to jostle the person manipulating the device, will thus be exerted through the arm squarely against said spindle, and with little tendency to depress the said arm.

I am aware that devices have been suggested employing a lever to raise the draw-bar, which lever, being pivoted upon a shaft mounted on the upper part of the cow-catcher near the point where the draw-bar is attached, will be in an inclined, or almost horizontal position, while the draw-bar is in a position to be coupled, so that the weight of the draw-bar, and any downward impetus that the draw-bar may receive in attempting a coupling, would have to be resisted mainly by the personal strength of the operator. In the said device patented to me March 15, 1892, a difficulty arises owing to the usual manner of constructing the pilot. The power in said device is applied by means of a lever attached

directly to the spindle whose arm raises the draw-bar. The spindle being, for reasons above set forth, preferably placed in the position occupied by spindle 8 herein, it will be seen that this handle must project between the inclined bars of the pilot, which bars, being of considerable width, will not ordinarily permit such handle to be in a position very much inclined to a plane at right-angles to said spindle, and hence the person manipulating such handle may be obliged to pass between the car and the locomotive, or at any rate, may easily be jostled between them by the jar of the collision. It will be seen that when in their normal position, all the parts of the present device lie beneath or behind the inclined bars of the pilot, where they are not likely to injure passing objects, or to be injured by them.

Having fully set forth my invention, what I desire to claim and secure by Letters Patent of the United States is:

1. As a means for raising and lowering the pilot draw-bar of a locomotive engine, the combination of an arm mounted beneath said draw-bar, an extensible shaft, a crank for rotating said extensible shaft, and intermediate mechanism between said extensible shaft and said arm, for the purpose set forth.

2. As a means for raising and lowering the pilot draw-bar of a locomotive engine, an arm rigidly mounted on a spindle, a wheel also rigidly mounted on said spindle, a second wheel suitably mounted, means for rotating said second wheel, and suitable connection between said two wheels, for the purpose described.

3. As a means for raising and lowering the drawbar of a locomotive, the combination of a shaft mounted beneath said drawbar, an arm rigidly mounted upon said shaft, a sprocket-wheel also rigidly mounted upon said shaft, a second sprocket-wheel mounted upon a second shaft, a handle for rotating said second shaft, and a sprocket-chain connecting said sprocket-wheels.

In testimony whereof I have hereunto set my hand and affixed by seal this 6th day of June, 1892, in the presence of two subscribing witnesses.

WILL. P. PRENDERGAST. [L.S.]

Witnesses:

WILLIAM J. KNORPP,
W. V. CARSON.