

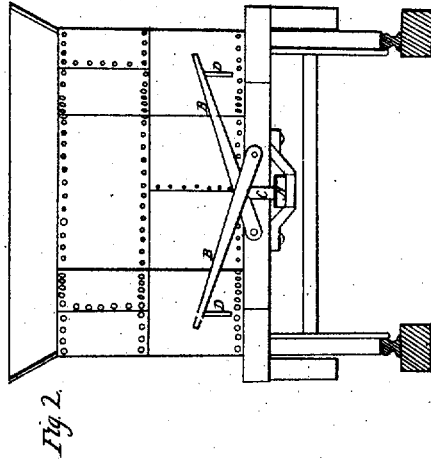
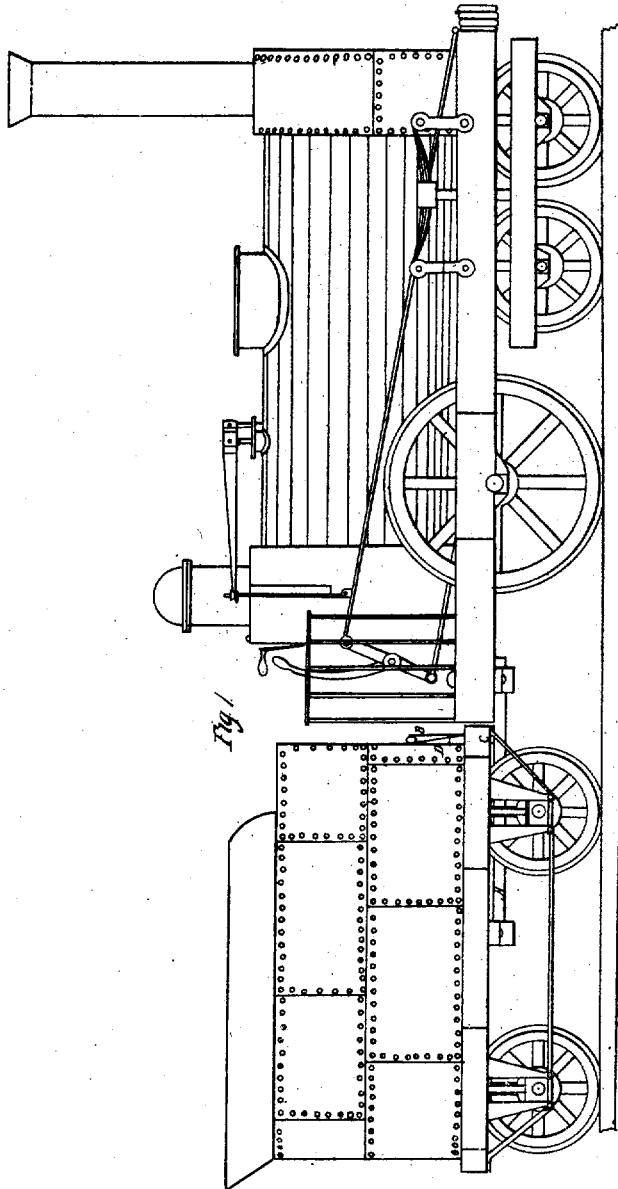
8273X

The specification in this patent  
is not in print.

*E. L. Miller.*  
*Car Propeller.*

*Nº*

*Patented Jun. 19, 1884.*



June 19 1834

8273X 449

Esra L. Miller of Charleston South Carolina  
Letters Patent

The Schedule referred to in these Letters Patent and making part of the same contain-  
ing a description in the words of the said Esra L. Miller himself of his improvement  
in the mode of increasing the adhesion of the driving wheels of the Locomotive  
Steam Engine.

To all to whom these presents shall come.

Be it known that Esra L. Miller of the City and District of Charleston, State  
of South Carolina have invented a new and useful mode of increasing the adhesion of  
the driving wheels of the Locomotive Steam Engine on Rail Roads by using the tender  
or car next the Engine for the purpose of adding weight to the driving wheels of  
the Engine at such times only as a greater adhesion is required than the weight  
would give which it would be practicable to carry as a fixed weight on those  
wheels without injury to the road. At the points of starting and on the  
ascents where increased adhesion is required. A part of the weight of  
the Car or tender which is next the engine, to the end of the frame of the En-  
gine next the driving wheels which may be done by means of a lever, screw, wedge  
or pulley, and detach it again when the increased adhesion is no longer neces-  
sary. The mode which I have used and found to answer perfectly in prac-  
tice is simply to connect the car or tender next the <sup>to the Engine</sup> by a strong iron  
bar, or lever one end of which is bolted to the under side of a cross timber  
in the frame of the Car or tender, so little back of the centre, and which lever  
extends under the frame of the tender to the end of the frame of the Engine and into  
the iron which together with the drawing bolt secures it to the Engine.  
Transversely to this lever, I attach to the end of the tender next the Engine two  
leaves, so that their fulcrums shall be six or eight inches on each side of  
the main lever, or drawing bar. These leaves have a jaw or pivot six or  
six inches in length directly over the main lever, and should be about 4 1/2  
feet in length. When the increased adhesion is wanted, the Engine  
has only to place his foot upon the ends of these leaves and press them in  
to a hook or groove for that purpose on the corner post of the tender and a  
portion of the weight of the Car or tender next the Engine is thus thrown  
upon the driving wheels of the Engine, and when the increased adhesion

is no longer wanted. This weight is detached by simply leaving the ends of the  
levers. What I claim as my invention is the making use of the counter  
tender near the Engine for the purpose of increasing the adhesion of the driv-  
ing wheels of the locomotive Steam Engine at those points where more  
adhesion is required than the weight would give which it is eligible to car-  
ry as a fixed weight on those wheels, whether the same be effected in the  
mode above described or any other which attains the same end.

Witness  
Walter Clarke  
Wm Bayliss

Geo. L. Miller

Drawing

(585 words)