G. B. PHILLIPS.

LOCOMOTIVE PILOT.

APPLICATION FILED SEPT. 11, 1916.

1,225,353.

Patented May 8, 1917.

2 SHEETS—SHEET 1.

Fig. 1.

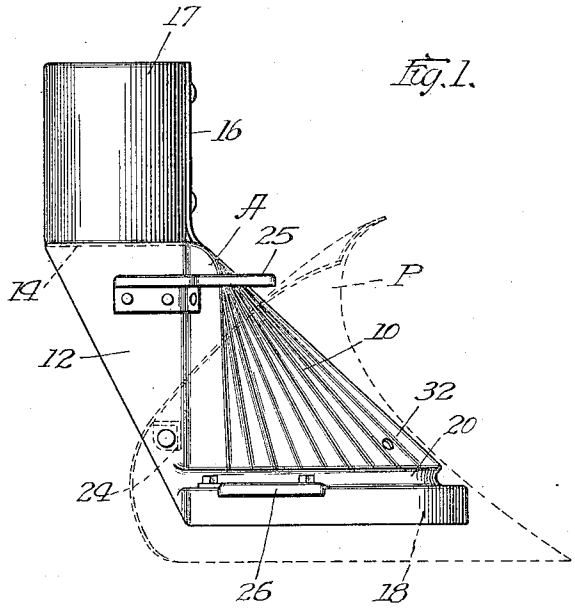


Fig. 8.

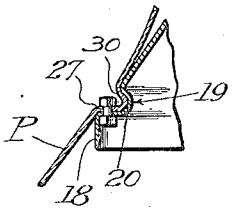
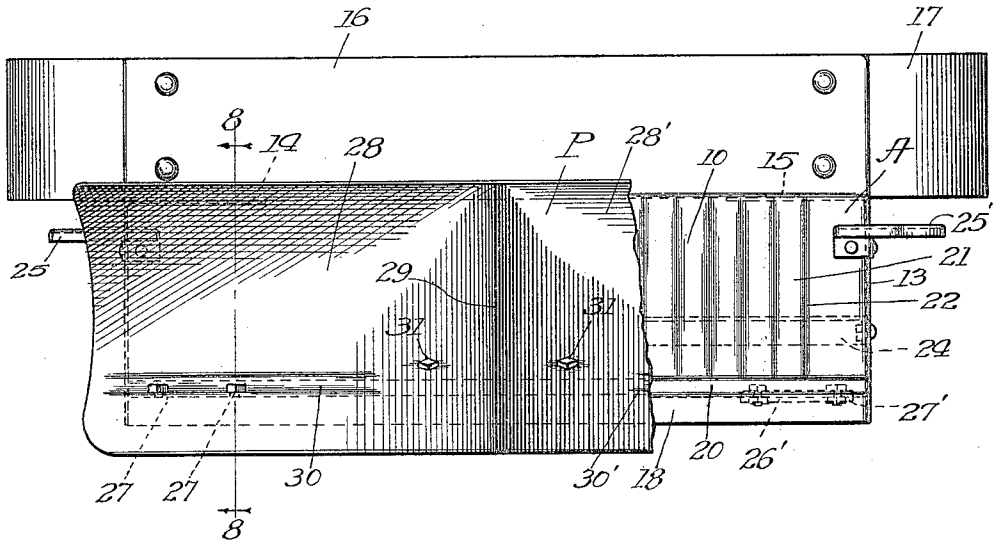


Fig. 2.



Witnesses

Robert H. Weir

Arthur W. Carlson

Inventor

George B. Phillips

by Charles J. Schmidt.

Atty.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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2 SHEETS—SHEET 2.

Fig. 3.

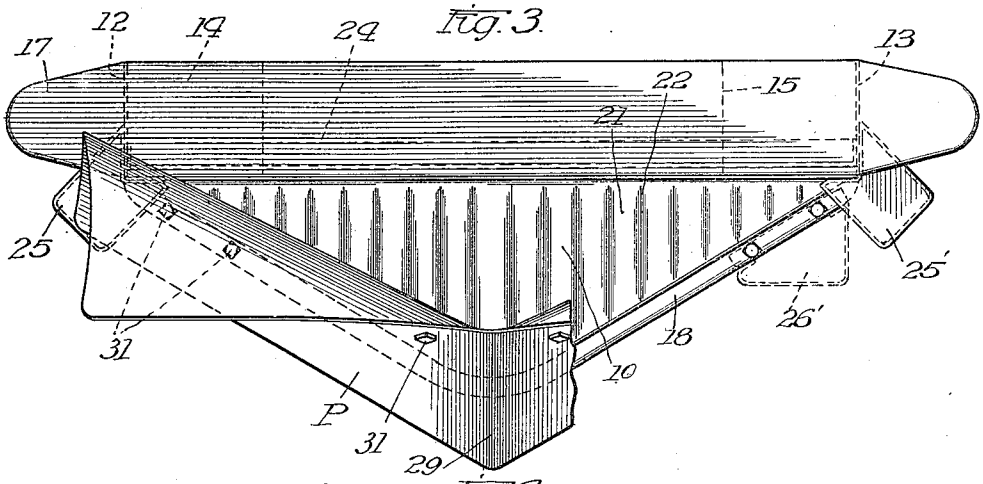


Fig. 4.

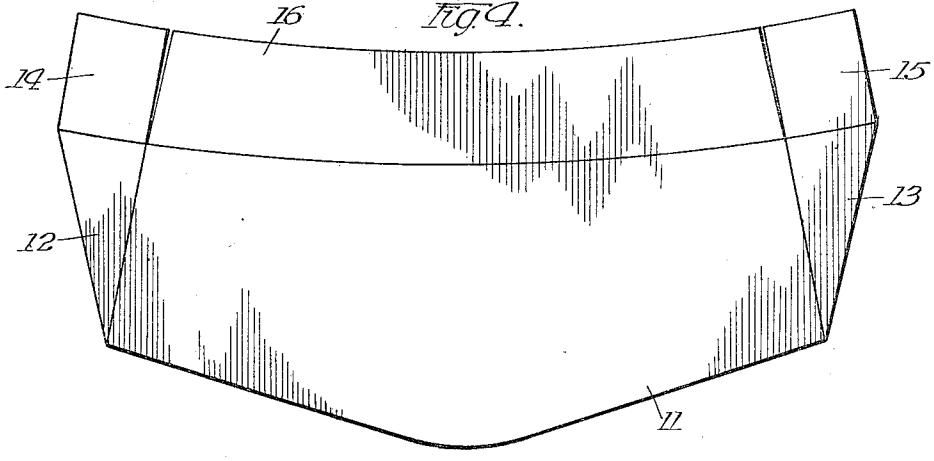


Fig. 5.

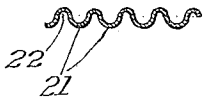


Fig. 6.

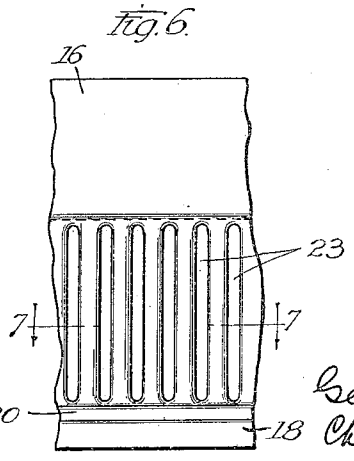
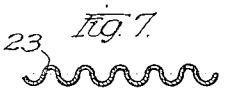


Fig. 7.



Witnesses:
Robert H. Weir
Arthur W. Carlson

Inventor
George B. Phillips
Charles J. Schmidt
Atty.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE B. PHILLIPS, OF LIMA, OHIO, ASSIGNOR OF ONE-FOURTH TO ARTHUR W. WHEATLEY, OF SHAWNEE TOWNSHIP, OHIO, AND ONE-FOURTH TO WILLIAM A. AUSTIN AND ONE-FOURTH TO WATSON M. MYERS, BOTH OF LIMA, OHIO.

LOCOMOTIVE-PILOT.

1,225,353. Specification of Letters Patent. Patented May 8, 1917.

Application filed September 11, 1916. Serial No. 119,435.

To all whom it may concern:

Be it known that I, GEORGE B. PHILLIPS, a citizen of the United States, and a resident of Lima, in the county of Allen and State of Ohio, have invented certain new and useful Improvements in Locomotive-Pilots, of which the following is a specification.

My invention relates to an improved pilot structure adaptable for use on road and rail vehicles and particularly on locomotives.

Pilots for locomotives are usually built up of bar-iron, angles, tubes, cast steel or wood and are cumbersome, clumsy and expensive when so manufactured, and they also lack strength. The object of my invention is to provide simple construction which will produce a stronger, less expensive, more efficient and more practical and desirable pilot and one which can be readily applied or taken off for replacement or repairs. The pilot of my invention is developed from a flat steel plate cut to shape and pressed in forms or dies or bent so as to form a one-piece pilot of the required shape and size, the top part being bent or formed to any desired shape to enable ready fastening of the pilot to engines, car bumpers or end sills. The pilot can have plain faces or can be made corrugated or ribbed.

A further object of my invention is to so construct and shape the pilot that a snow plow, also preferably of one-piece sheet metal construction, can be readily attached thereto when the use of a plow is desired.

On the accompanying drawings a construction is shown embodying the features of my invention. In these drawings

Figure 1 is a side elevational view showing the pilot applied to the bumper of a locomotive and showing a plow attachment in dotted lines.

Fig. 2 is a front view of the pilot, part of the attached plow being broken away.

Fig. 3 is a plan view with part of the plow broken away,

Fig. 4 shows the sheet metal blank which is bent and shaped to form the pilot,

Fig. 5 is a sectional view showing the strengthening corrugations of the pilot,

Fig. 6 is a front elevational view of a section of the pilot showing a modified arrangement of strengthening formation,

Fig. 7 is a sectional view on plane 7—7 Fig. 6, and

Fig. 8 is a sectional view on plane 8—8 Fig. 2, showing the manner of seating and securing the plow to the pilot.

In the drawing A represents the pilot whose body 10 is of the usual shape, being triangular in side and plan elevation. As shown in Fig. 4, a blank 11 for the pilot is cut from sheet metal and bent to form the pilot. The pilot shown has the body part 10, the sides 12 and 13 extending rearwardly from the body, the supporting ledges 14 and 15, and the top plate 16.

The ledges 14 and 15 extend horizontally inwardly to be secured to the under side of a bumper beam 17 of a locomotive or other vehicle while the top plate 16 is secured against the front of such beam. However, any other arrangement may be provided for securing the pilot to the vehicle. The pilot body may have plain faces, but preferably they are formed to produce strength and rigidity. As shown, the base section 18 is substantially vertical and is indented along its top to provide the rearwardly extending strengthening rib 19 and the front groove 20. Between the rib and the top section 16 the pilot body is corrugated or ribbed. As shown, the body has the vertical and parallel corrugations 21 between which run the grooves 22, such corrugations greatly strengthening the structure. As shown in Fig. 5, the corrugations and grooves are rounded but they could be angular. If desired the metal could be slotted between the corrugations as indicated at 23, Figs. 6 and 7, such slots being cut in the blank 11 before bending thereof to form the pilot structure. In order to further strengthen the sheet metal pilot structure a brace 24 may be extended between the sides 12 and 13 and secured thereto.

25, 25′ and 26, 26′ are steps secured to the pilot to conform to the usual laws for safety appliances on steam or electric railways. These steps are each formed of one piece of sheet metal, the steps 25, 25′ being secured at the top of the pilot structure and to the

sides and front thereof as clearly shown in Fig. 3. As shown, for the steps 26, 26′ bolt holes 27 and 27′ are provided at the sides of the pilot body through the wall of the rib 19 (Fig. 8). Bolts are preferably used for securing the steps 26 and 26′ in order that the steps may be readily detached and the bolt holes 27 and 27′ utilized for securing to the pilot the snow plow structure P.

The snow plow is also preferably pressed and bent up from a single piece of sheet metal and has the conventional snow plow form, the transversely concaved wings 28 and 28′ extending diagonally rearwardly from the prow or ridge 29. The wings are provided with longitudinally extending rearward indentations 30 and 30′ for fitting into the groove 20 of the pilot, such engagement giving the plow a firm seating on the pilot. In the indentations 30 and 30′ the plow wings are provided with bolt holes 31 for registering with the bolt holes 27 and 27′. Before the plow is applied the steps 26 and 26′ are removed from the pilot and the plow is then seated on the pilot and bolts secured in the registering bolt holes. To further secure the plow it may be provided with bolt holes 31 near its ridge and the pilot may have corresponding bolt holes 32 to register therewith when the plow is seated on the pilot, bolts being secured in the registering bolt holes.

The pilot of my invention being of a single piece of sheet metal, corrugated and strengthened, is of great strength yet very light; it can be very readily handled and applied, and can be readily detached for purposes of replacement or repairs. In addition to the brace 24 referred to, other braces may be applied as desired. The pilot can be so modified in form as to adapt itself to be secured to vehicles other than steam locomotives, as for example electric railway cars.

The snow plow attachment for my improved pilot is a very important and desirable feature. Heretofore large snow plow structures have been secured to the locomotive front and such structures are very heavy, cumbersome and hard to handle. The plow attachment of my invention being made of sheet metal is very light and very readily handled and is supported entirely by the pilot. The indentations or ribs on the plow wings engaging securely in the groove or pocket 20 of the pilot, the plow has firm seating engagement and is rigidly secured when the bolts are applied. The steps 26 and 26′ are readily removable and their bolt holes accessible for securing the plow. As the plow when applied will not interfere with the upper steps 25 and 25′ it will not be necessary to remove these steps.

I do not, of course, desire to be limited to the particular constructions and arrangements shown and described, as modifications are no doubt possible which would still come within the scope of the invention.

I claim as follows:

1. A pilot made of sheet metal and having a horizontally extending groove adjacent its base, and steps detachably secured at said groove.

2. A pilot constructed from a single piece of sheet metal and having a horizontally extending groove adjacent its base provided with bolt holes for the attachment of steps.

3. In combination, a locomotive pilot formed integral from sheet metal, and a sheet metal plow adapted for detachable application to the pilot.

4. In combination, a pilot formed integral from sheet metal and having depressions, a sheet metal plow having deflections for seating in said depressions, and means for detachably securing the plow when seated on the pilot.

5. A sheet metal pilot having a deep horizontally extending groove just above its base, said groove forming a strong reinforcing ridge.

6. A sheet metal pilot having a deep horizontally extending groove just above its base formed by deflecting the metal inwardly and forming a strong reinforcing ridge at the inside of said pilot.

7. A sheet metal pilot having a deep horizontally extending groove just above its base formed by deflecting the metal inwardly and forming a strong reinforcing ridge at the inside of said pilot, the lower wall of said groove forming a comparatively wide supporting seat for attachments to the pilot.

8. A sheet metal pilot having a deep horizontally extending groove just above its base forming a strong strengthening ridge, and having vertical corrugations terminating at their lower ends at said groove.

9. A pilot having bolt holes for the detachable application of steps, and a plow having bolt holes adapted to register with said pilot bolt holes to be secured to the pilot when the steps have been removed.

10. In combination, a sheet metal pilot having a deep horizontally extending groove forming a strong interior strengthening ridge and a comparatively wide supporting seat just above the pilot base, and a plow having projections for engaging said seat to vertically support said plow on the pilot.

In witness whereof I hereunto subscribe my name this 30 day of August, A. D., 1916.

GEORGE B. PHILLIPS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."