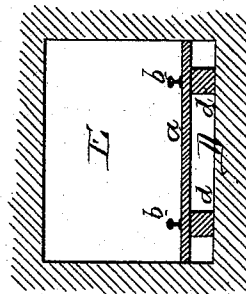
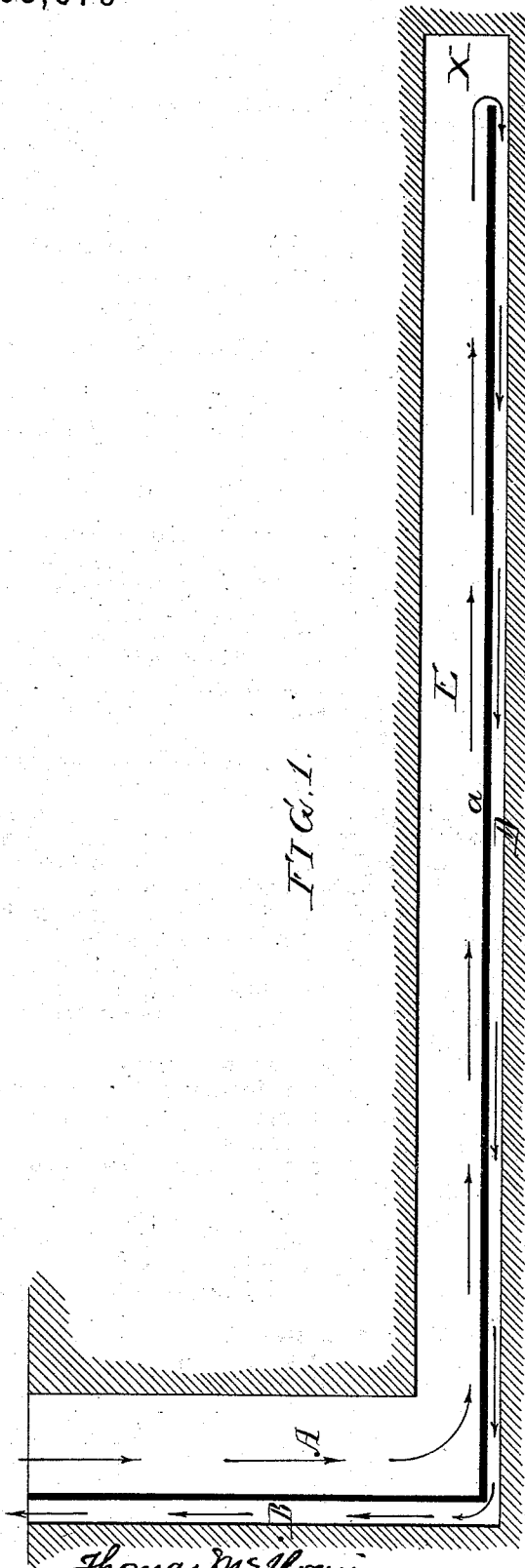


G. W. WILLIAMSON.
Ventilating Mines.

No. 153,878

Patented Aug. 4, 1874.



Witnesses, Thomas M. Gloag,
Barry Smith

George W. Williamson
by his Attys
Howden and Son

UNITED STATES PATENT OFFICE.

GEORGE W. WILLIAMSON, OF PITSTON, PENNSYLVANIA, ASSIGNOR TO
HIMSELF AND GIRARD HILLERS, OF SAME PLACE.

IMPROVEMENT IN VENTILATING MINES.

Specification forming part of Letters Patent No. **153,878**, dated August 4, 1874; application filed
May 15, 1874.

To all whom it may concern:

Be it known that I, GEORGE W. WILLIAMSON, of Pittston, Luzerne county, Pennsylvania, have invented an Improvement in Ventilating Mines, of which the following is a specification:

The object of my invention is to ventilate mines by causing a forcible current of air to pass down through the shaft or slope and through the gangways to the workings, as indicated by the arrows in the sectional view, Figure 1, of the accompanying drawing, and to return from the said workings to the outlet B through continuous passages D formed in the gangways beneath the railway-tracks, all as fully described hereafter.

In carrying out my invention, I form the return-passages D for the foul air in the drifts or gangways E by elevating the planking *a* on which the railway-tracks *b* are laid a few inches above the bottom of the said gangways, as shown in the enlarged transverse section, Fig. 2, the readiest method of thus elevating the planking being to lay it upon longitudinal stringers *d*. The passages thus formed extend throughout the entire length of each gangway to the points of working, X, and communicate with each other in the several gangways, or directly with the main outlet-passage B in the shaft, so that when an upward current is induced in the latter by means of a fan or other exhausting apparatus the result must be a downward passage of pure air through the shaft A, an outward passage through all the gangways E to the points of

working, and a return current from the latter through all of the passages D to the main outlet B, and thence to the surface, as indicated by the arrows in Fig. 1.

It will thus be seen that by my invention every portion of the mine is reached, and accumulations of foul air at any point effectually prevented, this being especially noticeable at the workings, which can be kept entirely free from powder, smoke, foul air, gases, &c., owing to the close proximity of the ventilating passages D. It will also be noted that this desirable result is attained at a comparatively slight cost, all that is necessary being to elevate the planking sufficiently to form the passages, and the latter, owing to their situation, can be connected in the several branch gangways much more readily than pipes or side passages, which would have to cross and recross the tracks, and would therefore be much in the way.

I claim as my invention—

The combination of the rails of a mine or tunnel supports for retaining the rails in an elevated position, and planking arranged to form a covered air-passage below the rails, as set forth.

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

GEORGE W. WILLIAMSON.

Witnesses:

WM. A. STEEL,
HARRY SMITH.