their capabilities to apprehend the most apparent danger. It is obvious that the list of casualties is greatly increased by this class of persons, and it is not too much to assert that seventy-five per cent. of the accidents that occur in coal mines are owing to inexperience, neglect or carelessness on the part of the persons injured or others.

The greatest calamity during the year occurred at Otto colliery, No. 2, on the 2d day of October, when five persons lost their lives by an explosion of gas. It is not too much to say that when I last inspected the mine, prior to the explosion, I found it to be in good condition, and the best ventilated in the district, but did not deem it to be the safest, because all collieries that generate fire-damp freely are always more or less dangerous, and the least irregularity or neglect often results in serious disaster.

The mine was ventilated by conducting the in-take current of air along the main gangway, the out-take current returning through the breasts; the air being conveyed to the face of the breasts through an opening of five or six feet in width, between the inside pillar of each breast and a brattice or board partition supported by props. On the morning of the explosion, the boss miner in going his rounds, passed through breast No. 49, where he found Yost and his partner engaged in preparing a blast. He instructed them, (according to his testimony,) that after firing the blast, they should enter the breast along the inside pillar, following the air current, in order to ascertain the effect of the blast and the condition of the place in regard to fire-damp. He also testified, which testimony was corroborated by other evidence, that the breast was free from any accumulation of gas, when he gave them their instructions; simultaneously with the firing of the blast, a heavy fall of coal took place in the breast. (The condition of the vein in the breast at the time was such as miners generally term free working coal—coal that requires more care and judgment in protecting themselves from injury, than the labor of mining it.) J. Yost and partner, after firing the blast, went down to the main gangway to dinner, or for some other purpose. About fifteen minutes after the first fall of coal was heard, one of the parties working in breast No. 50, hearing another heavy fall of coal in breast No. 49, gave information of the fact to the parties on the main gangway, with a view to caution them against danger. When the warning was given, Yost was up the schute of breast No. 48, how far from the gangway is not known, but was heard by parties in the gangway, to call on his partner to bring him a safety lamp. When his partner was about entering the schute with the safety lamp, the explosion took place, the force of which killed Yost and his partner, and three others that were eating dinner on the schute platform of breast No. 49.

Having taken the testimony of several reliable witnesses, and examined the place twice since the explosion occurred, I give the following as the theory of the explosion, in which inspectors Schmeltzer and Eltringham participated, who examined the place just after the explosion, and heard the evidence, to wit: That the gas which caused the catastrophy was generated in breast No. 49; that, as before stated, the breast was in free working coal; that a large amount of coal was loosened by the blast; that an extrordinary amount of gas was discharged at the same time; that the force of the first fall of coal damaged or destroyed the brattice to such an extent that the air current would cross the breast many yards below the face of the breast; that the gas discharged by the first loosened fall of coal accumulated, and filled the space above the point where the air current crossed the breast, and that when the second fall of coal took place, it forced the gas so accumulated into the air current and was carried with the air to breast No. 48, where it was ignited by the lamp of Yost.

Now, from all the facts elicited from and supported by the sworn testimony adduced by these witnesses, in connection with this lamentable occurrence, we do believe their testimony to be substantially correct, and that the theory we present, and this testimony has evoked by facts therein contained, in connection with the practical view we have taken of the case, to be reasonable and valid. And that the said Jacob Yost, together with the other persons of his party, came to their deaths from the effect of an explosion of fire-damp in the Otto mine, No. 2, caused by the introduction of a naked light into the air current of the said schute, being the imprudent act of Yost.