

require for cheap transportation and competition, with reduced rates of toll.—*Star*.

IMPROVED LOCOMOTIVE.—On Saturday last, we had the pleasure, in company with several scientific gentlemen of this place, of witnessing a new and improved locomotive engine, in full operation. The advantages derived from the improvement on this engine, are no doubt very important, and we have no hesitancy in predicting, that when once fully and practically developed, will be generally adapted not only to stationary, but to locomotive engines on our public roads. One essential improvement in the construction of this engine, is the saving of steam, which requires but one half the quantity and maintains the same power as that of an ordinary engine. We were particularly pleased with the neat and elegant finish of the engine, and certainly does much credit to the mechanical genius of the projector and builder, Col. Henry High, of this borough. We understand that a patent right has been secured, and that a thorough trial of its advantages will shortly be made on the Columbia railroad.—*Reading Democratic Press*.

TUNNEL THROUGH THE ALPS.—M. Vanino Volta, the engineer of Como, who, in conjunction with M. Bruschetti, of Milan, obtained in 1837, from the Austrian government, a privilege of fifty years for the construction of a railroad between Milan and Como, is now negotiating with the Swiss Cantons of Grisons and St. Gall, an enterprise which would vie in magnitude with the Thames Tunnel, viz., the piercing through the Grisons Alps. Impressed with the importance of the passage of the Splügen, and, at the same time, with the various obstacles which it presents, he thinks it possible to pierce through that mountain, and establish in the passage thus effected, a railroad, the northern portion of which would end, either at Wallenstadt, or even at Schomerkon, on the Lake of Zurich, and the southern should be connected with the Como and Milan Railroad. M. Volta, reckoning that thirty years will be required to execute the works, demands an exclusive privilege of a hundred years, with liberty to establish companies, in order to procure funds, or to transfer privilege to other parties.

OF THE APPLICATION OF STEAM AS A MOVING POWER, CONSIDERED ESPECIALLY WITH REFERENCE TO THE ECONOMY OF ATMOSPHERIC AND HIGH PRESSURE STEAM. BY GEORGE HOLWORTHY PALMER, M. INST. C. E.

Although the question relative to the comparative power of the Cornish and other engines has engaged the attention of this Institution, (and doubtless that of every practical engineer,) still no conclusion has been arrived at satisfactorily explaining upon what principle, the duty of the former engines so far outstrips the best reported duty of the Watt engine. The difference is truly astounding, for it is officially asserted that the average duty of ten or twelve of the Cornish engines amounted to 70,000,000 lbs. of water raised one foot high by the expenditure of one bushel of coals; and in some instances, a result has been brought out so high as 100,000,000 lbs., and even 120,000,000 lbs. by the like expenditure of fuel. Even the 70,000,000 lbs. duty appears to me to be so wide of the mark, as compared with the best stated result of the Watt engine, (viz., 28,000,000 lbs.) and the maximum effective power hitherto generally obtained by the consumption of one bushel of coals, that I am induced to address the Institution on the subject; and although the statement I herewith submit for consideration only furnishes presumptive evidence, that the statements of our Corn.