

not to return, I must leave with good papers, so that if there ever should be occasion to question my capability, I could refer to my old place, and that he could refer to these also, to justify himself for having engaged me. In the meantime, the 'Hampshire' required some little overhauling, which I could make when he should have consented to have me so employed.

Before my notice was up, the engine was ready to go, and I was ready to accompany her, with the consent of my employers, and a good letter of recommendation in my pocket.

The road was quite ready for the engine, so I ran it for three weeks on the Fitchburg road. I then took it to Ashburnham junction. The Cheshire road was not then laid—two miles and a half from Ashburnham was unfinished. I got a yoke of oxen, and a rope tackle, and drew the engine part of the way on the common road, where the ground was hard, and part of the way I laid down skids, and in some few places I had to lay down railroad iron. I had what help I wanted, and in five days had the engine on the rails. There was no tank for filling, and I had to fill the engine the first time through the safety-valve, and with a water-pail.

There was never such a scared set of men as the laborers in the cut. I could not get a man to couple my cars; even the one who ventured to hold up the shackle, with a long stick, would drop the stick and run when I backed up the engine. At last I had to back and push up the cars, one by one, and couple them myself. Then I could get nobody to go as fireman, they would skulk away whenever the engine blew off steam, or blew off the boiler. Trying a gauge cock would drive off half a dozen gaping fellows. I talked to one big-fisted chap about getting upon the foot-board, and made up my mind to hold him if he attempted to jump off. I told him that he must not be scared—that he would not be hurt, and that I should make a railroad man of him right off. He staid with me while I ran on the gravel train.

The road was finished, and, one by one, the new passenger and freight engines came on. George W. Perry, the present Master Mechanic of the Cheshire road, ran one of the passenger engines.

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We cannot tell the remainder of our friend's story, in his own words, without speaking so plainly that almost every one would know him at once. There are many who will have recognized him already.

Our friend became the Master Mechanic of an important road, where he sustained an excellent reputation for his faithful and able management. He worked under many disadvantages for want of shop-room and tools, as well as of spare engines, and has thereby been compelled to do many jobs in a way and with a despatch that would astonish some men.

After remaining four years in the engagement just mentioned, he was called upon to take charge of the machinery of a western road. This road had some of the smartest engines, and has made some of the quickest time on record, and has always been a favorite with the passengers who have taken it.

At a later day, it united with another road, and the subject of our sketch was placed at the head of one of the very largest engine stations in the country. Here he has charge of 500 men, and of a very large and excellent stock of machinery and tools. He occupies an important and lucrative post. Possessing all the qualities which constitute a good manager of operations and of men—a first class executive talent—he will yet be heard of as a superintendent, if we are not much mistaken. We judge only from the

man, and from no knowledge of his immediate prospects.

The simple moral of this sketch is, that confident and untiring industry, devotion and common sense, will raise the young machinist and engineer to a post of honor and fortune.

WORKING UNDER THE SEA.

(From the N. Y. Tribune.)

On Tuesday we went to Glen Cove to witness the operations of the Nautilus—not the famous little navigator of Southern seas, of whose pearly bark and purple sails so much has been said and sung, but a great iron diving machine, used for exploring the beds of rivers, laying the foundations of huge sea walls and breakwaters, and for a variety of other submarine operations, which has been very happily named after the little shell fish. This wonderful machine, like the Nautilus, is so constructed that it may be raised to the surface or lowered to the bottom of the water at the will of the operator within. Unlike the antiquated diving bell it may be held in suspension in mid-water, by its own specific gravity, and moved to and fro, from right to left, forward or backward, according to the requirements of the work in progress. Expensive hoisting tackle, and the labor of lifting the bell out of the water, are entirely dispensed with; it quietly does its own work, lifting and lowering immense masses under water, with no other assistance from the outward world than a plentiful supply of compressed air to keep its lungs in play. Such are a few of the capabilities of this wonderful machine, as stated last winter before the New York Geographical Society.

The Nautilus is entirely independent of suspension, thus obviating the difficulty inherent in all submarine machines which have heretofore attained to any practical value. It may, therefore, be used in the current or sea-way without danger. It is entirely under the control of the operator within. The preponderance of air or water within certain chambers in the machine, which is controlled by the operator inside, causes it to rise or sink to any point at pleasure. The preponderance of air, and consequent expulsion of water while below, will cause it to exert a lifting force equal to the amount of water thrown out. By this means stones or other weights may be lifted clear off the bottom, and either brought to the surface or carried to any point which may be desired, and there deposited. The operators walking on the bottom move the machine and suspended mass, or in the current-way cables, placed for the purpose, afford every facility of movement, the time required to lift a weight of five tons is about one minute. Going down on a rock drills worked by compressed air perform the same operations as in the quarry. By an arrangement in the side, eyebolts may be placed in the sides of sunken vessels, to which camels being applied the vessel may be returned at once to the surface, the air-pumps connected with the machine throwing air sufficient to lift a 2,000 ton ship in two hours, or 100,000 cubic feet of air per hour. The Nautilus by its power of locomotion on the bottom is admirably adapted to pearl and coral as well as sponge fishing. For, being in contact with the objects below, as fast as they are gathered, they may be sent off through the bottom of the machine attached to buoys charged with air to the surface, where they are taken on board the attending vessel. With this machine the beds of auriferous rivers may be thoroughly explored, as digging can be performed, and the sand washed either below or on the surface. The