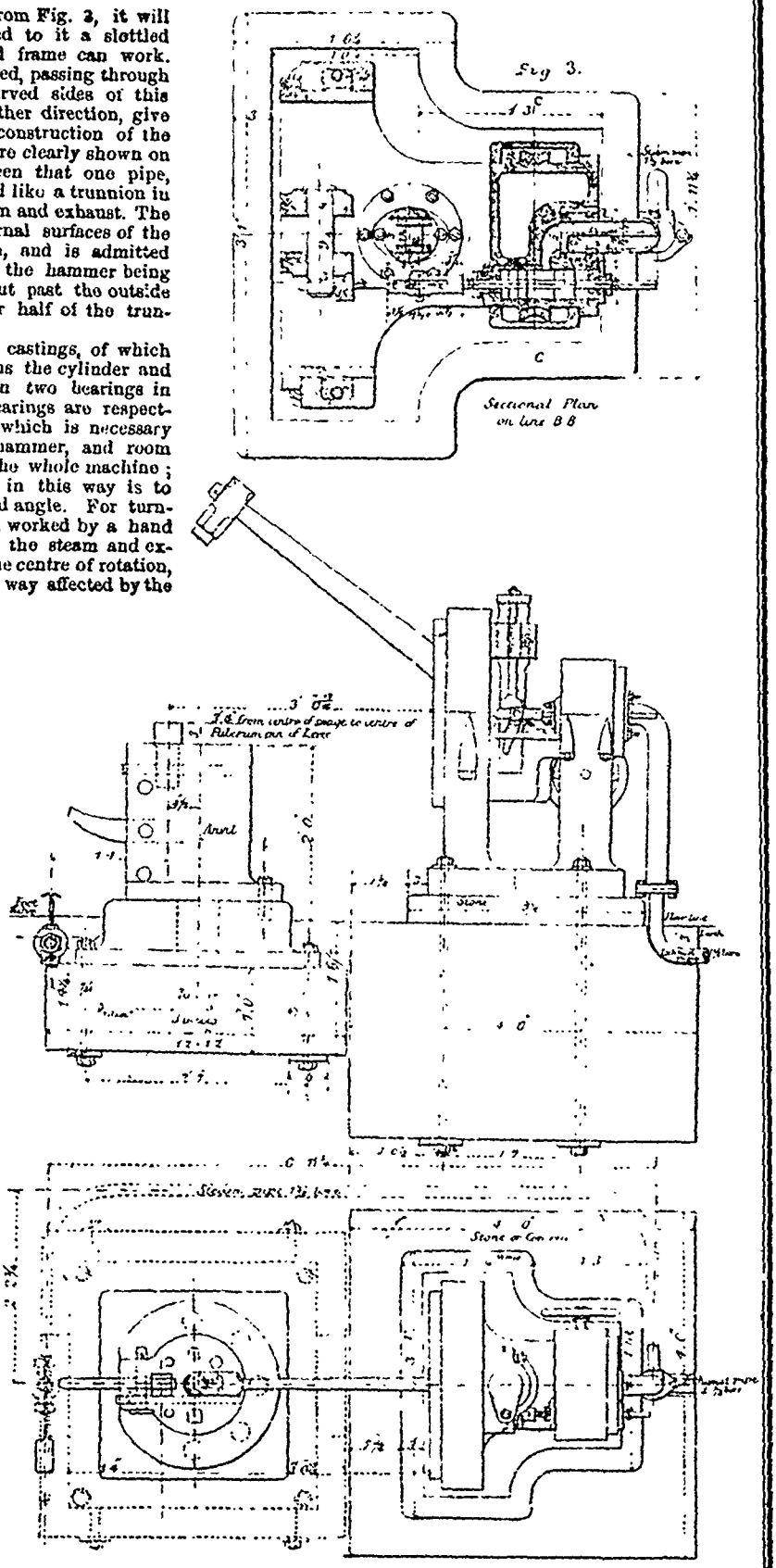
longitudinal section in Figs. 2 and 3. From Fig. 2, it will be seen that the valve spindle has attached to it a slottled head, through which the above-mentioned frame can work. Through this slotted head a pin is fastened, passing through the slot in the moving frame, and the curved sides of this slot, pressing upon the pin in one or the other direction, give the required motion to the valve. The construction of the valve, and the arrangement of the parts, are clearly shown on the drawing, from which also it will be seen that one pipe, divided into two by a partition, and placed like a trunnion in the centre of rotation, serves for both steam and exhaust. The steam is always pressing on the two internal surfaces of the pistons, so that the valve is in equilibrium, and is admitted to the two ends of the cylinder alternately, the hammer being double-acting, while the exhaust passes out past the outside sides of the pistons, and through the other half of the trunnion pipe.

The machine consists of two principal castings, of which one, which carries the hammer, and contains the cylinder and the whole of the working parts, rests in two bearings in the other, which is the frame. These bearings are respectively 2 feet and 1 feet diameter, a size which is necessary as well to admit the proper play of the hammer, and room for the valve, as to secure steadiness to the whole machine; and the object of arranging the machine in this way is to allow the hammer to strike at any desired angle. For turning the hammer round, worm gear Fig. 3, worked by a hand wheel, is provided, and in consequence of the steam and exhaust pipes being both admitted through the centre of rotation, the distribution of the steam is not in any way affected by the position of the valve, which must of course turn round along with the rest of the casting above referred to. The hammer is set in motion or stopped by a foot lever Fig. 3, which works a stop-valve (shown in dotted lines) placed below ground in a convenient position for the man working at the anvil. The striker can be worked with a pressure of 35 lb. steam, but 60 lb. or 70 lb. is more advantageous; it can also be arranged to work either with water or compressed air in situations where these agents are preferable to steam. It can deliver from 300 to 400 blows per minute.



Mr. Richardson, of the Canadian Geological Survey, says that the Taxada iron ore turns out to be of the richest quality, and the quantity is unlimited. He is making further researches for ore. He also came upon a marble vein. It is approached through a grotto, the entrance to which is 2,000 feet long, and 100 feet wide; the ceiling is covered throughout with stalactites. Mr. Richardson was at Nanaimo when the steamer left

Mr. J. H. Devereux, General Manager of the Atlantic and Great Western Railroad, has given the following instruction to *employés* of the road: "Treat people as if you appreciated and were willing to acknowlged their custom. Try to accommodate and please. In short, act as any good business man would toward his customers. Don't treat people as if you were conferring a favour on them by letting them ride. Rather seek to make the like popular, because its business is dependent on the good will of the people. You need not be ashame to let people understand that you acknowledge this. If a passenger refuses to pay, or is rough and abusive, treat him with courtesy but firmness."