

throwing a 700 lbs shot and weighing 35 tons, the celebrated *Woolwich Infant*, has been repeatedly noticed and its adventures duly chronicled up to its latest mishap, and we have now to notice another candidate for scientific favor in the Vavasseur twelve inch steel gun now in process of construction at the London Ordnance Works, and designed to throw a projectile of 600 lbs with a charge of 100 lbs of large grained powder. The charge for the Woolwich Infant was 130 lbs, the charge for the 32-pounder being 10 lbs.

The contrasts are very extraordinary, and the construction of the different guns no less so, the old 32 pounder being a cast iron gun, bored out, the Woolwich Infant, manufactured of wrought iron with steel tubing in a more complicated and scientific fashion, and the Vavasseur 12 inch gun being wholly of steel built up in the most approved artistic style.

The 32 pounder was a smooth bore in which large allowance had to be made for the windage of its spherical shot. The Woolwich Infant is a scientific piece of Ordnance, the elongated bolt of which is an accurate fit for the bore, furnished with projecting studs carefully planed to fit the grooves of the rifling and finished in the most elaborate style. The Vavasseur 12 inch gun differs in this respect, that it has the rifled grooves on the bolt or shot, and the bore of the gun has corresponding ribs.

The *Broad Arrow* describes this gun as follows:—

We will now proceed to give as detailed an account of the construction of this gun as its advanced state enables us to fully appreciate its peculiarities, and, in most points, most decided improvements. The dimensions are as follows:—Total length, including cascable, 18ft. 9in.; length of bore, 15ft. 10in.; length of rifling, 14ft. 2in.; twist of rifling uniform being 1 turn in 30 calibres; number of ribs, 3—there being no grooves in the gun, but transferred to the shot—a point that may be considered of decided advantage, as the inner tube is thus strengthened by these ribs, instead of, as in ordinary riflings, weakened by grooves. Besides, another advantage of the ribs is that they are more easily cleaned than is the case in the old groove system. Again, it is far less expensive to groove the projectile than the gun. Besides this, the old plan of planing the studs of a projectile was a work of considerably more labour than that now adopted in the ribbed formation of the bore.

The system adopted is that of building up the gun by a series of concentric rings, thus preventing lateral expansion, which would take place at every discharge till the gun was rendered useless.

The construction of the gun is as follows—a main tube 198 inches long, is formed of steel, tempered in oil, it is 21 inches in external diameter at the breech and 17½ inches at the muzzle, the thickness of the walls of the tube being 4½ inches and 2½ inches at the muzzle, over this a steel jacket covering the breech is placed, it is 7 feet 9 inches long and 30½ inches external

diameter, a double series of rings about 3½ inches thick are shrunk one over the other into a compound ring of 7 inches in thickness which is done before the compound ring is itself shrunk over the other, and the structure is complete. It is this latter portion of the compound ring that Mr. Vavasseur relies on to distinguish his system of construction, and its advantages are claimed to be offering greater resistance to expansive force than any other, and exhibiting any fault which may occur from over-strain on the outside instead of inside the gun, enabling it to be repaired if necessary.

The interior circumference or periphery of the gun is 3 feet, the exterior 12 feet, the external ring at the vent is forged considerably thicker than the remainder of the gun as compensation for the perforation, the ring carrying the sights is also proportionably increased.

The same quality of steel is used throughout, the inner tubes alone being tempered in oil, the trunnion ring owing to its intricate shape is made of wrought iron.

The tube of this gun is the largest forging of the kind ever made in England.

Mr. Vavasseur had previously constructed a 7 inch steel gun on nearly the same principle.

The late meeting of the Dominion Board of Trade has furnished the talented editor of the *Montreal Gazette* with the opportunity of giving the country one of those celebrated pen and ink sketches analytical and descriptive of the occasion and surroundings which has rendered that journal famous.

It is certainly highly creditable to the *Gazette* that it has furnished the country with such ample and truthful reports of what really did occur, but in the analysis of the canal question there is a misconception which the interests of the country demands should be set right. The Ottawa delegation on behalf of the Board of Trade of that city, submitted three papers which they believed should be the basis of the National Commercial Policy; entitled the Canal Policy of the Dominion, the North Shore Railway and Emigration. After the Executive Council had grouped the subjects in the official programme, it was especially expected that they would be considered in the order in which they stood, and consequently it was with some surprise to those interested that the Hon. John Young introduced his now celebrated motion, on the Deepening of Lake St. Peter, which stands No. 29 on the programme and is assigned to the Quebec Board of Trade, as the late Executive Council had surprised the Ottawa delegation with a report open to serious objections, the idea in the minds of the members was that Mr. Howland's amendment was one of those clever flunk movements which are the weapons of a good politician, and as Hon. Mr. Young's resolution placed them be-

tween Scylla and Charybdis they were (in order to have a chance of having the policy submitted discussed at all) obliged to vote for the amendment so called, although in reality it was a substantive motion and that submitted by the Ottawa delegation and ruled out of order was the amendment proper; if there is a fault in the matter it rests with those who brought forward out of regular order a motion for what nearly half the delegation believed to be a mere local work. It is, however, a subject of congratulation that "local selfishness" was gradually eliminated from the Board and the basis of the National Commercial Policy was accepted without a murmur. That the late session of the Dominion Board has rendered good service to Canada politically and commercially is beyond doubt, if any one dreams of a Zollverein independence or its corollary annexation as being acceptable to the people or conducive to their interests, the action of the Board and results of the discussions on the state of our local and foreign commercial relations will speedily dispel such visions. With the general result of the session the people of Canada have good right to be pleased, as the principle was recognised "that this country had a destiny of her own to work out, was fully equal to the task, had resolved to allow no outside interference with their progress, and the first step therein should be the development of the internal resources of the Dominion."

With such a noble object before them it is not likely the commercial men of Canada will be easily discouraged, or that the probable expense of a trip to the political capital will deter them from the discharge of a plain public duty.

There are, however, two prominent questions which have to be finally settled singularly enough both are founded on fallacies, and both have exerted no ordinary fascination on our Commercial Legislators, the first is, the Western Trade of the United States; the second, closer trade relations with that power.

The grain trade of the western states seeks New York as its port of distribution because the greater portion thereof is absorbed by the Eastern States, the United States coasting laws effectually prevent Canadians engaging in this trade and there does not appear to be any chance of relaxation, the small surplus seeking a British market follows the same course, it is about equal in volume to the import trade from that country to the States, and it can be understood how it is entirely secured to United States bottoms, so that the Canadian politician who looks to this trade as furnishing the reason why the Frontier Canals should be enlarged is in pursuit of an *ignus fatuus* and is not dealing honestly with the people.

The desire for closer trade relations is not justified by any course whatever. A mem-