

Improved Traction Engine.

Inequalities of surface have proved a great disadvantage to engines on common roads, for the jarring and jolting, consequent on motion, loosens the working parts, so that the whole machine gets out of repair quickly. As ordinarily made, with rigid frames, the adhesion of the wheels is very unequal, and at times, in the wrong place, so that the driving wheels exert no tractive force whatever. By the improvements in Figs. 1 and 2, illustrated the difficulty just adverted to is overcome. The engine and boiler, together with the principal driving wheel, there is but one, are attached to a frame, A, which is within, and attached to the exterior frame, B, at the back part. It will therefore be seen that the weight is always on the driving wheel, C, and its tractive force entirely independent of the position of the main frame and its wheels. The direction of the machine is given by the gearing, D, behind, and the whole power exerted by the cylinders is always available in ascending heavy grades or going over loose ground.

A patent was procured on this engine through the Scientific American Patent Agency, on the 22d of November, 1864, by G. W. Barnett, of Urbana, Ohio. For further information address him at that place.

The Sword-revolver.

By a paragraph in the *New York Herald* of the 25th ult. we learn that M. Sieve Guilbert, an ingenious mechanic and practical workman in this city, has perfected an invention of his own in the completion of a very formidable yet elegant weapon of war, which appears in the shape of a saber and six shooter revolver combined. The saber is of the regulation length of the United States service, and in the cap of the steel hilt has the charging part of a six-shooter, which revolves in the usual manner, and discharges the balls through an aperture bored in front of the flat guard coming opposite the thumb when the saber is grasped in the hand. This combination enables the person so armed to use the pistol and sword at once, saving the necessity of looking after the pistol and disposing of the sword at the moment when suddenly attacked. M. Guilbert's invention will enable a man, in fact a boy, to discharge a couple of shots at his adversary, then guard, or cut and thrust, and shoot again as he thinks best. The weapon is not likely to get out of order.

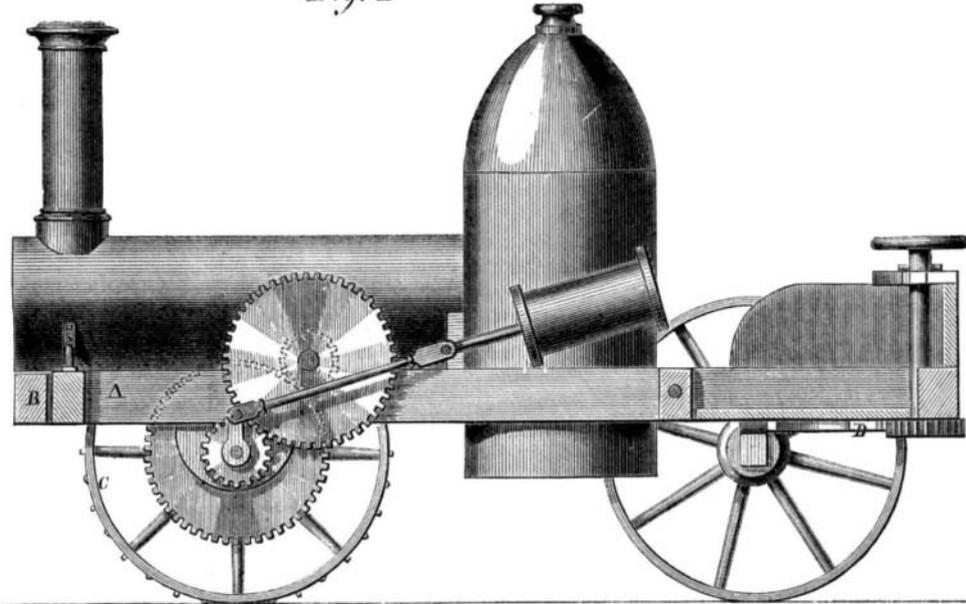
M. Guilbert can find his sword-revolver ready made to his hand, and illustrated on page 88, Vol. IX. of the SCIENTIFIC AMERICAN. It was invented by Mr. Campbell of this city, and is the same thing in principle as the sword-revolver. It is really surprising to see the number of inventions that are re-invented. Time and study are thrown away which might be saved by a perusal of the SCIENTIFIC AMERICAN.

RAISING PETROLEUM.

A few weeks since we called the attention of inventors to the fact that the enormous increase in the production of petroleum opened an inviting and profitable field for their talent. Since then we have been pleased to notice that many improvements have been brought forward to facilitate operations in the Oil Regions, and we doubt not that the projectors of

them will be amply rewarded therefor. One of the simplest as well as most promising of these inventions is that of Mr. Benjamin Frazee, of Bellville, N. J. This gentleman proposes to dispense with pumping the oil from the wells, and to raise it to the surface by a column of water. As it is well known that the specific gravity of petroleum is less than that of water, it follows that the oil will float if water can be

Fig. 1

**BARNETT'S TRACTION ENGINE.**

introduced below it. This is done by Mr. Frazee's apparatus as follows: A tank is elevated on columns at any desired height from the well, having a smaller pipe leading directly down through the well to the bottom. By merely opening a cock the water runs down through the oil and fills the pipe, of course forcing the oil out at the top of the well, where it is collected in the usual manner. A small model exhibited to us accomplished the object perfectly and the arrangement and conception are very ingenious.

Commentary on the American War.

The London *Engineer's* Birmingham correspondent says:—"A strange comment on the American war presented itself at the implement department of the

Who Invented Locomotives?

Who shall say that the introduction of the locomotive and the railway system was not expedited, and that, perhaps, by many years, through the energy, the talent, and the enthusiasm of a working man, whose name is even now to the general public totally unknown—John Steele?

Let the biographer of the Stephensons tell something of this unrecognized genius, for, at least in these pages, his name cannot be out of place. "John Steele," says Mr. Jeaffreson, "another of George Stephenson's early and most valued friends, is a man worthy of special mention. . . . The son of a poor North-country man, who was originally a coachman, and afterward a brakesman on the Pontop Railway, John Steele, in his early childhood, displayed remarkable ingenuity in the construction of models of machines. His schoolfellows at Colliery Dykes used to marvel at the correctness of his imitations of pit-engines, and remember how in school the master could never 'set him fast' in figures. While he was still a school lad, his leg was accident-

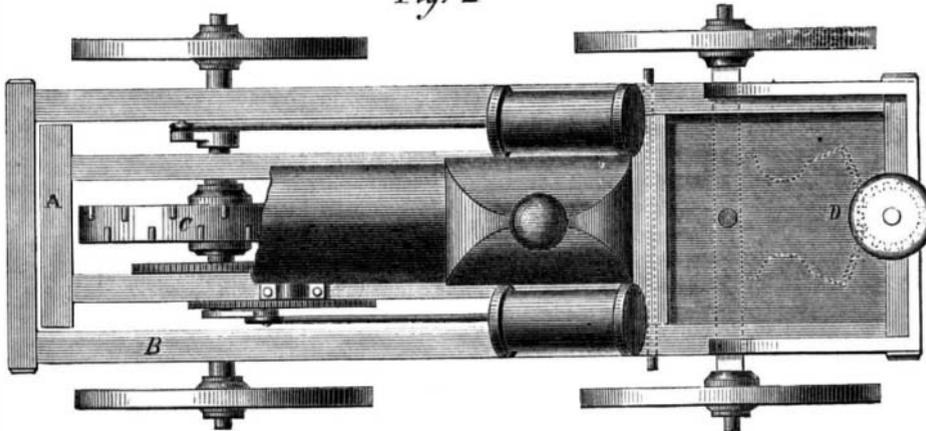
ally crushed on the Pontop tramway. After leaving the Newcastle infirmary, where the limb was amputated, he was apprenticed to Mr. John Whinfield, the iron-founder, and engineer of the Pipewell-gate, Gateshead. Here he attracted not only the attention and favor of his masters, but also of Trevithick, who in nothing displayed his consummate genius more forcibly than in the sagacity with which he selected his servants and apprentices." Steele afterwards joined Trevithick, and assisted in the manufacture of the locomotive constructed by that original mechanic in 1803-4. He then returned to Gateshead, and there "built the first locomotive that ever acted on the banks of the Tyne."

When it was finished it ran on a temporary way laid down in Whinfield's yard, at Gateshead. John Turnbull, of Eighton Banks, living in 1858, remembered the engine being made while serving his apprenticeship at Whinfield's, and said that, when completed, "it ran backwards and forwards, quite well, much to the gratification of 'the quality,' who came 'to see her run.'" Every word that came from Steele—Trevithick's pupil and workman, who had himself, within six miles of Killingworth, built a machine which, with all its defects, had actually traveled under the influence of steam—George Stephenson stored up in his memory. Steele was never weary of prophesying

that "the day would come when the locomotive engine would be fairly tried, and would then be found to answer." No wonder that Stephenson caught enthusiasm from such a teacher. Poor Steele himself was eventually killed at Lyons by the bursting of the boiler of a steamboat, in the year 1825. It is to be feared that there are far too many Steeles, who, eminently useful in their positions, never find opportunities for raising themselves above them, and for whom the tide which leads on to fortune never flows.—*Mechanic's Magazine*.

THE prize money standing to the credit of Admirals Lee, Farragut, Dahlgren, Bailey and Porter, is said to amount to three millions and a quarter.

Fig. 2



Birmingham show of last week. Messrs. Howard, the eminent manufacturers of Bedford, stated that they were now making 'plows with seats'—a class of articles that had come largely in demand in the American market, in consequence of so many persons having been sent back, maimed in limb, from the pursuit of war, to one of agriculture. These cripples, being unable to walk, were dependent on some mechanical contrivance for a means of getting their livelihood, and the plan of making for them plows with driving seats was hit upon."

[This, as the French say, is quite a "high novelty." Plows with seats have been used for years in this country, also on many other forms of agricultural machinery, so it cannot be the result of the American war.—Eds.