

rocket. The tin bullet is filled, just before being used, with petroleum oil. The lighted rocket rises in the air and traverses the space necessary to arrive over a certain spot. Arrived above its object the rocket sets fire to the fusée, the composition in the chamber of the bullet takes light, bursts its envelope, and at the same time fires the petroleum, which falls like a sheet of flame and continues burning. This sheet of flame fires a space of sixteen to twenty four square metres, according to the size of the rocket. No. 1 throws one litre of petroleum, No. 2, two litres, No. 3, three litres. They can be thrown a distance of six kilometres, and aimed with great precision, being balanced by means of a long stick attached to each rocket, which maintains the elevation given to it at the time of discharge. Some interesting experiments were made with this weapon at St. Cloud on the 10th of last month. In less than ten minutes a considerable space of ground was covered with a sea of fire. A committee, composed of superior officers of artillery, presided over the experiments, and the general at their head was appalled by the terrible nature of this engine of destruction.

Just imagine this sea of fire falling upon the Prussian masses, burning everything, setting light to the cartridges in the soldiers' pouches and to the ammunition vans of the artillery. Their route would be complete. The committee, in its report, has declared in its opinion no civilized nation could make use of these rockets except for reprisals; and it would be only in case of the Prussians firing upon us with petroleum bombs, such as they used at Strasbourg, that we should retaliate with the new rocket. However this may be, the Committee of National Defence has given the inventor a large building on the Batignole (formerly a girl's school), and has ordered the immediate manufacture, on a large scale, of Satan rockets. From day to day 200 workmen will be actively employed, and within a few days we shall have a sufficient stock to enable us to repay the Prussians in their own coin, if, as at Strasbourg, they make use of unlawful weapons.

### A STEAM ARMY.

(From the Pall Mall Gazette.)

Mr. Henry Bessemer, whose name is identified with a well known process of steel manufacture, has conceived the idea of strengthening our defences by an "auxiliary steam army," which would have at least this recommendation for the economists—that it would cost comparatively little to create, could be cheaply worked in time of war, and during peace would require neither rations, clothes, nor pay. His idea is to have a steam fire engine throwing a shower of bullets instead of water. A steam fire engine can throw 151½ lbs.—representing 2,440 Enfield rifle bullets—to a vertical height of one mile every minute, with a consumption of about 5 lbs. of coal and three gallons of water. These bullets would not require to be made up in cartridges, are indestructible either by rain or in the open field or damp in cellars, can be easily conveyed without fear of explosion. An increase in the weight of the projectile would increase both its range and force, and 2½ bullets might be used for a long range being propelled at the rate of 1,000 a minute. A machine with three parallel barrels could throw 2oz. shot at a long range from the centre barrel, and

1oz. shot (2,000 per minute) at short range from the side barrels.

We certainly have (says Mr. Bessemer) in the steam fire engine the irrefutable proof of great projectile power, with steam of only 150 lb. pressure. Such steam would rush into the atmosphere at a velocity exceeding 1,900 feet per second. Now a 2oz. lead ball presents a traverse area of 0.06 of a square inch, and consequently steam of 150 lb. pressure would impinge on it with a force equal to 90 lb. As the weight of the ball is only 2oz., we have a power equal to 720 times the work to be performed. It is fair to infer that under proper arrangements the bullet will acquire nearly the velocity of the issuing steam; but suppose that in practice it falls short of this velocity by some 300 feet per second; we should still have an initial velocity of 1,600 feet per second as compared with that 1,100 feet or 1,200 feet per second, which is the ordinary velocity of projectiles from the Armstrong gun.

An apparatus of this kind could be constructed far less costly and complicated than the ordinary steam fire engine. Mr. Bessemer further suggests a thin steel mantle in front of the machine, to protect it and the gunner from the enemy's fire; "universal motion" for the delivery tube, which could be directed on all sides as easily as the jet of a fire engine, and the combination of this system with that of the Edinburgh traction engine, which, if fitted as a bullet-throwing machine, would not only travel over the common road without horses, but would find its way over very rough ground, would convey stores of any kind to other machines, and, in addition to its own fuel and water, would carry 100,000 bullets for its own use. Mr. Bessemer, with prudent patriotism, reserves the details of the apparatus for the consideration of our military authorities.

**HISTORY REPEATING ITSELF**—It is a trite remark that history repeats itself. The present war affords a notable example. Lord Palmerston, writing in his diary long ago, ascribes the overthrow of Prussia in 1806 by Napoleon I. to the all-prevailing corruption and maladministration, combined with carelessness, presumption and incapacity, everywhere manifest, which had altogether sapped the strength of the nation. "The low moral tone of the Government," writes Lord P., "and the army of Prussia in 1806 had as much to do with the catastrophe at Jena as the bad generalship of their chiefs." They were outnumbered and out-generalled: the army, privates and officers, were thoroughly demoralized and mutinous; generals would not lead and men would not follow. The consequence was overwhelming defeat. Since then seventy years have come and gone, and the positions of the two combatants are reversed. France lies crushed and broken from the very same causes which were in operation against Prussia when Jena was fought. The lesson ought to be very easily learned, not only by France, but by onlookers at the fray. Blundering, incompetency and dishonesty, land a nation where France is to-day, and where Prussia was 64 years ago.—*Globe*.

An old veteran of Napoleon's grand army presented himself for enrolment with his five sons in Paris, a few days ago, and was rejected. The old soldier indignantly cried. "If you will not take me my sons shall not go, either, I would rather blow their brains out. Now the old man with his five children are serving in the first regiment of Zouaves.

### MISCELLANEOUS ITEMS.

The Austrian Government have officially approved of the Italian policy at Rome.

A large quantity of furs, believed to be infected with small pox, has been destroyed at Fort Garry.

The North Shore Railway Directors have asked the Quebec Legislature for an extension of their charter.

The Liberals in North Germany have prevailed in the elections thus far reported, but no details are given.

Latest advices from the North West state that the Indians are suffering terribly from the small pox, dying at the rate of fifteen a day. Many of the missionaries have succumbed to the fell disease.

The trial of the murderers of Henry Trail, the guard of the Penitentiary, took place on the 10th inst., at Kingston. The jury, after about forty minutes' deliberation, declared Mann guilty of wilful murder, and Smith of manslaughter.

The French and Italian lodges of Freemasons, imitating the example set by their Belgian brethren have forwarded circulars to the German lodges, begging them to use their influence for the purpose of effecting a speedy peace, and of deprecating any territorial cession by France. "This," remarks the *Allgemeine Zeitung*, "is another proof of the danger of cosmopolitan societies being misled in national concerns."

The Directors of the Great Western Railway of Canada have announced, in the London market, the issue of £760,000 six per cent. sterling bonds for the construction of the "Canada Air Line Railway." The bonds will be issued at the price of £96 per £100, at which the yield will be 6½ per cent. They will form a first mortgage upon the railway, and have twenty years to run, the interest being payable half-yearly at the London Joint Stock Bank.

An extraordinary field-piece has been submitted to the War Office. It is an engine which may carry at least a thousand barrels, and, constructed that the mere drawing back of the engine will, by a kind of self-action, pour charge after charge into the on-rushing enemy. The inventor is a working mechanic, and he offers his invention, unpatented, to the nation. The field piece will look like a drum carried between two wheels, with lines of barrels running out from the centre to the circumference.

**A GALLANT DEED.**—We have much pleasure in inserting the following paragraph, copied from the *Gibraltar Chronicle*.—"On the night of the 17th inst. (Sept.) a man fell from the mainyard arm of Her Majesty's steamship *Rapid*, on her passage from Tarragona to this port. He struck heavily against the gunwale of the boat, and fell into the sea. With the rapidity of lightning, one of the officers, Sub-Lieutenant W. B. Forbes, plunged in after the poor fellow as he drifted astern, and with great difficulty succeeded in supporting him until the boat could come up. So nearly, indeed, had his heroic self devotion cost Mr. Forbes his life, that when rescued both he and his burden were already sinking beneath the surface. When brought on board the man was perfectly insensible, having sustained a fearful gash on his head, and the gallant deliverer was more than half drowned. Such golden deeds are the glory of the service."