

The brakewheel and spur wheel are secured from moving edgewise by rings, *g g*. *Y* is the pulley which gives motion to the spur wheel or toothed ring, *G*. It is of the same diameter as *B*, and is fitted on *E*. This hub has a recess fitted in its face to receive a ring, *h*, next the disc, *F*. It has a number of spiral springs, *i i*, attached to its back, to force it out against the disc. *A A* are a pair of small bearing boxes—the one is on the shaft, and the other on the pulley, *B*; these boxes carry the small spindle, *I*, which has a pinion, *J*, gearing into *G* at one end, and the bevel pinion, *j* gears into the one *S*, on the adjusting screw, *c*, of the eccentric at the other end. *K K*, fig. 1 are standards on the engine framing. *M* is a pulley on a small transverse shaft; it receives motion by a band, *k*, from pulley, *B*, on the main shaft. *N* is another pulley of greater diameter which communicates motion by a band, *l*, to the pulley, *Y*. It also carries a bevel wheel, *O*, for driving the governor. *P* is the governor main spindle hung in bearings, *m*, in the standards. It carries a bevel wheel, *Q*, driven by the one, *O*. *R R* are the weighted arms, and *n n* (one shown), small rods through which they operate on the slide socket at the inner end of *V*, raising it as their speed increases and *vice versa*. The governor is driven at the same speed as the crank shaft, the difference between the diameters of the pulleys, *B M*, being compensated, by the difference between the bevel wheels, *O Q*. On the shaft round the brake wheel, *D* is encircled a friction strap (not shown in fig. 1) made of light spring steel, having a tendency to free itself. Its two ends are secured by pins, one of which forms the axis of the lever, *T*, which is connected by a rod, *X*, to the lever, *U*, whose fulcrum is the standard, *W*. The forked end of *V* embraces the sliding socket, *P*, of the governor, the slightest motion of which, up or down, causes the lever, *V*, to act on the brake lever, *U*, which tightens or loosens the steel strap on the wheel, *D*, around shaft *A*, and causing the said spring brake to produce more or less friction on the brake wheel, *D*. The pulley, *Y*, being driven by a larger pulley than the one *B*, moves faster, and must turn upon or around the boss, *E*; or by the ring, *h*, on the disc, *F*, cause it and *G*, and the brake wheel, *D*, to turn round on the shaft. When less friction is produced than that described, on the brake wheel (the shaft and pulleys revolving in the same direction) the pulley, *Y*, drives *G* in advance of the crank shaft, driving the pinion, *J*, the spindle, *I*, and bevel pinion, *j*, in such a way as to turn the screw, *c*, in a direction to decrease the eccentricity and throw off the eccentric; but when more friction is produced on the brake wheel than by the ring, *h*, on *F*, the wheel, *G*, is retarded, and the shaft moves in advance of it. The pinion, *J*, spindle, *I*, and bevel wheel, *j*, then revolve in the opposite direction to that last described, causing the screw, *c*, to increase the throw of the eccentric which is connected to the cut-off—the greater the throw of the eccentric, the quicker is the steam cut-off. The eccentric is set to cut off the steam at the ordinary pressure for the work of the engine, and the brake wheel and its gearing revolving at the same velocity as the crank shaft, therefore the spindle, *I*, and the screw, *c*, and consequently the eccentric, remain stationary, but as soon as the steam increases, or work is taken off the engine and its velocity increased, the arms, *R R*, of the governor move laterally, the forks of lever, *V*, rises with *P*, the rod, *X*, is depressed, and the lever, *U*, acts upon the friction strap tightening it, and increasing the resistance on the brake wheel, *D*, thereby retarding the motion of *G*, and giving motion to pinion, *J*, and spindle, *I*, so as to increase the throw of the eccentric; when the steam falls, or the work is increased on the engine, and the speed is decreased, the force of the governor lowers the inner end of the lever, *V*, raising up the lever, *U*, taking off the friction of the brake by loosening the steel strap, thereby taking off the friction, and allowing the spur wheel to move on in advance of the crank shaft to give motion to the spindle, *I*, so as to lessen the throw of the eccentric. The throw of the eccentric, and the cut-off are therefore governed by the pressure of the steam and the amount of work upon the engine, thus the engine is made to work with a very uniform motion—more so than can be obtained by common modes under

varying pressures, when the engine is governed by the throttle valve.

The apparatus is capable of considerable modification without any alteration of its principles. The claim will be found in our list of the 1st of last month (No. 6).

More information may be obtained by letter addressed to the patentee, 161 William street this city.

Foreign Correspondence.

LONDON, Oct. 16, 1851.

The Great Exhibition is closed, and that wonderful fabric, the Crystal Palace—that creation of Paxton, which was the admiration of all who saw it, and the greatest wonder of all—is no more. The hammer, the chisel, the wrench, and the driver are now busy in its demolition, and the place which lately embraced the works of art of all nations, and whose passages were sometimes thronged with the living tide of an hundred thousand souls, will soon exist in imagination only, for next Spring the grass will be growing where stood the "Mountain of Light," and the leaves of the trees will be rustling, in another month, where rustled the satins of Lyons and the shawls of Cashmere.

In looking back upon the scene, I cannot but consider the Great Exhibition as the most wonderful creation of genius ever presented to the world. It was well to remove the Crystal Palace: it will be something to speak about to future generations.

The Exhibition closed yesterday. A spacious platform was erected on the site of the great Crystal Fountain, which once sent its joyful jets dancing upwards, but which was now hushed in sleep forever. The platform was covered with scarlet, and had seats for the Royal Commissioners. In the middle was a splendid ivory throne, a present from the Oriental Rajah of Travancore. The area of the transept had been reserved for the Foreign and Local Commissioners, the Jurors, the lady exhibitors, and others entitled to a special privilege of entry, and seats for them were disposed in such a manner round the platform that they had the utmost facilities which the construction of the building afforded for seeing and hearing the proceedings. Exhibitors, members of the Society of Arts, chairmen, secretaries, and members of local committees, and all others not entitled to enter at the south entrance, were admitted at the eastern and western ends of the building, and of course took up such positions in the nave, or the galleries overlooking it, as appeared to them best adapted for securing a good view of the ceremony. To help them, the various flags and banners with which the interior was ornamented, were all struck. Precisely at 12 o'clock the Royal Commission, headed by the Executive Committee, moved in a species of procession from their apartments to the platform. They were accompanied by the Bishop of London in his robes, and on their appearance the immense assembly rose and welcomed them with loud cheers, while the choir performed the first verse of the National Anthem.

Viscount Canning, on behalf of the Juries, read a report of their proceedings; it is of considerable length, giving the details of the Constitution of the Juries, the plan of operations adopted, &c. Each of the 34 Juries consisted of an equal number of British subjects and of foreigners. The British jurors were selected by her Majesty's Commissioners from lists furnished by the local committees of various towns, each town being invited to recommend persons of skill and information in the manufacture or produce for which it is remarkable. The foreign jurors were appointed by authorities in their own countries, in such relative proportion among themselves as was agreed upon by the foreign commissioners sent here to represent their respective Governments.

Prince Albert received the Reports, and made a very excellent and well-prepared reply, at the close of which the second verse of the National Anthem was performed with great energy; after which the Bishop of London offered up an appropriate prayer of thanksgiving. The Hallelujah chorus formed an effective termination to the proceedings of the day, and the Prince and the Royal Commissioners took their departure amid the hearty cheers of the assemblage. As soon as they were gone, the barriers were removed, the

seats and other temporary arrangements were swept away, and the stroke of hammers in every direction told that the work of removal and demolition had fairly commenced. For special useful discoveries, Council Medals of gold were granted; the Jury Medals were beautiful bronze. The American list is exceedingly respectable, and although our Department did not show so well as I could, or as all Americans could have desired, still it has made its impress on the world, it has spoken in deeds. Five Council Medals were granted to Americans, and some more should have been granted, especially one for Day & Newell's Lock. I greatly blame the Americans on the Jury before which it came, for not demanding a Council Medal for it—it was a shame that one was not allowed.

I send you the whole list of American prizes. [We have not room for their publication—the List of Council Medals we have published.]

The Meat Bread of Mr. Borden is greatly esteemed by those engaged in nautical affairs here; they well know the value of it for long voyages. McCormick's Reaper has made the fortune of its inventor, who has been invited to English Agricultural Dinners, and toasted as a benefactor to the English Farmer. The Reaper is of greater importance to the English than the American farmer.

It is reported that there had been some quarrelling between the Juries and Councils, but it tells well for all that there has been so little of this.

Messrs. Paxton, Fox, and Cubitt are to be made Knights, so it is reported. Various reports have been floating round, about the Building—one that it was to be re-built in another Park, but the most singular one was a notice in the Daily News, announcing that the erection of a Crystal Palace had been commenced on a smaller scale in New York, and that communications have been entered into with Austria, the Zollverein, Italy, and various other Continental estates, suggesting the transmission of their articles to America for the purpose of exhibition and sale. This I cannot believe; it would not be prudent to enter upon such a scheme so early after the World's Fair; I expect, however, to see a World's Industrial Exhibition in New York at some future day, and it can be made to rival the one just ended in greatness, but not without great preparation. I question if any other nation but Britain could, at present, have got up such an exhibition. The wealth at command, and prestige of power in Prince Albert to wield it, were things altogether favorable to the enterprise in England. But to-day, all that remains of the great pageant which, for the past five months, concentrated the curiosity of the whole world, lies only in its recollection, and the results which must proceed from it. I believe that its effects will go down for good to other ages. I hope it has taught all those who visited it, from whatever country, that it is perfectly possible for all men to live in peace, and to cultivate the arts of peace with a desire to excel and emulate, but at the same time to do so to mutual advantage.

A large surplus sum has been left in charge of the Commissioners, after paying all expenses. In a pecuniary point of view, England has altogether been the gainer. I suppose that she is a gainer by some millions of pounds at the expense of others, but at the same time she has made great sacrifices also, which are not accounted for in the bill of expense. I had hoped that the surplus money would have been divided among the juries to divide among exhibitors, to pay some of their expenses; this I believe would have been the most just way to have used it.

I will continue in Europe for some time longer, and may, from time to time, furnish you a letter containing things of interest relating to science and mechanics. EXCELSIOR.

The Patent Office in Danger—To American Inventors.

As noticed by us last week, we will proceed to quote some extracts from the patriotic article of Mr. John C. F. Salomon, published in the Washington Union. Addressing himself to inventors, he says:—

The undersigned, one of your fraternity, takes the liberty of addressing a few lines to you from the seat of general government.

I am sorry to inform you that, after all your trouble and expense, you are likely to lose the use of the east wing of your noble Patent Office building, now nearly completed. It is now your imperative duty to be up and doing something effectual to defend your rights against the attacks of those who have no sympathies for you. Notwithstanding it is well known that this building was designed and erected for the especial use of the Patent Office, and that it was (in part) paid for out of the patent fund created by your contributions, and that the act of Congress of 1836, authorizing the erection of the building, is very clear and explicit, yet the present Secretary of the Interior, Hon. A. H. H. Stuart, without right or reason, I regret to say, intends to deprive you of your building, and appropriate it to the use of his new Department of the Interior, created within the past three years. I understand that he has declared that it is his intention to take possession of the Patent Office building before the meeting of the next Congress, and I believe he will carry his intention into effect, unless the President of the United States forbids the commission of so great a wrong on our rights; and this, I believe, Millard Fillmore will do as soon as he examines the several laws of Congress making appropriations for the erection of this building, and becomes well acquainted with the whole subject. The President will at once perceive that the Secretary of the Interior has no more right to take the Patent Office building for the use of the Census Bureau, Pension and Land Offices, than he has to take it for the penitentiary, which is also under his jurisdiction.

Sixteen years ago I was here for a patent for a new steam boiler. Since that time I have taken out several patents for new and useful inventions. In the winter of 1835—'36, I was in the Patent Office almost daily, and well remember the seven thousand beautiful models which were all consumed by the fatal conflagration of the 15th December, 1836, which entirely consumed the General Post Office building, wherein was contained the United States Patent Office. I also remember examining the drawings of the plans for a new fire-proof building for the Patent Office, prepared by William P. Elliot, Esq., architect and engineer, formerly of the Patent Office; and, being favorably impressed with the grandeur, simplicity, and fitness of the design, I begged the author to stick to his plan, and have it executed if possible. I was glad to learn that it was subsequently adopted by the Hon. H. L. Ellsworth, then Commissioner of Patents, the committees of Congress, and the President of the United States, General Jackson. I am much pleased to find that this plan is now being carried out by the government; and when completed according to the original plan, as published in the "Scientific American" of the first of February last, it will undoubtedly be the noblest structure of the kind in the world.

The purpose for which the several rooms and galleries were originally intended should be adhered to as closely as possible.

Congress should make a sufficient appropriation to finish the whole block as soon as possible, as it will be all required for the use of the Patent Office long before it can be completed. In less than half a century, I venture to say, the model rooms of the entire block will be densely crowded with models, designs, and specimens. The millions of ingenious foreigners from the European continent who are now hurrying to our shores will greatly increase the list of applicants for patents. Already nearly three thousand models are annually received, averaging nearly one cubic foot in size. In a few years this number will be more than doubled. Then where shall we find room for our models, if the Secretary of the Interior takes possession of the rooms for the accommodation of his army of clerks, who have nothing to do with the Patent Office? As a patentee and contributor to the patent fund, I solemnly protest against this meditated violation of the laws of Congress and the rights of inventors, on the part of the Secretary of the Interior. JOHN CHS. FR. SALOMON.

[We have not the same opinion as Mr. Salomon, about no blame being attached to the present Commissioner of Patents.