

COMMISSIONERS TO THE FRENCH EXHIBITION.

The Washington *Star* says there is a considerable quarrel between the thirty Commissioners appointed to represent the Government of the United States at the Paris Exposition. A plan has been suggested that ten of the Commissioners shall be paid and twenty unpaid—the ten to be the controlling directory, and the twenty to be a subordinate as well as a superfluous tail to the kite. The ten fortunate ones are to be selected by Congress, but the apprehension is that they have already been designated by the Secretary of State.

If it be true, as the *Star* asserts, that the Commissioners have already commenced to quarrel about rank, the contest is likely to break out more fiercely when all these official dignitaries get to Paris. The trouble, it appears to us is, that there are too many Commissioners, and so far as the appointment of paid ones is concerned, they have not been selected as a general thing with reference to qualification for the duties expected of them. There is not in the whole list of paid Commissioners a practical scientific mechanic or engineer. They are generally ornamental gentlemen of recognized intelligence and high social position. These ten paid officials are expected, of course, to perform all the labor of the Commission—the honorary appointments being not only useless, but liable by virtue of their position, to do injury. Thirty Commissioners! Of what possible service can they all be? Twenty extra officials swelling about Paris and other parts of Europe under the title of "*Commissaire Etranger*," will make our country appear ridiculous.

We hope Congress will abolish this honorary caudal appendage, and provide only for a limited number of paid Commissioners who possess the qualifications necessary to make the exposition valuable to our country in a practical sense.

Editorial Summary.

BREECH-LOADING SMALL ARMS FOR NEW YORK.—The State Board of Officers on this question recorded the following results:—The Robert breech-loader fired eighty-four balls in six minutes (fourteen in one minute), all striking inside the target, and penetrating fifteen one-inch planks. The Sharpe's rifle and carbine expelled one hundred balls in less than seven minutes, and penetrated the thirteenth plank. The Milbank rim-fire gun expelled ninety-nine balls in six minutes and a half, penetrated the eleventh plank and sent nine balls inside the target in one minute. The Lampson gun fired twelve balls in one minute, eight of them striking inside the target. Balls' carbine expelled seventy-five balls in nine minutes and a half, using the magazine and making twenty-four blanks. The Prussian needle gun was tested, and proved in every way inferior to recent inventions. It sent a ball through the eleventh plank, and did not develop a rapidity of fire beyond six or seven per minute. The Poultney gun penetrated the thirteenth plank. The Remington breech-loader fired one hundred shots in six minutes and fifty-five seconds, and sent a ball through the eleventh plank. It expelled eleven balls in one minute, six entering the target and five striking outside. The Board will reassemble for final examination and trials at the State Arsenal on Tuesday, the 19th day of February, at 10 o'clock A. M., those having arms which they desire to have entered for examination will present them on or before that day, and it will be necessary that for each arm presented 200 cartridges be furnished.

CHINESE IMMIGRATION.—The opposition to the Chinese on our Pacific coast is giving way before the consideration of commercial amity with China, and the growing importance of cheap and plentiful Chinese labor in the manufacturing and other industries of that region. The woolen mills, it is admitted, could not have succeeded but for the Chinese, and railroad building has a similar need of them. The leaders of public sentiment in California now advocate fair treatment of the (fallen) celestials, and take pains to show that their tenacious attachment to their native country, from which they never transfer their political relations, and to which they never fail to return, alive or dead, is sufficient guaranty against their entering as a further corrupt element into our governing population.

INCREASED TELEGRAPHIC FACILITIES.—Mr. Cyrus W. Field, has gone to England, on the business of the Newfoundland Telegraph Company, to order a submarine cable from Placentia Bay to Sydney in Cape Breton, or to some point nearer on the coast, where it will meet the Western Union lines, thus saving the risk of the long land lines in Newfoundland. These lines, however, are to be kept up and as soon as Spring opens, a new line is to be built over the old road cut through the forests by the Newfoundland Company 10 or 12 years ago. There will then be three perfect lines, which should prevent any failure hereafter in the prompt transmission of news. With these improved land lines, and the new submarine cable to Cape Breton, the chain of electric communication with Europe will be complete.

STEAM DREDGING.—A late number of *The Engineer* illustrates and describes a very powerful steam dredging machine in use on the Clyde. It has an endless bucket chain or elevator, containing thirty-nine buckets of thirteen cubic feet each. The great arm or bucket frame which holds and directs this moving column of deep diggers, is 91 feet long, with its upper end attached to a frame of adjustable elevation and its lower end on the bottom to be excavated. The machine lifts 300 tons of earth per hour. The hull is of iron, length 161 feet, breadth 29 feet, and depth 10 feet 9 inches. The engine is a single cylinder marine engine of 75 horsepower, 48 inch cylinder and 3 feet stroke.

NEUMEYER'S INEXPLOSIVE GUNPOWDER.—inexplosive, that is, except under confinement—has been subjected to a microscopic examination by an inquisitive Englishman, who finds that it differs from ordinary gunpowder, in being a coarse instead of an intimate mixture of the same materials. The ordinary powder, having been macerated to a thin paste, appeared as a uniform grayish mass, the particles of charcoal and sulphur being indistinguishable; whereas the Neumeyer powder under the same conditions appeared to consist of roughly intermingled grains of charcoal and sulphur. The ingredients being thus imperfectly mixed, a slow rate of combustion is the result: but in confinement, the gases liberated by this slow combustion become explosive. It seems evident that this result cannot approach in force or quickness the explosion of good gunpowder. An experiment reported with a shot gun, if true, confirms the apparent worthlessness of the invention: a charge of shot at thirty yards hardly reached the plate, and the few that struck it were hardly flattened at all. An experiment in blowing up a small building, also confirmed the theory: the fizzing and smoke of the powder being first observed, and the roof being lifted by the gases, some seconds later. Official tests will soon give us the truth of the matter.

CHEESE FOR MEAT.—We remarked not long since upon the superior nutritive qualities of this food, as evidenced by the experience of laborers in certain countries, where it forms the strongest staff of life. We have since observed certain researches of a French chemist, M. Charles Mene of Lille, from which we learn that certain cheeses, specified as Dutch, Gruyere and Roquefort, contain from 26 to 40 per cent of nitrogenized matters, which are considered the most highly nutritive constituents of food. Consequently these cheeses are from twenty-five to a hundred per cent more nutritive than bread or meat, which is set down at 22 per cent of nitrogen. In the combustible or fatty elements for heating the body by respiration, cheese yields only to butter or other fats. Again, in point of mineral nutrition, cheese is found pre-eminent, containing 7 to 8 per cent of ashes, whereas meat and bread contain only one per cent. The very richness of this article, however, prejudices its utility in delicate stomachs, where it is often found indigestible. The strongest food suits only the strongest digestion. The attention now given to an improved, economized and increased manufacture of cheese, is justified, and will naturally be stimulated, by these facts.

FROM BANE TO BENEFIT.—Owners of copper-smelting works in England have been repeatedly mulcted in damages by their neighbors for the pernicious effects of copper smoke upon crops and cattle, and an act was passed at the late session of Parliament requiring such parties to consume their smoke or the deleterious parts thereof. The arsenical deposits from such works have completely denuded of vegetation considerable portions of land in their vicinity. A process has now been devised and set in operation by Mr. Vivian, a copper smelter and member of Parliament, by which the copper smoke is condensed for the manufacture of sulphuric acid and is employed with phosphates, to produce a valuable superphosphate for fertilizing purposes, said to be almost unequalled for green crops. Mr. Vivian expresses confidence that he will be able to supply fertilizing matter from his works for 40,000 acres of land.

AMERICAN CEREALS FOR THE EXHIBITION.—A circular from the Commissioner of Agriculture recites the resolution of Congress to provide for the exhibition of the cereal productions of the United States at the Paris Exposition, and urges all who have fine specimens of wheat, corn, and other grains, to forward small samples by mail forthwith, each distinctly marked with the name, donor's name, place, county and state where grown. Addressed to the Hon. Isaac Newton, Commissioner of Agriculture, Washington, D. C., they will go free of postage. None should be sent by express, unless prepaid, as no money is appropriated for such expenses. Only a few days will be available for action, and not a day should be lost by those who wish to be represented in the Exposition.

THE FRENCH PINE WOOL.—This curious novelty in manufacture, lately noticed among our patents, is said to be already in active manufacture and sale in Paris. As wadding it is recommended as adding to those usually demanded in that article highly medicinal qualities for catarrh, bronchitis, sore throat, rheumatism, etc. As mattress stuffing, it is but half the price of wool and hair, and better still, its resinous principle gets it the abhorrence of bugs. As flannel for all purposes, it peculiarly promotes the functions of the skin. The etherated pine oil prepared at the same time is highly praised as an application for incipient paralysis and apoplexy, recent burns, worms, fits, etc., etc.

COMFORT FOR HOUSEWIVES.—In No. 11, Vol. XV., we gave an illustration of White's Mop Wringer. It is, as we stated, a great relief to the housewife in the unpleasant work of floor washing. We learn that wherever introduced it has been well appreciated, and that rights to a large extent have been already sold. We do no more than justice to our readers as well as to the inventor in calling attention to his advertisements on other pages. It can be applied to any common bucket, and obviates the necessity of soiling the hands.

AMERICAN MANUFACTURES IN EUROPE.—Mr. Ross Winans has received a contract from Russia to build cars and locomotives for that Government. Messrs. Smith, Hall & Buckland, cartridge makers, of Springfield, Mass., have just shipped 80,000 cartridges for the Austrian Government, through the firm of Baumgartner & Co., Bucharest. If satisfactory, the firm expect an order for not less than a million.

ABSORBENT QUALITY OF IRON.—Recent investigations by Mr. Graham, the master of the British Mint, have led to the conclusion that pure iron is capable of absorbing, at a red heat, and of retaining when cold, 4-15 times its volume of carbonic oxide gas, and that wrought iron in the course of its preparation may thus occlude six or eight times its volume of the gas, which is carried about with it ever after. Mr. Graham found in his experiments that a wrought iron wire gives off this gas freely at a red heat, and again, at the same temperature in an atmosphere of carbonic oxide, as freely absorbs it. The further pursuit of this suggestive discovery will very likely have an important bearing on the improvement of iron and the manufacture of steel. The decomposition of carbonic oxide at a high temperature for the production of steel, with the fact developed by Mr. Graham, that the gas is most freely absorbed by iron at a low red heat, suggested to him the possibility that the conversion might be promoted by frequent alternations of temperature.

ICE MACHINE.—A simple instrument for making artificial ice is now manufactured in Paris, by which a beautiful cylinder of ice is produced in ten minutes, or a bottle of wine or other article can be reduced to the freezing point of water in the same receptacle. The instrument consists of two metallic cylinders united, one within the other, the space between them being devoted to the freezing mixture, and the interior of the smaller cylinder, to the water or other article to be cooled. These being introduced, the cover is put on, and the cylinder is rolled to and fro on a table by the hand. The chemicals consisted formerly of one part each of water, sub-carbonate of soda and nitrate of ammonia: but for the latter a cheaper salt not mentioned is now substituted, and the mixture is put up in quantities sufficient to make seven lbs. of ice (if we reckon correctly from the indirect statement before us) for 50 centimes or less than one dime. The instrument costs ten francs. It is called the *glacier roulante*.

THE GREAT CALIFORNIA RAIN continues to develop "items." A meteorologist of Sacramento (Dr. Logan) states that the fall at San Francisco was at the continuous average rate of 0.386 inches per hour for twenty hours—a greater rain than he had been able to find on record in any part of the world; yet which sinks into mediocrity in comparison with a rain reported at Nevada City a week later (Dec. 27th) when three and seven-eighths inches fell in less than three hours. The course of the storm was east-north-east until it reached a certain point, where it turned nearly at a right angle and proceeded a short distance, after which it made a second turn and resumed its former direction. In a distance of less than 100 yards, 70 or 80 large trees were counted, that had been prostrated by the storm. A cedar four feet in diameter was twisted into laths.

GOING TO SCHOOL.—Nearly as many children are found at school, on an average, in the Quaker City (according to the *Public Ledger*) as in New York, although the rolls of the latter place exhibit three times as many pupils. The figures are, in New York, 222,527 enrolled, 91,986 average attendance: Philadelphia, 75,833 enrolled, 65,017 in attendance. Better discipline at school or at home, or in both places, alone can account for this difference in favor of Philadelphia. We suspect the difference is more at home, than at school; yet the pitiful average of a little over four months attendance *per annum* to each pupil in the New York schools, is a phenomenon which the Legislature would do well to look into before declining to interfere with our present elective system. The management of education is the very thing of all others least proper to be committed to the uneducated mass of mankind and to the corrupt influences of ward politics.

AMERICAN INDUSTRY.—The value in gold of the annual products of the people of the United States for the year 1866 was in round numbers as follows: those engaged in agriculture \$1,609,000,000; manufactures, including all processes between the raw material and consumption, \$917,000,000; mining, \$100,000,000; fishing, \$13,000,000; hunting, \$2,000,000; wood cutting, etc., \$25,000,000; domestic commerce, \$1,500,000,000; foreign commerce, \$190,000,000; net annual earnings or gross increase of money value derived from exchanging products with foreign countries, engaging in improving the face of the country and subduing it to the purposes of society, \$2,400,000,000; total in gold value, \$6,756,000,000, the same reduced to currency, 9,458,000,000.

INDIA is endeavoring to spin its own cotton in modern fashion. Among the earliest countries in the primitive growth and utilization of this staple, it is thus coming in among the latest, though by no means the last, in economizing it by machinery. The Goosery Cotton Mills, lately started by a company in Calcutta, contain or will contain when fully furnished, 15,000 spindles and 144 looms; the surplus of the spinning to be sold as twist. It already gives employment to some 280 women and boys, and its products meet with a ready sale at prices fully equal to Indian cotton goods manufactured in England.

DE-PHOSPHORIZATION OF IRON.—Mr. Warren De la Rue (Eng.) has patented an invention which consists in the introduction of lead, metallic or oxide, into the converting vessel so as to be thoroughly diffused in the fluid metal, combining with the phosphorus in the iron, and the compound driven off by oxidation. Molten lead is introduced as soon as the blast has been turned into the converting vessel. Compounds are entered with the blast, in the shape of powder.

FRICTION CLUTCHES.—Volney W. Mason, Providence, R. I., who manufactures a friction clutch that is worth having, says in a letter to us "I wish you to continue my advertising until forbidden, as yours is the most profitable that I have." Mr. Mason confirms the testimony of hundreds of others.