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No. 331,

For the Week ending May 6, 1882.

Price 10 cents. For sale by all newsdealers.

Table listing contents of the supplement, including I. ENGINEERING AND MECHANICS, II. TECHNOLOGY AND CHEMISTRY, III. SOCIETY MEETINGS, IV. ELECTRICITY, MAGNETISM, ETC., V. ASTRONOMY.

LIGHT, HEAT, AND POWER AT LITTLE COST.

Among the most interesting exhibits to be seen at the Electrical Exhibition now going on at the Crystal Palace, London, is the new secondary electrical battery of Sellon and Volkmar, the operation of which appears to mark the opening of a new era in electrical progress.

For example, anybody who chooses to put a windmill upon his house or barn will be able, by means of the secondary battery, to light his dwelling at night, supply it with heat and hot water for washing and cooking, drive sewing machines, churns, washers, pumps, keep electrical carriages that will run anywhere about town without horses, do his plowing, draw mowers, reapers, seeders, propel boats, and perform almost any sort of work that may be required.

A trial and exhibition of the new battery was lately given at the Crystal Palace, before a large number of distinguished guests, among whom were Mr. Warren de la Rue, Professor Crookes, Professor Hughes, Professor Dewar, Dr. Huggins, Alexander Siemens, Professor Thompson, Professor Adams, Mr. Sellon, the principal originator of the invention, was called on for a speech and gave the following particulars.

In this new form of battery all the clumsy wrappings are removed, and simple perforated plates are used, the result being the production of durable and more powerful cells than heretofore.

Of the sizes now made, one standard size of the dimensions of forty-three one hundredths of a cubic foot, and containing of metallic composition about 62 pounds, will yield when properly charged an aggregate amount of current equivalent to fully one horse power of electrical energy for one hour, giving off from 350 to 400 amperes at any required rate up to 40 amperes per hour.

He then proceeded to request that a scientific committee should be appointed to examine and verify his statements and test the battery.

"Now as to the practical application of these batteries. To my mind their employment will be almost unlimited. I can conceive no installation of domestic electric lighting to be complete without them, whether as a supplying or as a regulating medium.

"The application of the forces of nature, such as wind, running and tidal water power, will now, doubtless, receive more engineering attention than heretofore; and electrical energy, which upon its generation can now be stored and reserved for use as required, must become a much sought for and highly prized source of power.

quired; for the future he need only set the charging of the batteries in action during the day, and my store will be ready for evening use without fluctuation or intermission.

The practical exhibition of the new battery is described as having been attended with great success. Many lights were shown, the brilliancy of which could be readily increased or diminished by switching on or off one or more cells of the battery.

THE PROTECTION OF SMALL INVENTIONS.

A characteristic feature of the American patent system, and one toward which the patent laws of other countries have been steadily approximating, is the encouragement which it offers to all men, poor as well as rich, to make inventions and publish them to the world under the protection of letters patent.

Such results are possible only where the inventors' rights, easily secured, are rigorously guarded. One of the strongest safeguards to patents upon easily marketable inventions of general utility is the law which makes the buyer of infringing devices measurably responsible for the wrong done the rightful patentee, thereby spoiling the market for dishonest and unlawful products.

The chairman of the Senate Patent Committee strenuously urged the passage of this bill; but the objections to it were so strong that it was withdrawn, it is to be hoped permanently.

A still more reprehensible attempt to remove the legal safeguards of patentees is said to be favored by the Patent Committee of the House. According to the Evening Post of April 25, the committee that day directed a favorable report to be made to the House on a bill providing that no action for damages or proceeding in equity shall be sustained, nor the party held liable under sections 4919 or 4921 of the Revised Statutes, for the use of any patented article or device, "when it shall appear on the trial that the defendant in such action or proceeding purchased said article for a valuable consideration in the open market."

It is incredible that the House can lend itself to the furtherance of a measure so palpably intended to lay the property rights of patentees open to general invasion. Still less possible is it that both Houses can agree to such an unjustifiable reversion of the spirit which has thus far ruled in American patent legislation.

BESSEMER'S BRONZE POWDER.—HOW THE PUBLIC GAINS BY GRANTING PATENTS FOR INVENTION.

About forty years ago Mr., now Sir Henry Bessemer, had occasion to buy some bronze powder, for which he was charged seven shillings (about \$1.75) an ounce. On examination he found that the metal of the powder was worth less than a penny an ounce.

Having small faith in the adequacy of the protection rendered by the patent laws of England as administered at that time, Mr. Bessemer determined to keep his invention secret. He made working drawings of the machinery, and had the various parts constructed by different machinists in Liverpool, Manchester, Birmingham, and London, so that no one should be able to guess what the entire machine was intended to be.