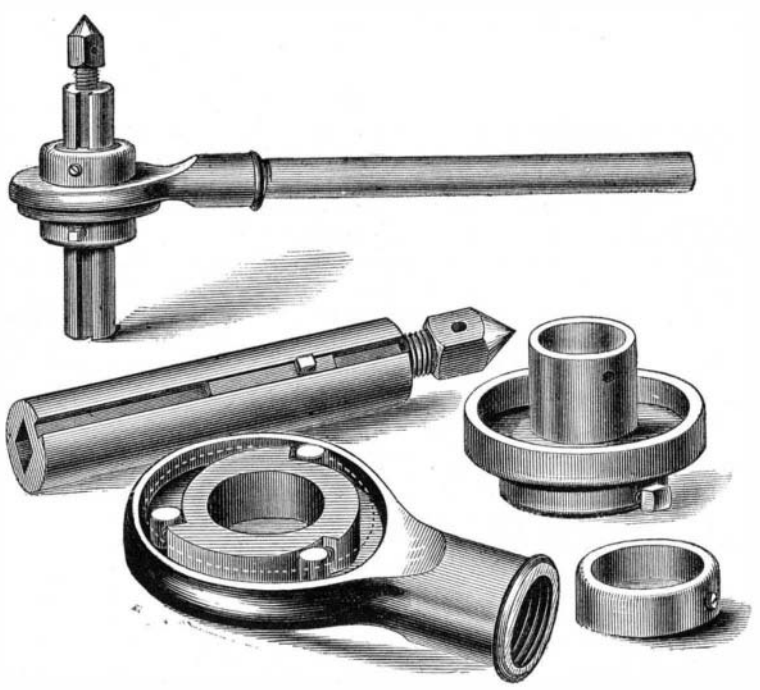
IMPROVED CLUTCH DRILL.

Little explanation, in addition to our illustration, is needed to show the action of this invention. By communicating the motion of the lever to the drill spindle by means of a friction clutch, the strain is distributed all around the spindle, and the liability of the drill, when acted upon on one side only, to swerve from the perpendicular is prevented. The merest possible motion of the lever moves the drill; and it will be seen that the clutch can be slid lengthwise on the spindle, allowing the latter and the lever to work clear of obstructions. The inventor claims that, by using cast steel as a material, he has produced the best and cheapest drill stock now in market, and the only one which uses friction as a means of communicating the motion, and which has, consequently, the advantages above mentioned.

For further information, address Mr. George W. Gill, 405 Commerce street, Philadelphia, Pa.



GILL'S CLUTCH DRILL.

Value of Foreign Patents.

In Europe the American origin of an invention is looked upon as a sort of guarantee that it is a good one, and those inventors who have, in addition to their American patents, secured patents in Europe have generally realized a larger profit from them than from those obtained at home. The reason of this is obvious when we consider the large amount of capital invested in the manufacturing branches of industry in England, France, and other European countries, and the competition which is naturally created thereby. Under this state of affairs it will readily be seen that the monopoly or control of any special branch of industry will, in a measure, free the manufacturer from the incubus of competition, and enable him to make a larger per cent upon his invested capital.

Cheap manufactures beget cheap labor and competition begets cheap manufactures. Therefore it is policy for the manufacturer to secure a monopoly of some branch of industry which he can manage and control, independent of his neighbor and competitor. In the United States, our manufacturing business has not yet resolved itself entirely into the hands of large manufacturers, but is divided up among a large number of small manufacturers who are not able to control more than a limited patronage. It would not, therefore, always justify them to invest in patent rights; and being small manufacturers, there is no inducement to get up such a close competition in business as would reduce their profits. The inventor depends mostly upon supplying the wants of the manufacturers, and it therefore behoves him to secure his inventions where the largest manufacturers and the closest competitition is found, and it is there he will realize the largest profit from his invention.—*Mining and Scientific Press.*

DOWN HALL, NEAR HARLOW, ESSEX, ENGLAND.

This mansion, the seat of Sir H. Selwin Ibbetson, Bart., M. P., occupies the site of the former house, once the residence of Prior, the poet, of which, however, nothing remained of the smallest architectural interest. Building materials of a good character being wanting in the neighborhood, and the site being upon an excellent gravel, it was determined to build the whole of the walls in concrete. The quoins, cornices, and columns, dressings of openings, etc., are in stone, and it has been especially sought to avoid giving the forms of stone work to any of the concrete. The plain surfaces, which alone are treated as concrete, are divided into panels, the stiles being plain Portland cement and the panels rough cast with fine sea shingle. The decorative panels and two horizontal friezes are executed in sgraffito. The internal arrangements offer no special features except the entrance hall, which, being of very large area and only of the same hight as the reception rooms, and therefore requiring to be broken up, is treated as a Pompeian atrium, the columns offering great facilities in the construction of the upper floor. Mr. F. P. Cockerell was the architect of the house, which is important not only as a fine specimen of construction in concrete, but as a most elaborate and handsome dwelling of the best modern type.

A Butter and Cheese Exchange.

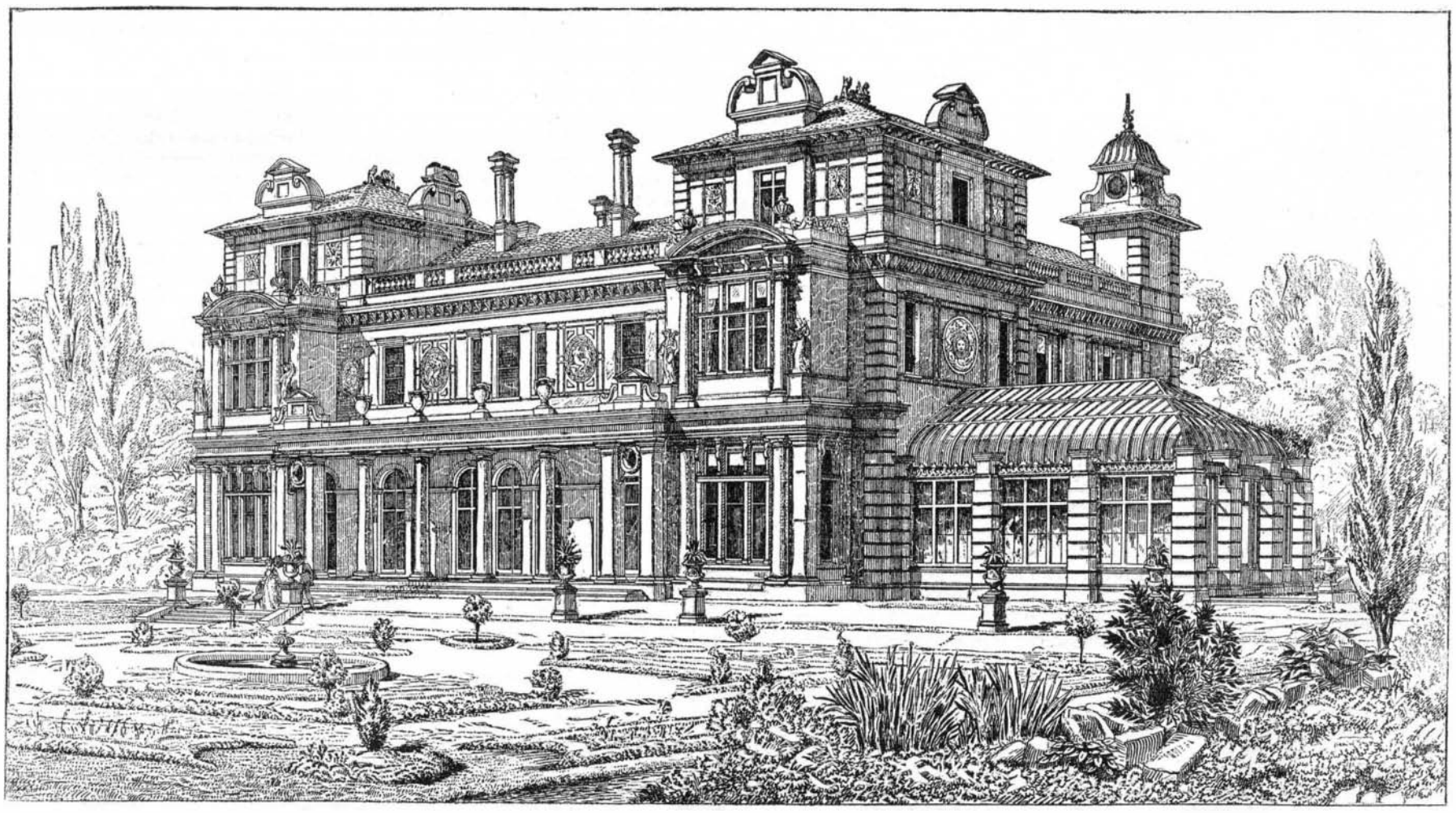
A new exchange for the butter and cheese dealers of this city was formally opened, on the 10th instant, in the large building at the corner of Reade and Greenwich streets, owned and occupied (as a sugar refinery) for many years by Messrs. R. L. and A. Stuart. The location being near the North River, by which most of these products arrive, and the building having been refitted to accommodate the business, the promoters of the enterprise look forward to advantageous results to the trade generally. From facts gleaned at the opening ceremonies, we are able to present some statistics of the dairy and provision products, which, by their extent, surprised us, and will be new to many of our readers.

It is estimated, from the present average of receipts from the 1st of May last, that there will arrive at the piers of the Hudson, during the current year, 3,500,000 packages of butter and cheese, of the aggregate value of $50,000,000, while the value of wheat is estimated at $24,000,000, corn at $26,000,000, flour at $20,000,000, cut meats at $12,000,000. It will thus be seen that dairy products and provisions represent by far the largest amount of business in the produce trade.

The Electric Light.

Up to the present time, as is well known, the electric light has been used only for lighthouses, as an electric sun illumination for signals, or on the stage, where a strong light may be required without regard to cost; but thus far it has been quite impossible to employ it for lighting streets or houses. By the old method the electric spark was passed between two points of charcoal, each attached to a copper wire connected with an electro-magnetic machine. The disadvantages attending this mode consisted in the facts that for each light a separate machine was required, and that the light so obtained, although very powerful, was impossible to be regulated, besides being non-continuous, owing to the rapid consumption of the charcoal points from exposure to the air. All these difficulties Mr. A. Ladiguin, of St. Petersburg, Russia, has tried, and apparently overcome most successfully. By his newly invented method, only one piece of charcoal or other bad conductor is required, which, being attached to a wire connected with an electro-magnetic machine, is placed in a glass tube, from which the air is exhausted, and replaced by a gas which will not at a high temperature combine chemically with the charcoal. This tube is then hermetically sealed, and the machine being set in motion by means of a small steam engine, the charcoal becomes gradually and equally heated, and emits a soft, steady, and continuous light, which, by a most simple contrivance, can be strengthened or weakened at the option of those employing it, its duration being dependent solely on the electric current, which of course will last as long as the machine is kept in motion. Taking into consideration the fact that one machine, worked by a small three horse power engine, is capable of lighting many hundreds of lanterns, it is evident that an enormous advantage and profit could be gained by the illumination of streets, private houses, public buildings, and mines, with the new electric light. In the latter, it must prove invaluable as no explosion need ever be feared from it, and these lanterns will burn equally as well under water as in a room. Without mentioning the many advantages this mode of illumination has over gas, which by its unpleasant odor and evaporation is slowly poisoning thousands of human beings, and from which explosions are frequent, we can state that, by calculations made, this electric light can be produced at a fifth of the cost of coal gas. We hope shortly to place before the public more complete particulars, as well as reports of further experiments which are proposed to take place in Vienna, Paris, and London.—*Golos, and Journal of Society of Arts.*

THE London Underground Railway is now in process of extension from Moorgate street to Aldgate. The new line passes under Finsbury Circus, under Bloomfield street, under Finsbury Chapel and the Moorfields Roman Catholic Chapel. But it is stated that these buildings will not be disturbed by the works.



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