

NEW DREDGING ENGINES.

We present with this engraving representing a pair of dredge engines, recently built by the Lidgerwood Manufacturing Company, 96 Liberty street, New York for Ross & Sandford Jersey City, N. J. They are strong and powerful engines for their class, built for hard and steady duty, which are essential features in engines for such use.

The cylinders are 14"x18", strongly geared to the drum as shown, the engines being mounted on a hollow bed plate, bolted together to make substantially a continuous bed. As will be noticed, the main shaft carrying the driving pinions is rigidly connected to the inner drum journals; this connection being next to the driving pinions and gears holds the gearing in proper position, avoiding the spreading of centers almost sure to occur when there is no such connection.

The winding drums are scored, and are provided with friction at each end. At the outer ends the wooden friction blocks are made fast to a disk, and at the inner ends to the large spur wheels. This double friction makes a powerful holding arrangement, requiring small motion to engage and disengage. The manner in which the wooden friction blocks are fitted and fastened provides for the ready substitution of new ones at any time when it becomes necessary. All parts of these engines are simply arranged, so as to be little liable to get out of order, and to be kept in proper working condition by any one of ordinary intelligence and experience.

Ample arrangements are made for taking up lost motion, and the unusual length of connecting rods—seven cranks—makes the wear and strain on slides small.

As shown in the engravings the engines are spread sufficiently to permit the boiler to project up through the center space; they can be brought nearer together where some other location of boiler is desirable.—*Am. Mach.*

TECHNICAL EDUCATION FOR PLUMBER.

A meeting was recently held in the committee room, Guildhall under the presidency of Earl Fortescue, to consider certain recommendations of the Plumbers' Company, based upon resolution, passed at a conference of metropolitan and provincial plumbers, having for their object the improvement of plumbing work in dwelling-houses. A report which was read stated that the investigation conducted by the plumbers' company having made it clear that both among the masters and journeymen of the trade there was generally a distinct recognition of the fact that defective work was a serious evil to the trade as well as to the general public, they believed that it was now time to initiate and accept, on behalf of the trade, such regulations as might tend to secure more efficient work. They had therefore decided to recommend the establishment of a system of registration of plumbers in London and seven miles round. Further, that the persons registered should be able to satisfy the court by either of the following means: Evidence of present status in experience in the trade; examination by a board of examiners composed largely of practical plumbers appointed for the purpose; production of certificates of competency granted by the Plumbers' Company and the City of Guilds of London Institute. Indentures of apprenticeship will receive due consideration.

Earl Fortescue said, as a veteran in the cause of sanitary reform, he had great pleasure in taking a prominent part in the movement, which he was persuaded would not only prove of great benefit to the public, but to all engaged in the trade. The public would gain very much, because by the system suggested they would have their work done by competent men. A long discussion ensued, in the course of which Mr George Shaw (master of the Company) said it was well known that there were many men engaged in the trade who knew nothing whatever about plumbing, and the result was that the public health suffered. Mr. P. Magnus, director of the City and Guilds Technical Institute) strongly urged the importance of technical instruction. He believed that the step which was about to be taken would result in the men being thoroughly acquainted with their business. The recommendations were adopted, and the proceedings terminated.—*British Architect.*

A USEFUL cement, which hardens very quickly, is formed of litharge mixed with glycerine. It may be used for water and steam pipes, as well as for lining cisterns for petroleum oils.

CAR-COUPLETS AND AUTOMATIC BRAKES ON FREIGHT TRAINS.

If the recent tests of automatic car couplers shall bring about interest enough to induce railroad companies to agree upon the adoption of one or the other of those that were shown to be worthy of adoption, the result will have been entirely satisfactory. These tests showed that several of the couplers operated satisfactorily, and a short trial in actual service would settle all that is now unsettled. The number of men killed or disabled in coupling cars is frightfully large, and public opinion will in the end force the general use of automatic couplers.

It would show more humanity on the part of railroad managers if they moved with reasonable alacrity in the matter before being compelled to. But we have but little hope of their doing so unless they are stirred by pecuniary considerations, which is not likely. The history of railroads in his country shows that a consideration for human life, unless it costs something in money, seldom moves railroad corporations to action. Perhaps they are no worse in this respect, however, than other, large corporations.

Another thing equally deserving of attention is the use of automatic brakes on freight trains. Between getting squeezed to death coupling cars, and killed from falling off trains over which they must pass, the life of a freight brakeman is considerably less secure than that of a soldier in time of war. Earnest attention to the security of freight trainmen would result in a large saving of life; it is a fair matter for legislative attention.—*Am. Mach.*

AMERICAN LEATHER IN ENGLAND

Thomas Waller, the recently appointed United States Consul-General at London, has sent to Secretary Bayard an exhaustive report on the leather and boot and shoe trade of Great Britain. He says 321,591 persons are engaged in working leather in England, Scotland and Wales. The estimated yearly production of hides in these three countries is 12,366,874. Nearly 7,000 firms are engaged in the different branches of the leather trade in London and suburbs. "There is no doubt an unjust prejudice still existing against American leather; indeed for general use it has no standing in the English market. The steady increase in the American trade in leather here during the last four or five years, as statistics show, indicates, however, that American sole, upper, and patent leather is gradually growing in favor. The difference between English and American Leather almost entirely arises from the different system and processes of tanning.

A thorough investigation carefully made justifies the statement that American leather is only used in this country for waxed uppers and soles, and in rough, low priced, and inferior goods. Indeed it is the fashion of boot and shoe dealers to deny the use of American leather altogether whenever they can. Some of the objections to American leather may deserve consideration. They are as to its harshness, its want of finish, and its red color. The enlargement of American trade in leather here mostly depends, first upon the readiness of our countrymen to acknowledge the faults of their production and to apply the remedy, and, second, upon their recognition of English prejudice, if it exists, and for the sake of trade, upon their willingness to humor it. The best way to cultivate and increase American trade in this country is to adapt American goods to this market and then depend upon established merchants and factors to sell and dispose of them.

London and its suburbs support 406 wholesale and 4,248 manufacturers and dealers in boots and shoes. This country is supplied with the latest American inventions in shoe machinery. The American boots and shoes are scarcely known in London. As Great Britain exports over half a million pairs of shoes over all imports, there is not an absolutely necessary demand for foreign shoes here. Still France, Belgium, and Holland, send 120,000 pairs annually, while America send only 4,000. The practice of the French and Germans in sending experts here to investigate and report upon the trade, its needs, fancies, and prejudices, might be followed with profit. To succeed the American trade will have to offer this market the English form and style of shoe with American modifications."