RIVERSIDE MILLING COMPANY, LD., GLASGOW.

RIVERSIDE MILLS, GLASGOW.

THERE is a tale told of an American who was showing a native of St. Mungo round New York Harbour, and expatiating in approved American style on the superiority of New York over all other ports, to whom the Scottie at last responded: "Yes, it is fine; but the Almighty made the Hudson, we made the Clyde." The Clyde and the second city in the United Kingdom are still in the making, and to see one of the latest additions to its commercial progress we took a trip to Glasgow a short time ago.

The Riverside Milling Company, Ld., is a new private limited liability company, Mr. William Farquhar, previously in the flour trade, being managing director. The head miller is Mr. Andrew Gray, who has had experience in Edinburgh and Hull mills, and latterly was with Messrs. Hughes, Dickson and Co., Ld., in Belfast. The mill is situated close to the Kingston Dock, almost on the banks of the Clyde, and within a quarter of a mile of Prince's Dock, where the chief port grain warehouses are situated. The property was bought by Mr. Farquhar for the purpose of the mill, and he placed the order for a complete plant with Messrs. Hy. Simon, Ld., of Manchester. The contract included engines, boilers, electric light, several electric motors, sprinklers and intake plant, besides the wheat-cleaning, washing and conditioning machinery, and the flouring plant.

The building, which is substantially built of stone, has been fitted throughout with much-enlarged windows. Railway sidings run along the entire length of the wheat cleaning and receiving house and the flour warehouse, and they also abut on one side of the mill. A band conveyor also runs across between the stop blocks of the railway sidings and the mill. This band is in connection with the intake plant, which has a capacity of some 30 tons per hour.

The wheat-cleaning and receiving plant is in a building which has no communication with the mill except by means of outside iron gangways on various floors, the silos, warehouse and power plant being situated behind.

The wheat as it enters from the intake plant is weighed by means of an automatic weigher, having a capacity of half a ton per tip. From the weighing machine the wheat passes to a ravelling reel, which removes all strings and large impurities, going thence to an air belt aspirator. This machine removes and collects the dust in a most perfect manner, without any of it escaping into the room. The silo consists of 12 dirty wheat bins and six conditioning bins. Under each of these 18 bins is an "Exact" wheat mixer for drawing off regular quantities as required.

On the top floor of the cleaning department we found a 40-sack per hour "Simon" washer, stoner and whizzer, doing, as usual, first-class work. Here also is a 250-lb. per tip automatic weighing machine for weighing the wheat from the dirty wheat bins to the cleaning plant, and a "Reform" brush machine with a capacity of 50 sacks per hour. The fan from this machine blows into a Niagara dust catcher; in fact, all the fans in this department blow into this make of dust catcher, one being provided for each fan. One thing that particularly struck us here, as all through the mill, was the very excellent construction of all the air trunks. Where bends were necessary they were made with wide sweeping curves offering no opposition to the free passage of the wind. All bearings of all the machines were of Messrs. Hy. Simon's special self-oiling pattern, with perfect arrangement to prevent any oil escaping to drip on the floors or the machines.

On the floor below the washer, &c., is a "Reform" double milling separator with self-balancing sieves, and on that below we found the tops of the three double wheat dryer legs. These are each 24 ft. long, 16 ft. for hot air and 8 ft. for cold, and are worked by alternating air currents, which give a very high capacity in drying wheat.

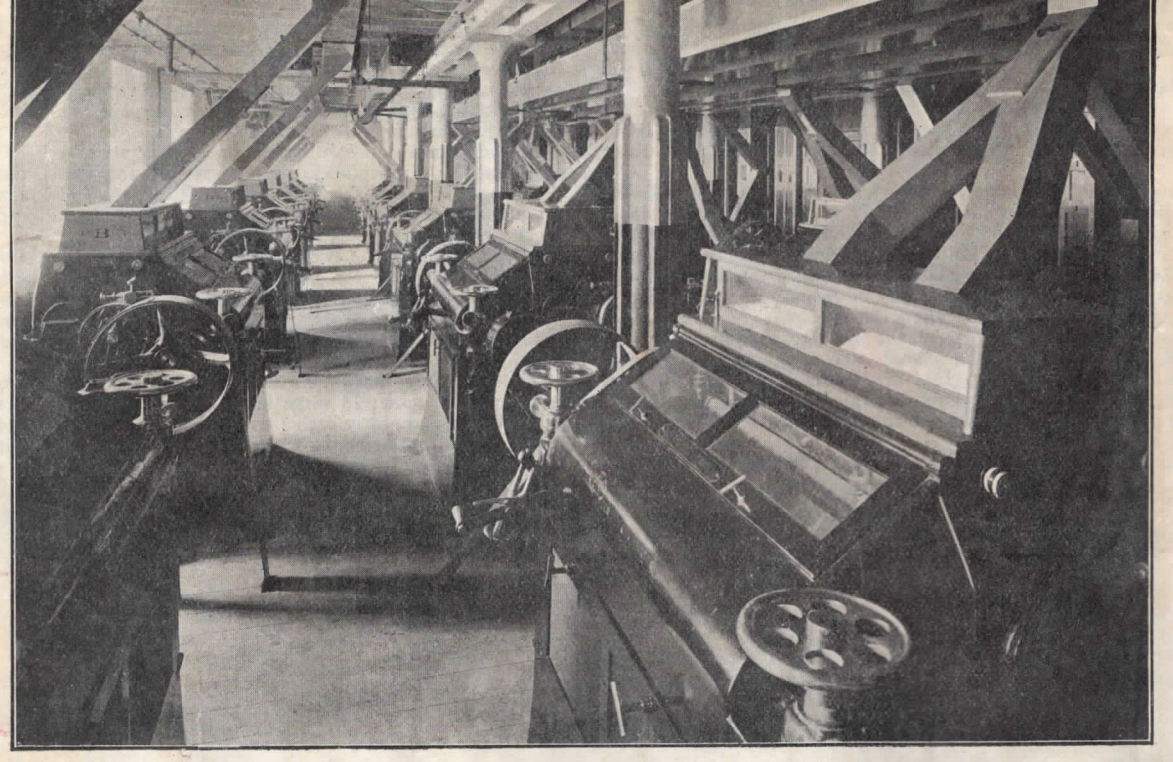
On this floor is also a 4-high roller mill for treating light wheat which is too good to go to the screenings, and between each set of rolls and contained in the roller frame are sieves to separate the "break meal" from each reduction. This then passes into the flour mill proper, where it joins fourth-break stock. A 30-in "Universal" grinder grinds down all the other wheat screenings.

Other cleaning machines are a "Reform" emery scourer, which was doing splendid work; 16 large barley cylinders, eight cockle cylinders, two re-barley and one re-cockle cylinders, all gear driven; a dustless air-belt aspirator for aspirating wheat before washing, and one Royle heater for heating the air for dryer legs. This has special corrugated steam tubes which give a large heating surface. We might remark here that all wheat bins are fitted with "pyramid" bottoms, which ensures that the first wheat delivered into the bin shall be the first to come out.

Messrs. Simon's feed-divider is a simple efficient device used all through their system, giving a perfectly even quantity of feed to any two or more machines. Thus in the cleaning plant one of these is used to distribute the feed to each sieve of the double milling separator. Another divides the whizzed wheat in six equal portions to the six dryer legs, others send equal quantities to each of the 16 barley cylinders. These dividers are automatic, reliable, and self acting, and help to make this the ideal wheat-preparing plant it is.

We next went into the mill proper, where we found a number of interesting novelties. To enable our readers to follow the plan of the mill we should, perhaps, state that the mill consists of five floors, the ground floor containing the usual elevator bottoms, line shafting, and practically all the roll exhaust trunking, the first floor being taken up with the reduction rolls, the bran flaking rolls, and the fourth break rolls. The second floor contains seven double improved "Reform" repurifiers, the third break rolls, and sundry sifters. The third floor contains seven more double "Reform" purifiers and the second break rolls. The top floor contains the dressing machinery, the centrifugals being arranged three high, with the detachers on a platform above the head ends of the centrifugals. On this floor are placed the first break rolls, consisting of two 4-roller mills with rolls 60 × 10; these are surmounted by four wheat steamers, one for each pair of rolls, the wheat being divided into four equal streams by a "feed divider," and can be

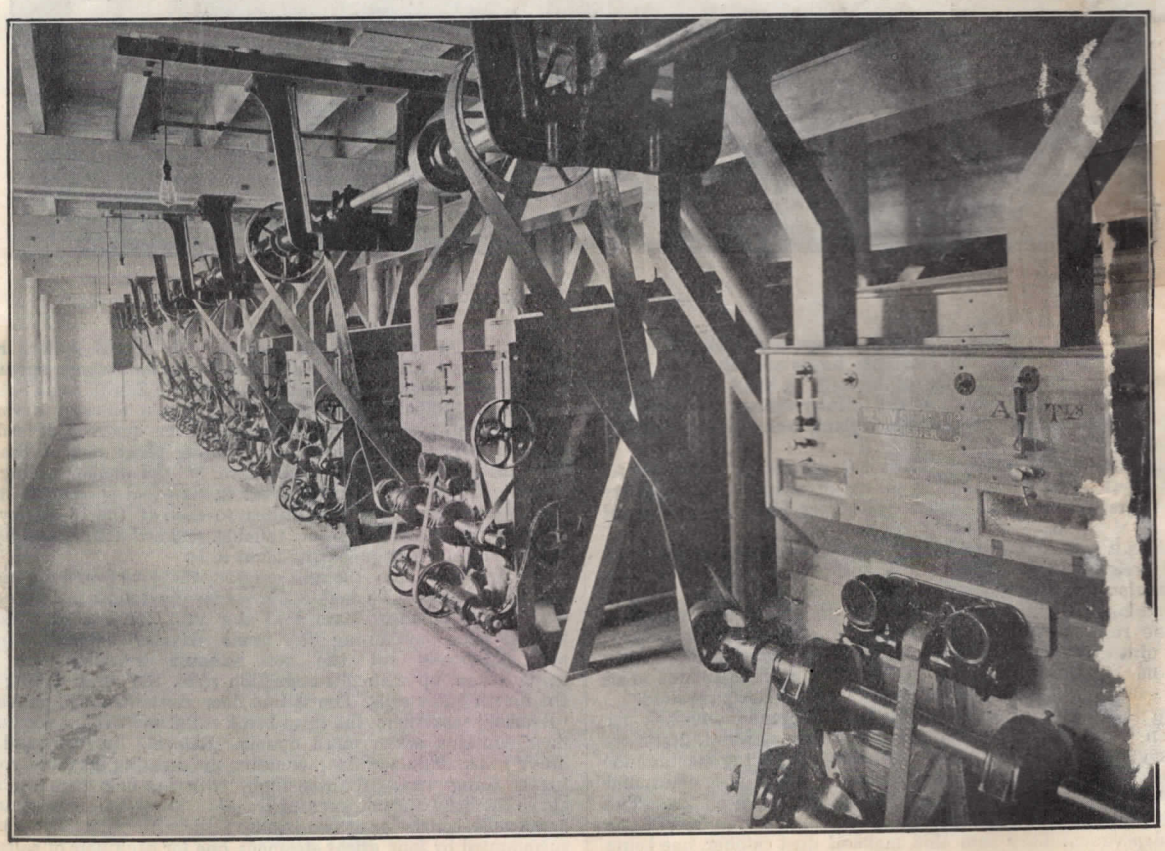
PTO



SMOOTH ROLLERS.—RIVERSIDE MILLS.

sent through the steamers or direct to rolls without steaming. It will be observed from the foregoing that the break system here is on Messrs. Simon's Reform roll-scalper system, in which the breaks are arranged on different floors, one above the other. By this arrangement the stock flows in a continuous stream from one break to the next without the use of elevators or conveyors. In each break roll frame are two stationary sieves which thoroughly scalp the stock, sending the broken wheat on down to the next break perfectly free from dust, beeswing and middlings, or semolina. The top sieve set close up to the nip of the rolls separates the break flour and dunst from the coarser stock, being assisted by a current of air passing down through the sieve, and thus the break flour is removed as soon as made, and before there is the least possibility of contamination. The overtails of the top sieve fall on to the lower sieve, which completely separates the middlings and semolina, and an ingeniously arranged aspiration removes the beeswing. The sieves are set at an angle which allows the stock to flow down them by its own gravity, and the meshes are kept clean by a gentle tapping arrangement.

Short as the flow of material is over the sieves it is more than sufficient, as we particularly noticed that practically all the scalping was done on the first few inches of each sieve. The second break is done on two 60 in. by 10 in. 4-roller mills and one 40 in. by 10 in. 4-roller mill, the latter machine taking the fine from the first break. The third



ONE OF THE PURIFIER FLOORS.—RIVERSIDE MILLS.

break is done in the same way on the same sized machines. The fourth has one 60 ins. by 10 ins. on the coarse, and one 60 ins. by 10 ins. 4-roller mill on the fine from the third. This break, by the way, only has one scalper sieve to each pair of rolls.

The middlings and semolina from each break are graded to the purifiers over special vibrating sieves, the tails of these sieves going to the fine side of the succeeding break. It will be seen that there are thus more than the usual 40 ins. of contact per sack per hour on the break rolls, in addition to which there are four 40 ins. by 10 ins. 4-roller mills flattening bran.

All the primary dunst, middlings and semolina are double purified, going first to the purifiers on the third floor and falling thence to the corresponding purifiers on the floor below. Great improvements have been made in the purifiers themselves. The trays are fixed to the frame of the machines instead of to the sieves, and are kept cleaned by travelling brushes; this we were told makes the sieves much lighter running and enables them to be set more accurately.

The chief innovation, however, is that the individual purifier fans are eliminated, all the purifiers in the mill being exhausted by two fans, one fan for the purifiers on each of the two floors. Each fan exhausts through a "Reform" suction filter dust collector, discharging the clean air out over the mill yard.

In all there are five of these "Reform" suction filter dust catchers, each enclosed in an iron casing; one for the centrifugal exhaust, one for the smooth roll exhaust, one for the break roll scalper exhaust, and two for the purifier exhaust. The result of the perfect aspiration of all these machines is that there is not a speck of dust anywhere in the mill, and the purification itself leaves nothing to be desired.

The dressing is done on 41 of Messrs. Simon's No. 1 3-sheet centrifugals and two No. 1 reels, with, in addition, a number of grading sieves. The "C" rolls, four 40 in. by 10 in. 4-roller mills, are well supplied with stock of the very best class, and the patent flour is all that the most exacting could wish for. The smooth-roller floor is very handsome with its three lines of massive 40 in. by 10 in. 4-roller mills, which give over 60 ins. per sack per hour reduction surface in addition to the scratch rolls We were considerably puzzled at the particularly light open appearance of this room till we discovered there were no roll exhaust spouts owing to the fact that by means of a novel exhaust arrangement all the exhaust trunks were under the roller floor instead of above, the exhaust spouts being carried down inside the frame of the rolls. Another interesting fact is that neither rolls nor purifiers are bolted or screwed to the floors, but simply stand in their places.

All the machinery in this mill, with the exception of the rollers, was built at Messrs. Simon's own works in Lancashire. Our Manchester friends bought these works a considerable time ago, so that they could manufacture everything themselves of the best material. The self-oiling bearings with which the mill is fitted throughout are their own design and make; they even make their own shafting, &c. The plant is driven by a horizontal compound surface condensing engine, built by Messrs. Woodhouse and Mitchell, Ld., of Brighouse, to Messrs. Simon's instructions. This rather interested us as we had the pleasure of seeing this engine under construction when we visited Brighouse a few months ago.

The steam is supplied by two Babcock and Wilcox water-tube boilers, with a Green's economiser, the power being transmitted by ropes from the fly-wheel of the engine direct to the various line shafts. Messrs. Simon have also installed several of their 500-volt motors for driving distant parts of machinery, such as intake plant, &c., and a complete electric light system. Mr. Farquhar was wise enough not to divide up his order, but to place the whole contract with one reliable firm. The result is that he has a mill that is bound to give him every satisfaction. We have not mentioned the finished products so far, and really it is almost superfluous to say that they are all that the most exacting could ask. The patents were free from specks, and with a splendid bloom and colour. The flour from the D centrifugals was little behind the patents, and the flour from the M centrifugal was far removed from low grade, while the break flour was really high grade.

We must congratulate the Riverside Milling Company on the fine mill they have secured, and which we feel sure has a successful future before it.

We have to thank Mr. J. T. Fitzgibbon and Mr. Marlor, of Messrs. Hy. Simon, Ld., for the trouble they took in showing us round and explaining everything; also we feel our thanks are due to Mr. Farquhar for allowing us to inspect the mills, and to Messrs. Henry Simon, Ld., for obtaining permission for us to do so.

Our visit to Glasgow was a real pleasure, and one that we shall not soon forget.

Riverside Milling Co.

PTO