

FIG. 5—SANDWASHER APPLIED TO PRESSURE FILTERS AT ROCKLAND, ONT.

diametrically opposite. At the point of highest velocity, there was the greatest suction, with the result that the sand coming out of the nozzle was drawn toward that point. There was also at this point, considerable turbulence owing to it being on the line of coalescence of the two streams of water formed by the sand nozzle acting as an obstruction in the fairway of the water. By comparing the two designs, the cause of the difference in the experiences is apparent. In the test filter design the water passing to the throat does so from a comparatively quiescent large body of water, and forms a comparatively steady jet, while in the adopted design the spaces provided were restricted, and the water passed at moderate velocities past the sand nozzle and up around the bend, hugging its periphery, producing the disturbances noted.

It was decided to introduce at two points in one of the Toronto filters sandwasher bases corresponding in the form of the water passages closely to those of the test filter. The actual design is shown in Fig. 4. A considerable improvement in the bottom of the sandwasher base was introduced and the sand nozzles were formed so as to be drawn out from below. These have been in operation over twelve months and show very little scour, in fact none at the bottom of the washer. They run without attention.

Performance of Sand Washers

As a matter of performance, each of these sandwashers during the twelve months they have been in operation has properly washed and cleaned about five thousand tons of sand, withdrawing it from, and delivering it again to, a height of about 18 ft., with practically no attention. The throats and sand nozzles are still in good condition. This is considered to be highly satisfactory, and shows that these sandwashers are highly efficient machines. The work of installing new sandwasher bases and throats throughout the whole plant is now in progress.

Fig. 5 shows a section through a sandwasher recently applied to pressure filters at Rockland, Ont., in which the raw-water supply pipe as is enters the sandwasher is widened out to reduce the velocity of approach, with the same idea of maintaining the steady jet at the throat of

the sandwasher.

LIGNITE BRIQUETTES SAID TO BE CHEAPEST FUEL

BY the first of August the lignite briquetting plants established by the Research Council to fit for use the coals obtained at Souris, Man., and at Estevan, southeast Saskatchewan, will be producing. It is expected that 30,000 tons will be produced this year at a cost much less than anthracite.

Dr. A. B. Macallum claims that the new fuel will not only be cheaper, but so much more efficient than anthracite that he is hopeful that the new demonstration will lead private capital to enter the same field, with the result that Pennsylvania coal will not be needed in the west in the course of time. Western Canada has imported more than 500,000 tons annually from Pennsylvania, and it would be of great benefit to this country to obviate the necessity of getting this foreign coal. Strikes and railroad congestion south of the line have so often made supplies insecure of late that the new development will be regarded as a very necessary one.

The new fuel will burn in the ordinary furnaces constructed for anthracite, but there are no clinkers or pieces of slate. It burns to an ash, and gives a higher degree of heat than anthracite. All the carbon is used, which is

not the case with anthracite.

Because the cost of materials has soared since contracts were awarded to construct the eastern and western intercepting sewers to serve Windsor and neighboring municipalities, the Essex Border Utilities Commission is now asking for a further loan of \$117,000.