The plant is operated by steam, the boiler capacity being 1,200 h.p., while the engine capacity is 600 h.p. The excess boiler capacity is used in the drying process. The plant is equipped with seven driers with a total capacity of 20,000 bushels per day, with grain at 8 per cent. excess moisture.

Ogilvie Milling Co.—This company owns and operates an elevator in connection with its flour mill. The grain capacity of the elevator is 1,250,000 bushels, while the capacity of the mill is 3,000 bbl. per day.

The rated capacity of motors is 2,000 h.p. and the power is purchased on a 1,300-h.p. demand basis. Power is delivered to the plant at 2,200 volts and stepped to 600 volts. The milling machinery is connected to a lineshaft driven by an 800-h.p. motor, while the mill cleaning equipment is lineshaft connected to a 250-h.p. motor.

Summary.—The power applied to grain elevators, steam and electric, may be summarized as follows:—

Electric power (max. demand)—Total h.p., 14,412½; average h.p., 8,680.

Electric power (flat rate)—Total h.p., 495; average h.p., 475.

Steam power—Total h.p., 4,710; average h.p., 3,105.

Combined steam and electric—Total h.p., 1,165 (800 steam, 365 electric); average h.p., 300.

The total capacity of all terminal elevators is 42,090,000 bushels. The total capacity of prime movers is 19,982½ h.p. and the average power is 12,360 h.p. During the season of 1914, the total grain shipments from these terminals was 126,398,622 bushels.

There are two types of plants, public and private. A public plant is one in which the grain is handled on a percentage basis for any grower or grain company, while the private plant buys the grain outright and disposes of it to suit its needs.

The cost of handling grain is rather hard to figure. A plant may not handle the same amount of grain two years in succession. It may also be stated, that while the characteristics of these elevators as to major details are identical, the conditions under which they operate are at a variance. One plant handles 20,000,000 bushels of grain on 1,500 tons of coal at $4 per ton. Including the operating costs, the cost per bushel over a number of years was shown to be 0.057 cent per bushel. Another plant handled for one year, 30,000,000 bushels of grain on 675 kw. at a maximum demand charge of $10,492.44. This brought the cost per bushel down to 0.035 cent per bushel.

Another plant handled 500,000 bushels on 100 h.p. flat rate at $25 per h.p. or 0.05 cent per bushel. This plant handled 40,000,000 bushels on 7,000 tons of coal, which, with the operating expenses, brought the price to 0.042 cent per bushel.

This information, while authentic for the period mentioned, can hardly be called an average.

RECORD SPEED IN FILLING OVER-SEAS ORDER.

The equipment for the Over-Seas Construction Corps in Europe, commanded by Major C. W. P. Ramsey, includes an order from M. Beatty and Sons, Welland, for five carloads of material-handling machinery, made up of hoisting engines, derrick irons, turntables, centrifugal pumps and clamshell buckets. This order, from the War Purchasing Commission, was received by the company on May 29th, and goods went forward knocked down and packed for ocean shipment on Tuesday, June 1st.

DEVICES FOR MEASUREMENT OF SEWAGE FLOW.

When designing new parts of sewerage systems, such as treatment works, relief or intercepting sewers, it is important to be able to compute, within a few degrees of approximation, the flow of sewage in the existing mains. Sewer gauging has other uses as well, and has come to be, in fact, a very necessary part of system maintenance work. There are various methods and devices in use, some of them simple and inexpensive and others rather complicated. Some of the measures adopted in several cities in United States were described in the Journal of the Boston Society of Civil Engineers, a few months ago. A description of the recording gauge which the State Board of Health of Massachusetts has been using is described by Mr. Ed. Wright, Jr., as follows:

The gauge is used mainly for measuring sewage at disposal works where the sewage passes over a weir, although it has been used somewhat in the measurement of stream flow and in the measurement of the flow of trades wastes where it is possible to install weirs. It consists of a copper float to which a rod and pencil are attached (Fig. 1) and a cylindrical drum, which is caused to revolve by an ordinary clock mechanism. The float rod engages

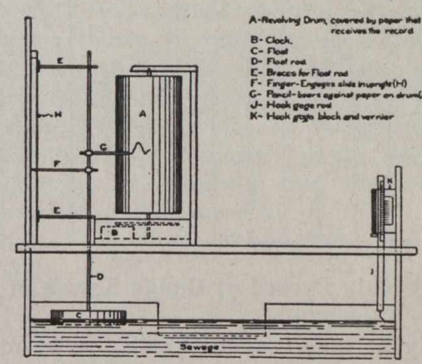

Fig. 1.—Automatic Gauge Used by Massachusetts State Board of Health for Recording Heads on Weirs in Measuring Sewage Flow.

in two brackets which are provided with roller bearings. The paper upon which the diagram is indicated is wrapped around the drum and held in place by pins at the top and bottom and by rubber bands, and the elevation of the starting point in relation to the crest of the weir is obtained by means of a hook gauge. The actual head on the weir is indicated.

The moving parts are constructed of brass, and while corrosion starts in very rapidly, the gauge is so constructed that little or no difficulty ensues from this cause in its operation. The clock is so constructed as to run seven or eight days, and except when weather conditions interfere, the gauge will run without attention for this length of time.

Owing to the great amount of moisture which at times rises from the sewage in the tanks where the gauge has been used, it has been found that it was impossible to produce a pen-and-ink diagram, and, in fact, the moisture rising at certain sewage disposal works has been so great that the paper would be torn by the pencil, and to overcome this the best quality of paper has been used.

The gauge is very sensitive and, in fact, the effect of matters rising with gas in the sewage in the measuring tanks under the float has frequently been indicated. The