

even superior result might be relied upon. It would, in fact, be safe to assume an output of 85 per cent. of the actual power put on to the dynamo pulley, in the shape of electrical force, and as, in the case of shop cranes, or wharf cranes, they would not be remotely situated from the generating dynamo, the loss in transmission would be small and can be stated at 1 per cent. to 2 per cent. only.

In the case of a large dock, with cranes situated at all parts, there would be greater distances to be dealt with, but even these would not exceed the limits of ordinary low-tension circuits, and the system would show a very favorable comparison in losses by transmission, as against the distribution of hydraulic power.

For all ordinary conditions, then, we may deal with the following figures:

One h. p. put into dynamo results in .85 of 1 h. p. Less by loss in transmission two per cent. .00085 of " Leaving the force put into motor as .8415 of a h. p. Output of motor 90 per cent. = .7573 of 1 h. p. Or a total loss of less than 25 per cent.

Now take the comparative case of a steam driven crane, say of two tons power, having two cylinders each 5 1/2 in. diameter by 8 in. stroke, running at 150 revolutions per minute. Such engines are on full work linked up to cut off steam as late as 3/8 to 1/2 of the stroke, and thus exhaust their steam at a considerable pressure. The usual boiler pressure is 70 lbs., maintained at an average of about 65 lbs., and wire drawn by pipes and connections to, say, 60 lbs. initial pressure. Under above conditions they indicate about 14 1/2 horse-power, but their consumption of steam is very considerable, and cannot be assumed at less than 35 lbs. per horse-power per hour. An excellent authority gave, recently, instances of such small high-speed engines absorbing over 40 lbs. per horse power per hour. The net efficiency is still further reduced by the internal friction of the machines, which even in good engines would average 15 per cent., so that we arrive at a final efficiency of these engines used as motors on cranes of not more than 60 per cent.

On all small steam cranes, however, there is a further waste in the boilers, which, being small and of the vertical type, are far from economical in raising steam, and habitually consume 5 to 7 lbs. of fuel per horse-power per hour. In practice no crane is ever continually at work, and during the periods of lowering, changing gear and stops, &c., the fuel continues to burn, and there is also the cost of fuel and labor of raising steam in the morning for the day's work.

It is customary among crane builders to construct the boilers of steam cranes a good deal smaller than would be necessary if the engines were in constant running; the gain in pressure during the stops and changes mentioned compensating the loss of pressure during working, and the steam gauge is consequently constantly on the move. Now, against these figures we should have, in the case of a direct-driven dynamo, a better engine running with an earlier cut-off, and also necessary steam more economically raised. The motor when the crane is standing wastes no power, and the dynamo may be shut down or started at short notice. The

crane driver need pay no attention to the crane when standing idle, and he starts without delay in the morning, the power being derived from the shop boilers. There would thus appear to be a very decided economy in favor of electric cranes, as against steam-driven machines. In the case of overhead travellers, there is the saving due to the absence of long square shafts running in movable bearings, and which, together with the cotton or wire ropes in rope-driven cranes, are kept constantly running even when the crane is out of use.

Prices of Building Materials.

LUMBER.

Table listing lumber prices for various types like 1 1/2 inch clear pickets, 1 1/2 inch thicker, three uppers, Am. ins., etc.

CAR OR CARGO LOTS.

Table listing car or cargo lot prices for various types like 1 1/2 inch clear pickets, 1 1/2 inch thicker, three uppers, Am. ins., etc.

124 Notre Dame Street, Montreal, October 14, 1890

G. H. Mortimer Esq., Pub Canadian Architect & Builder, and Contract Record.

Dear Sir,

I have to inform you, that, the following resolution was unanimously adopted, at the First Annual Meeting of the Province of Quebec Association of Architects held in Montreal on 10th & 11th inst.:-

We the Architects of the Province of Quebec now assembled in convention being satisfied that the Canadian Contract Record affords us a direct communication with the contractor. Resolved: That we pledge our support to it by using its columns when calling for tenders.

Yours truly G. Bluff Secretary

Table listing prices for 1 1/2 inch flooring, 1 1/2 inch flooring, XXX shingles, sawn, XX shingles, sawn.

Metallic Roofing Co. of Canada:

Table listing prices for Eastlake steel shingles (galvanized), Eastlake steel shingles (painted), Improved Broad Rib Roofing, etc.

Canada Galvanizing & Steel Roofing Co.:

Table listing prices for Corrugated Iron, galvanized, 26 W.G., Corrugated Iron, galvanized, 28 W.G., etc.

Table listing yard quotations for Mill cull boards and scantling, Shipping cull boards, promiscuous, etc.

B. M.

Table listing prices for 1 1/2 inch flooring, dressed, F. M., 1 1/2 inch flooring rough, B. M., etc.

BRICK—M

Table listing prices for Common Walling, Good Facing, Sewer.

Pressed Brick:

Table listing prices for Plain brick, f. o. b. at Milton, per M., 2nd quality, per M., etc.

Stone.

Table listing prices for Common Rubble, Per Tonne, delivered, Large flat, Foundation Blocks, etc.

Slate: Roofing (per square).

Table listing prices for red, purple, untinting green, black slate, Terra Cotta Tile, etc.

Sand:

Table listing price for Per Load of 1 1/2 Cubic Yards.

PAINTS. (1 in oil, per lb.)

Table listing prices for White lead, Can., zinc, Can., Red lead, Eng., venetian, vermilion, etc.

CEMENT, LIME, etc.

Table listing prices for Lime, Per Barrel of 2 bushels, Grey, White, Plaster, Calcined, etc.

HARDWARE.

Table listing prices for Cut Nails: American Pattern, 1 1/2 inch, per keg, Canadian Pattern, 1 1/2 inch, per keg, etc.