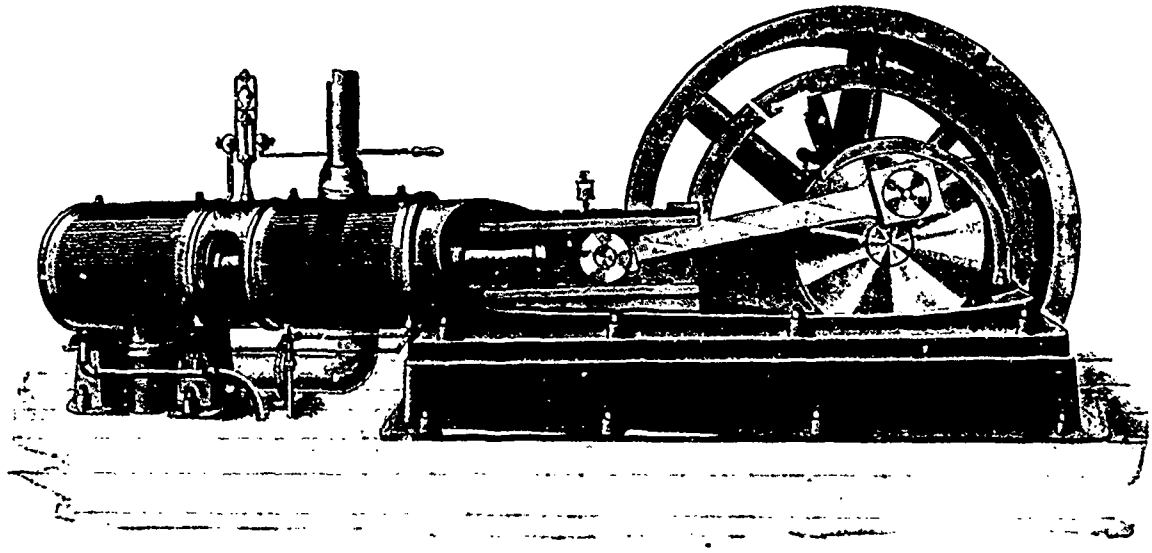
CANADIAN
ELECTRICAL NEWS
AND
STEAM ENGINEERING JOURNAL.

VOL. VI. SEPTEMBER, 1896 No. 9.

TANDEM COMPOUND STEAM ENGINE.

THOSE who have observed the trend of steam engine designing during the past few years will have noticed that there is a tendency towards a short, compact, heavy built frame, with strong simple parts, suited to the severe and incessant work imposed upon power plants by street railway and other heavy work. Corliss and other types of long stroke engines have been shortened and strengthened in order to meet these conditions and to occupy less room, and there is also a tendency to increase the speed to suit direct driven dynamos and give better regulation. In fact, there seems a tendency for the advocates of high and low speed to meet half way in a type of engine which will embody the best points of each.



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As an example of what is being done in this way, we give an illustration of a tandem compound engine, built by the Robb Engineering Co., of Amherst, Nova Scotia. The cut is from one of four engines of 300 h. p. each recently installed for the Halifax Electric Tramway Co. for railway and lighting purposes, and it represents a type of engine designed with a view to combine the best points of long and short stroke engines.

The design of frame and general proportion of parts is similar to recent types of long and medium stroke engines designed for railway work. The shaft bearings, crank and crosshead pins are much larger than usual, to insure cool running under stress of overloading or irregular work. The guides are cylindrical, allowing the crosshead free alignment. The disc crank contains sufficient metal to permit the crank pin and shaft to be forced in under heavy hydraulic pressure, and is balanced. The main journal has quarter boxes with adjustment at top and sides. The governor, which is of the "Sweet" or "Straight Line" pattern, used in all engines made by the Robb Co., is of the simplest and most sensitive form and directly connected to the valves. The high pressure cylinder is placed next to the frame, low pressure in rear, and so arranged that the cylinder head and pistons may be removed without disturbing the cylinders, valves or other parts. The valves are of the "Porter" type, consisting of a flat plate balanced by a pressure plate, which have proved so successful in the "Porter-Allen," "Straight Line" and other engines, their greatest merit being simplicity and freedom from wear. Both high and low pressure valves are attached to the governor in such a way as to divide the load exactly between the high and low pressure cylinders. This system is new and peculiar to the Robb engines and is found to give better economy with variable loads, such as are found in railway work.

The manufacturers are now building a full line of these engines, in simple, tandem and cross-compounds, up to 700 h. p., having a medium length of stroke, speed from 150 to 200 revolutions per minute; and as the parts are massive, and bearings unusually large, parts simple and strong, they are splendidly adapted for direct connection to electric generators or other variable work.

The extension of the Hamilton, Grimsby and Beamsville railway to Beamsville will shortly be completed.

The number of miles possible to be ridden in the United States on a street car for five cents is said to range from 8¼ miles in Jersey City up to 18 miles in Brooklyn, the average of ten cities being 13 miles. At Chicago a ride of 21 miles can be had for this small sum on an ordinary railroad.