per horse power from our supposed $15.34 (when the capital outlay for water power is $20.00) to $20.45, or the same as that of steam.

Let us now turn to the case of an employer using a small amount of power, and we shall find, as is well known, that he must fall an easy prey to our central power supply company, even if he does not use his power intermittently, as is almost always the case.

We have seen that the air compressed at a water power station can be delivered to a city five miles away for $23.84, when the cost of water plant is $90.00 per horse power. If we increase the price to $25.00 we shall have allowed for about 5 miles of 9 inch mains in the city; and the supply of consumers at this rate allows the Power Company 10 per cent. on their capital outlay. We shall assume that a ten horse air motor gives out on its brake for a given quantity of air only 75 per cent. of the power used in compressing that air. Experiments made on the smallest motors of less than one horse power, commonly used in Paris gave this total efficiency at close on 50 per cent,, while larger machines, as a general rule, simply old steam engines with very small mechanical efficiency, gave 80 per cent. with but 90° F. preheating of the air and a coal consumption of $\frac{1}{5}$ pound per horse power per hour. Then our small consumer must pay $25.00 x $\frac{4}{3}$ = $33.33 for the air required to deliver him *one brake horse power;* not *one indicated* which he usually pays for.

If his motor and preheater cost him $33.00 per horse power, the fixed charge at 10 per cent. will be $3.30; and if he uses 0.2 pounds of coal, his running expenses will be $1.10 per horse power per annum when he works 3,080 hours a year. The total cost to this consumer of one brake horse power thus amounts to:—

Air..............................	$33 33
Fixed charges....................	3 30
Running expenses...........................	1 10
	$37 73

$37.75. This assumes that he works at full power for 10 hours a day during 308 days. If he works only at ½ power, this price will be reduced almost in proportion to the smaller power employed, as the air motors cut off automatically; and if he work intermittently, it will be reduced in the same manner, as he is only charged for the air which actually passes through his meter. For example, if his 10 brake horse power motor works 10 hours a day, his power bill will be $377 per annum. If he runs only five hours a day, the amount sinks to $210; and smaller quantities in the same proportion meted out with the precision of an ordinary gas meter. This estimate is based on an assumed necessary expenditure of $90.00 for wates and wheel plant. The author believes this to be a very high price for Montreal.

The cost of a horse power varies in Montreal from $60 to $120, rented to or supplied by consumers using from 3 to 25 horse power; so that on the lowest estimate these would save from $22 to $39 according to amount used, per horse power per annum, by a system o compressed air distribution.

Let us now inquire what can be done by generating power in a Central Station near the city, by means of first class triple expansion steam engines and first class compressors; and distributing the same to customers in a main of a length of two miles for each 2,000 horse power.

Without troubling the Society with details, the schedule of annual charges will run somewhat this:—

Fixed expenses,	Boilers....................................	$3 50
	Boiler and Engine houses and chimney	1 20
	Triple Expansion steam engines.........	2 23
	Compressors......................	1 10
	Mains (12″ dia.)......	0 56
Running expenses,	Coal....................................	8 28
	Oil waste etc.........................	1 00
	Attendance	2 46
		$20.33

The total cost to the Central Station Coy. of one compressor horse power is thus $20.33 which includes 5 per cent. interest on their expended capital of $71.37 per horse power.

This outlay is made up as follows: