

THE DIFFERENCE BETWEEN VOLT AND AMPERE.

THE following question was put to Thomas A. Edison in a recent law suit, in answer to which Mr. Edison gives a pretty clear definition of the words "ampere" and "volt":

Q. Explain what is meant by the number of volts in an electric current?

A. I will have to use the analogy of a waterfall to explain. Say we have a current of water and a turbine wheel. If I have a turbine wheel and allow a thousand gallons per second to fall from a height of one foot on the turbine, I get a certain power, we will say one horse-power. Now, the one foot of fall will represent one volt of pressure in electricity, and the thousand gallons will represent the ampere or the amount of the current; we will call that one ampere. Thus we have a thousand gallons of water, or one ampere, falling one foot or one volt, or under one volt of pressure, and the water working the turbine gives one-horse power.

If, now, we go a thousand feet high and take one gallon of water and let it fall on the turbine wheel, we will get the same power as we had before, namely, one horse-power. We have got a thousand times less current or less water, and we will have a thousandth of an ampere in place of one ampere, and we will have a thousand volts in place of one volt, and we will have a fall of water a thousand feet as against one foot. Now, the fall of water or the height from which it falls is the pressure or volts in electricity, and the amount of water is the amperes. It will be seen that a thousand gallons a minute falling on a man from a height of only one foot would be no danger to the man, and that if we took one gallon and took it up a thousand feet and

let it fall it would crush him. So it is not the quantity or current of water that does the damage, but it is the velocity or the pressure that produces the effect.

FLUME AREA.

THE fraction of a square foot of orifice required for the discharge of a given number of gallons of 231 cubic inches each, under any desired head, in any given number of minutes, is found by dividing the number of gallons by 2265 times the number of minutes and by the square root of the head in feet. The table here given shows how much orifice will be required to discharge one gallon per minute, under various heads in feet.

HEAD FEET	SQ. FT. HEAD.	AREA SQ. FEET.	HEAD FEET	SQ. FT. HEAD.	AREA SQ. FEET.
1/2	.707	.00062	16	4.	.00011
3/8	.866	.00059	17	4.123	.000107
1	1.	.00044	18	4.243	.000104
2	1.414	.00031	19	4.359	.000101
3	1.732	.00025	20	4.472	.000098
4	2.	.00022	21	4.583	.000096
5	2.236	.00019	22	4.694	.000093
6	2.449	.00018	23	4.796	.000092
7	2.646	.00016	24	4.899	.000090
8	2.828	.00015	25	5.	.0000883
9	3.	.000147	26	5.099	.000086
10	3.162	.000139	27	5.196	.000085
11	3.317	.00013	28	5.292	.000083
12	3.464	.000129	29	5.385	.000082
13	3.606	.00012	30	5.477	.00008
14	3.742	.000118	31	5.567	.000089
15	3.873	.000115	32	5.656	.000078

—Power and Transmission.

PERSONAL.

It is stated to be the intention of the Dominion Government to appoint Mr. John Dodds, of Kingston, to the position of steamboat inspector as the successor of Mr. O. P. St. John, whose resignation was noted in the ELECTRICAL NEWS for May.

The genial presence of Mr. H. M. Grant, general travelling agent of the Vulcanized Fibre Co., of Wilmington, Delaware, illumined for a brief space the other day the ELECTRICAL NEWS sanctorum. Mr. Grant visits Canada quite frequently, and finds among the electrical people of this country an ever widening constituency for the sale of the well-known insulating material manufactured by his company.

NOTES.

The first electric elevator to go into operation in Ottawa has been installed in the Russell House annex.

Mr. A. M. Wickens, President of the Executive Board of the Canadian Association of Stationary Engineers, was a visitor at the regular meeting of Hamilton Branch No. 2 on the 15th inst., and reported the result of the work of the Legislative Committee. Mr. Wickens also gave to the members a short talk on Electricity.

A valve for steam or water has been patented in Canada by Mr. Thos. Riley, of Toronto, Ont., on the 10th of January, 1891 (No. 35827). This invention consists of a removable seat of the valve; a washer is placed between these two seats; a cushion is placed on the spindle of the valve supported by a permanent plate. Above this plate is a recess in which a washer is forced to prevent leaking.

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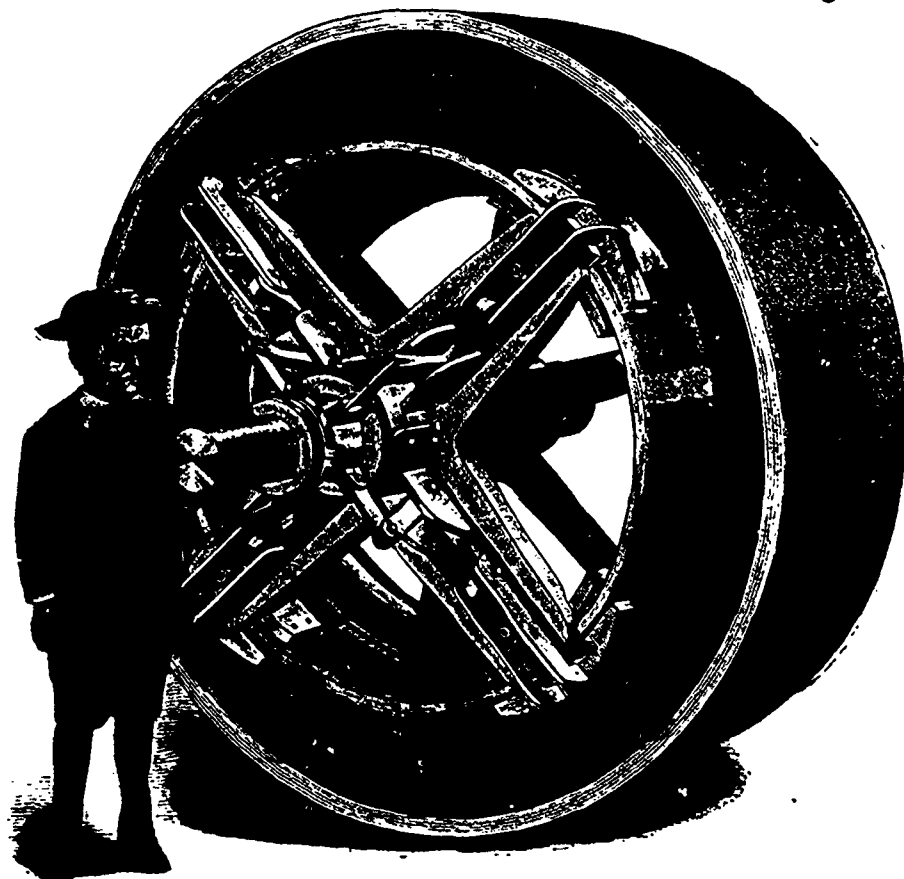
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