

neither had been commercially a success, because a knowledge of the proper proportions had not been gained. The validity of the cyanide patents having been upheld by the highest authorities in patent law, those of Mr. Doherty's process became secure on the same grounds.

### FACING TOOLS.

T. Draper of Petrolia, Ont., manufacturer of valve facing tools and ball valves, sends us his new descriptive circular containing cuts of the tools, which we reproduce here. As will be readily seen from the cuts, the device is very simple, and it is claimed for the tools, that the work done by them is very accurate, and that valves dressed with them are perfectly tight. Only a common bit brace is required to operate them, and this is at hand almost everywhere. No more preparation is necessary than to put the tool in the brace and do the work.

Fig. 1 shows a pair of the tools for repairing common globe valves. The seat facer or reamer is a section of a true ball or sphere, so that it makes a concave seat. The valve facer, for facing the disc, is so constructed that it makes a surface to fit accurately the surface formed by the seat facer.

Fig. 2 shows the tool for facing all flat-seated valves.

Fig. 3 is from a photo of the actual operation of repairing a globe valve.

Figs. 4 and 5 show three positions of the valve facer in its revolution. They also show the valve disc C jammed tight against the part D, to prevent it turning, while being dressed.

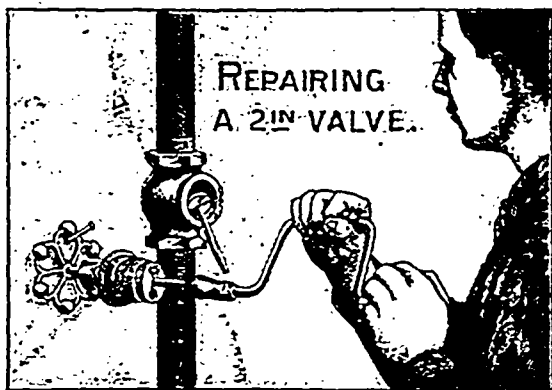
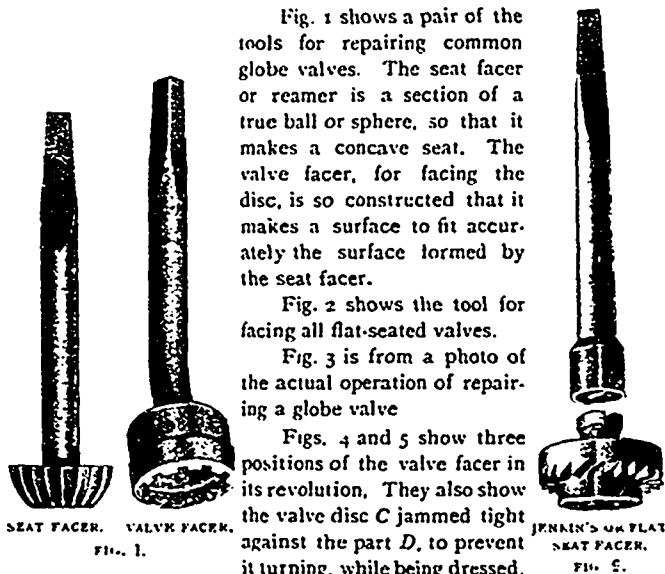


FIG. 3.

Note particularly that the tool travels in the direction indicated by the arrows. It swirls or sweeps around the disc. This peculiar motion is obtained by having the driving shank bent, as shown in Fig. 5. This cup tool has an inner and an outer cutting edge, as will be seen by Fig. 1.

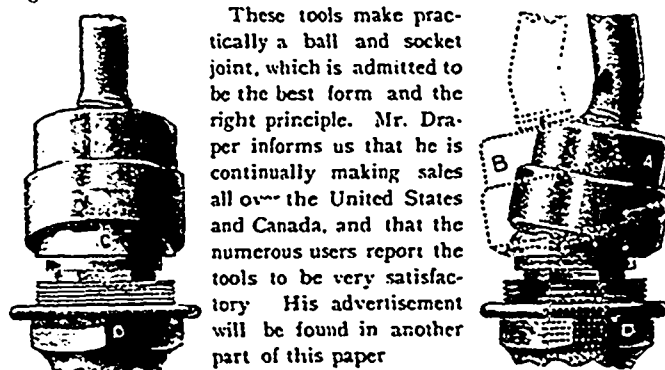


FIG. 4.

FIG. 5.

SPENCE & Co., file manufacturers, Hamilton, have put in a new file cutting machine, with a hammer of 160 lbs., one of the heaviest of the kind in Canada. The machine was made by Charles James, machinist, of the same city.

### METAL IMPORTS FROM GREAT BRITAIN.

The following are the sterling values of the metal imports from Great Britain during October, 1896, 1897, and the ten months to October, 1896-1897.

	Month of Oct.,		Ten months ending Oct.,	
	1896	1897	1896	1897
Hardware and cutlery .....	£6,296	£7,921	£53,163	£58,593
Pig iron .....	4,974	1,187	26,204	6,485
Bar, etc. ....	1,443	306	14,049	7,878
Railroad .....	13,756	6,885	171,909	45,776
Hoops, sheets, etc. ....	6,919	15,307	42,677	71,261
Galvanized sheets .....	4,760	13,439	46,972	48,986
Tin plates .....	18,580	30,122	110,489	162,971
Cast, wrought, etc., iron .....	4,298	2,932	44,949	28,889
Old (for re-manufacture) .....	736	1,292	15,598	6,483
Steel .....	6,809	6,440	79,869	47,501
Lead .....	2,793	4,888	13,279	23,950
Tin, unwrought .....	1,861	1,169	13,577	14,983
Cement .....	6,445	2,880	31,031	18,491

### WASHING AND BRIGHTENING STONE WALLS.

W. P. M., HALIFAX. — If you have the information, will you please answer through THE CANADIAN ENGINEER, giving a method of cleaning the soot and dirt which collects on the front of large freestone buildings, without going over the building with a tool. The soot is from soft coal and is driven in with the dampness.

ANSWER. — In removing soot from stone buildings nothing is so satisfactory as chisel work. For brightening up the stone walls brushes of steel wire are sometimes used, but this process does not penetrate far enough. Various washes and enamels have been used and advertised for this purpose, but we should advise you to be very chary about their use. In most cases they are composed of dilute solutions of muriatic acid. This preparation is often used to wash brick walls as well as stone, with the result that both mortar and stone are eaten into and crumble away. In many cases where architectural work has been spoiled, these washes are the unsuspected cause. Various kinds of enamels are also used, in which case the sooty surface is covered up by the application, but this enamel soon begins to wash off in patches, making the building look worse than before. Next to tooling cut stone architecture is rubbing them down with wet bricks of "grit" composed of any sandstone, washed off after the operation.

### THE ELECTRIC RAILWAYS OF CANADA.

There are at present in Canada 569 miles of electric railway, exclusive of those of British Columbia. The valuable statistics compiled by George Johnson, the Dominion statistician, show that the train mileage run of these roads in 1896 was 21,917,151, and the number of passengers carried was 73,496,069. The total capital and bonded debt was \$23,000,000. There were in use 947 motor cars, with 1,315 motors, 360 trailers, and 62 street sweepers and snow plows. The total number of hands employed was about 3,400. In the statistical year book for 1896 detailed returns are given of five electric railways reporting to the Department of Railways and Canals, as follows:

	Miles long	Train mileage run.	Paid up capital.
Berlin & Waterloo .....	2.75	66,000	\$28,350
Ham., Grimsby & Beamsville.....	17	207,001	189,700
Montreal Park and Island .....	14.43	42,653	770,401
Niag. Falls Park and River.....	13.68	221,535	1,281,731
Oshawa .....	8.50	23,258	311,704

	Passengers carried.	Tons freight.	Earnings.	Expenses.
Berlin & Waterloo .....	205,000	.....	\$ 8,200	\$ 6,880
Ham., Grimsby & Beamsville ..	256,313	2,142	36,040	28,926
Montreal Park and Island .....	728,204	.....	56,446	55,879
Niag. Falls Park and River ....	474,552	.....	58,688	36,271
Oshawa .....	87,519	16,389	11,900	16,700

### SEWAGE VENTILATION.

Editor CANADIAN ENGINEER:

SIR. — The *Canadian Architect and Builder* for November reports a paper read by J. W. Hughes, master plumber, of Montreal, before the American Public Health Association at Philadelphia, wherein Mr. Hughes enforces the systems and ideas of drain ventilation and construction so ably described in THE CANADIAN ENGINEER of April, September, and November, by W. M. Watson, master plumber, of Toronto. This is a good sign that the dangerous sanitary plumbing and drainage by-laws forced on the public by interested and selfish