

through it with the proprietor and learn the use of each machine, you find out that everything is run exactly by a given method and is bound to produce a given result. The almost perfect system of the factory is the result of years of practical application to details and is bound to command success. The biggest surprise to any one who sees all the stuff in the new place, and ever saw the old one, is where they ever kept such a stock. Charlie Ellis says they didn't know what they had themselves until they got it out into the daylight, and now he thinks they are going to have their space pretty well taxed.

It is by the enterprise of such business men as P. W. Ellis & Co. that a country is made prosperous and we not only offer them our congratulations on their success so far, but trust it may go on increasing. In this wish we think we shall be heartily supported by the jewelers of Canada generally, for such a factory as theirs is an immense benefit to the trade. The fact is that the country could not do without such an institution now, and go back to the old methods.

**ABSOLUTELY SURE PROTECTION AGAINST BURGLARS.**—The Bank of Montreal is now erecting in Toronto a new and elegant banking house, different in style and architecture from any heretofore built in this city. In erecting such a building, to last as it certainly will for several generations, the Board of Directors determined to procure the very best possible protection against burglars, for the vast sums of money and securities constantly in their hands. They are securing this protection through the well-known firm of Goldie & McCulloch, to whom has been awarded the contract for building an immense steel vault larger and heavier than anything of the kind heretofore built in this country. This vault, or steel room as we may properly call it, will weigh when completed some 30 tons, and will, we doubt not, be a standing monument to the credit of the builders. Goldie & McCulloch are making great strides in public favor in this branch of their very extensive business, and are already at the top of the ladder of success. Their position is well merited, and has been attained by an untarnished record of nearly half a century. Still they may feel proud of being able to say that the largest monied institution in the Dominion has entrusted to them the construction of this, the most important part of their new premises. We congratulate the firm, and also their representative at Toronto, Mr Geo F. Bostwick, through whom this heavy contract has been awarded.

### WORKSHOP NOTES.

**ATTACHING THE DIAL.**—The pinholes in the dial feet should be drilled with a very small drill, in such a direction that the pins will not come in the way of anything, and will be easily got at. They should not be drilled below the surface of the plate, but broached until the pin touches it. If the hole should be a little below the surface, it is better to lengthen the copper foot by squeezing it with a pair of blunt nippers until it is above the plate, than to leave it in such a position that no pin can stop it.

**TO HARDEN CASE SPRINGS.**—In order to harden case and other pressure springs, they should first be heated, then rubbed over with soap, next heated to a cherry red (not a white, because the steel would burn) dipped quickly in petroleum, and annealed light blue; in place of oil, rub them over with tallow, let it smoke off, and cool on the annealing sheet. The tempering and smoking off are best done outside the workshop, as a bad smell is created thereby.

**SILVER ALLOYS.**—Pure silver is a metal of only an inferior degree of hardness, in consequence of which, silverware manufactured from the pure metal would be subject to rapid wear, and for this reason it is generally alloyed, except for articles for the chemical laboratory. Silver is most frequently alloyed with copper; besides this, it is also alloyed with gold and aluminium. Alloys containing silver and nickel, or silver, nickel and zinc, are much employed in the manufacture of tableware and articles *de luxe*, which, while being of a handsome white colour, are much cheaper than those from silver and copper, which was formerly much used in the manufacture of silverware.

**SIMPLE TEST BY THE SPECIFIC GRAVITY.**—The goldsmith, after having smelted his bench scrapings, sweepings, &c., and reduced it into a button, desires to roughly estimate the percentage of the precious metals contained in it. This can be done approximately as follows: A certain quantity of it is taken and drawn out into a wire, which is to be of exactly the same length as one from fine silver, of course, both must have been drawn through the same hole. Silver being nearly one-half lighter than gold, it is natural that the one of fine silver must be lighter, and the increased weight of the wire under test corresponds to the gold contained in it.

### OTHER NOTES.

"THE American Clean Towel Co.," recently organized at Montreal, deliver for 20 cents a week a clean towel every morning to any address in the city. "Dirt cheap" say we.

A nice distinction in terms is given by a financial paper which says that the word "point" in regard to English consols means a sixteenth of 1 per cent., while in American stocks it signifies 1 per cent., in grain it means 1 cent, and in provisions 2½ cents.

The following is from a late French paper. "It is well known that the Americans are a very practical people, even in their religion. One of them has just invented a burglar-proof safe, which, when tampered with, suddenly extends a powerful pair of tongs, or grippers, which seize the malefactor and hold him in a firm embrace. There is nothing extraordinarily new in all this, but there is something further. Nearly always, safes that are likely to be visited by burglars are in buildings unoccupied during the night, and it is only the next morning that the captured robber is carefully released from the trap to be duly imprisoned. This is, of course, time lost, which the religious inventor desires to utilize. He has, therefore, had prepared by an eloquent preacher a very long and remarkably forcible sermon, in which the rights of property, the disgrace of stealing, and the dangers

attendant on it, both in this world and the next, are set forth in the most touching language. This sermon, stored in a phonograph, is set off at the same moment that the pinchers operate, and the homily is rolled out in the ears of the patient. The monotonous nasal tone peculiar to the phonograph renders the illusion perfect, the unfortunate robber believes he hears the voice of the preacher himself, and in the morning when the police arrive they find him thoroughly subdued and repentant."

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