

Deardon made a clean breast of the whole concern, and gave the customs authorities a full list of his accomplices and the retailers who bought from him. As the customs people have a direct interest in every seizure, a share of the spoils going to them, it is probable that there will be "wigs on the green" ere long.

SOMETHING ABOUT R.F.S. & Co.—We clip the following interesting item from *The Metallurgist*, which we think will be of interest to our readers.—The house of R. F. Simmons & Co., Attleboro Falls, Mass., was established in 1873, and the present members of the firm are Messrs. R. T. Simmons, E. L. Hixan and J. L. Sweet. Mr. Sweet is the Vice-President of the Jewelers' Board of Trade of Providence. They at present employ over one hundred and eighty workmen, and although I hear other manufacturers claiming to employ as many, yet after having covered the jewelry manufacturing districts of the East pretty thoroughly, it is my belief that this house "leads the van" in the number of employees. Their specialty is gold stock plated chains. They carry in stock over 2,000 different styles. Messrs. Simmons & Co run several patented chains and among others their patent box link. They were the first originators in plate of the "California" chain. This has always been a hot chain to make in plate as it is apt to run up to too high a price in making. The "California" chain was probably first imported and is made in bright and Roman gold. As per a patent process, with Messrs. Sweet & Co., these two materials are now united without solder, and this process has given the firm almost the entire trade in this chain. They have a very large sale for it on the Pacific coast."

WHAT IS A MINOR?—Louis Sapery, a young man of a speculative turn of mind, embarked in business in Toronto some four years ago as a jewelry peddler, and for some time did a snug little business, buying exclusively for cash, on account of the scarcity of credit. Subsequently, however, young Sapery entered into partnership with his brother-in-law, a Mr. Muscat, under the style of Muscat & Sapery, and in addition to his peddling trade, the new firm opened out a retail jewelry store on King Street East, almost opposite the St James' Cathedral. As the new firm for a while met their engagements very promptly, it was not long before they were favorably regarded by the jobbing trade and getting all the credit they wanted, and, as it now appears, a great deal more than they deserved. Last fall, after laying in an unusually large stock of goods, young Sapery started on a trip to Manitoba to dispose of his stock. Later on he returned to Toronto and informed his creditors that he had sold nearly all his goods up there, but while in a house of ill fame, in the prosecution of his business, he was drugged and robbed of the entire proceeds of his sales. His creditors, not taking this for gospel, commenced to make inquiries, and the result was that Messrs. P. W. Ellis & Co., one of the largest of them, got out a *capias* and had him arrested and put in jail. His friends have moved in court for an order to set the *capias* aside, on the ground that he is a minor, but their application has been thrice dismissed with costs, they having so far failed to convince the hard-hearted judge that the poor little fellow should have been tied to his mother's apron strings instead of selling jewelry these few years past. It is usually charged against this country that our youths are too precocious, but certainly if what Sapery's friends allege be true, here is at least one authentic case, where a young man of about twenty one, who for four years has hoed his own row as a jewelry peddler, has suddenly relapsed into an irresponsible child, who should be pulling away at the feeding bottle instead of being put into jail by his hard-hearted and unfeeling creditors. Messrs. Ellis say that they are going to fight this thing out to the end on the line they have started on, come what may, and we think they are to be commended for so doing. A few such examples would clear the moral atmosphere in the jewelry trade and make it healthier for some time to come. In the meantime, if being a minor is going to save them from paying their legal obligations, some of them may suddenly discover that they are under age and act accordingly. If, however, they are as successful as Mr. Sapery has been, it will scarcely pay them

## WORKSHOP NOTES.

TO TEMPER STEEL.—Steel tempered in oil is not as hard as when tempered in water, softer in tallow than in oil, softer in sealing wax than in tallow. Small drills hardened in sealing wax require no an-

nealing, very thin ones may be tempered by drawing them with a quick motion through the air, they, too, need no annealing.

TO HARDEN PINIONS.—I have for several years used petroleum for hardening pinions with best results. The steel parts to be tempered are first heated upon charcoal in the customary manner, then annointed with ordinary washing soap, heated cherry red, and quickly immersed in petroleum, without anticipating that the latter might ignite. Steel articles heated in this manner do not warp whatever, no matter how thin, and remain almost entirely white.

THE FUNCTIONS OF OIL SINKS.—Oil sinks are formed in watch and clock plates so that by capillary attraction the oil is kept close to the pivot instead of spreading over the plate, and back slopes are formed on the arbors, so that the oil may not be drawn all up the body of the arbor. The "attraction" is sometimes negative and becomes a repulsion, as is the case of mercury in a glass tube. It is still called capilarity whether the fluid is raised above its natural level or depressed below it.

REVARNISHING CLOCK CASES.—It is often incumbent on the country watchmakers to revarnish clock casings and other objects, we therefore publish a few recipes of easily-prepared varnishes. *Common Varnish*: 16 parts mastic, 2 parts Venetian turpentine, 24 parts sandarac, 120 parts alcohol. *Black Varnish*: 20 parts alcohol, 1 part sandarac, 2 parts shellac, 1 part elemi, 1 part seedlac, 1 part mastic, 1 part boneblack, 1 part Venetian turpentine. *Red Varnish*: 50 parts alcohol, 1 part dragons' blood, 4 parts Venetian turpentine, 4 parts shellac, 8 parts mastic, 2 parts elemi. The ingredients are put into a bottle and filtered through a fine cloth, and the varnish is ready for use. For a colorless varnish, use 1 part mastic, 2 parts bleached shellac, 2 parts sandarac, and 20 parts alcohol.

BURNISHER.—The surface to be burnished must be free from scratches, which the burnisher would not remove, but render more distinct by contrast, and the burnisher must be kept highly polished, for the surface burnished can never be smoother than the burnisher. Burnishing polished pivots with the glossing burnisher preserves them from wearing. Very little, if any, of the metal is removed by burnishing in the ordinary way, although watchmakers sometimes use what are called cutting burnishers to form pivots. The cross section of these burnishers matches the outline of the pivot it is desired to form, and they are roughened by rubbing on a lead block charged with coarse emery. The pivot is finished with a smooth burnisher of the same form as the cutting are. Silversmiths use burnishers of agate.

WEAKENING THE SPRING.—The balance spring is best placed upon a piece of glass, not too thick, which lies upon a piece of white paper, whereby the disturbing shadow is prevented altogether. Much twisting of the spring is injurious, and no exact regulating can be had with one that is bent. Should it ever become necessary for the repairer to weaken an over-strong spring, for want of a suitable one, let him do as follows: Cut a medium-hard holly, narrowed flat, press the spring carefully within it, lay it upon a plate of glass, and apply the oilstone with gentle pressure, or coarse redard oil, and thus remove as much as consistent. When much has to be taken off, it is better to shellac the spring upon the plate for flat grinding and polishing—of course set the screws very exactly to obtain a uniformity, after finishing, remove the spring, with alcohol and boil. The spring coils must lie in their natural position, neither twisted nor cramped. I wish to state in this connection that this desperate remedy should only be used when the repairer has no other means at command, and only then in watches of low grade. Of two evils choose the lesser. The spring is not improved by such treatment.

## OTHER NOTES.

A watchmaker in Newcastle is said to have completed a set of three gold shirt-studs, in one of which is a watch that keeps excellent time, the dial being about three-eighths of an inch in diameter. The three studs are connected by a strip of silver inside the shirt bosom; and the watch contained in the middle one is wound up by turning the stud above, and the hands are set by turning the one below.

Engines of war are short-lived now-a-days. Three years ago no praise was too high for the machine-guns which had brought to a close the bombardment of the forts of Alexandria, by driving the gunners from the guns they were serving. Now those same guns of Mr. Nordenfeldt's invention are pronounced obsolete, and no longer fulfilling