QUERIES.

[1009]—E. H. Lewis, Winnipeg, inquires.—What would be the best means to remove a hard incrustation from the interior of a return tubular boiler?—Would diluted hydrochloric acid do it?

[1010]—I am making a pair of oscillating Engines—stroke 9 in x bore 4 in—and intend casting the cylinders out of a mixture of brass and babbit metal, will it answer for that purpose?

[1011]—What is the best method of placing a coating of copper on an iron surface?

ANSWERS TO QUERIES.

[1008.] The following is an excellent remedy for the Rheumatism, Lumbago, Sprains,, Bruises, Chilblains, (before they are broken,) and Bites of Insects.—One raw egg well beaten, half a pint of vinegar, one ounce of spirits of turpentine, a quarter of an ounce of spirits of wine, a quarter of an ounce of camphor. These ingredients to be beaten well together, then put in a bottle and shaken for ten minutes, after which, to be corked down tightly to exclude the air. In half an hour it is fit for use. Directions:—To be well rubbed in, two, three, or four times a day. For rheumatism in the head, to be rubbed at the back of the neck and behind the ears. This liniment can be made at home for 25 cts.; if not made at home, the chemist should be told to follow the prescription exactly.

WHALE ARTILLERY.

On a small island opposite to the town of Wadso, in the extreme north of Norway, there exists an establishment the like of which is probably not to be met with in any part of the world. Its most appropriate designation would be, perhaps, a slaughter yard for whales; and Mr. Foyn, its proprietor, conducts the business of capturing and cutting up the monsters in a manner peculiarly his own. Instead of fitting out the usual sized vessels, intended to make long voyages and bring home only the most useful parts of the animal, Mr. Foyn employs small—one hundred and fifty to one hundred and eighty tons—screw steamers, shoots his fish with a canon, and has them towed back, one by one, as they are captured, to the shambles at Wadso. As the fishing grounds are within easy reach of the latter, the steamers, as a rule, secure and return with a prize within twelve hours' time. With respect to the cannon employed, it is a gun having a chamber about four feet long; this is mounted on the forecastle of the vessel, and, being very accurately balanced, can be easily moved to allow an exact aim to be taken. The projectile in use consists of a long iron bolt, having at its extreme end four harpoons, bound round with a line so as to be flat, and close to the harpoons a five or six pounder shell. As soon as the steamer has approached sufficiently near to the fish—and whales off that part of the coast are not over shy, allowing a vessel to come within shot—the bolt is fired off, and, if well directed, penetrates deeply into the flesh and blubber of the animal. The whale then naturally rushes off at a furious pace, thinking thus to elude his pursuers. Unfortunately for him, however, no step could be more suicidal, for the effect of his rapid movement is to make the bolt slip back a little, thus setting free the four harpoons from the lines, and, by means of a mechanical arrangement, causing a shell to explode. This generally proves the *coup de grace*, killing the fish outright; but occasionally the animal is not sufficiently hard hit, and its capture is not so easily effected, as it dashes away at a tremendous speed, dragging the steamer after it.—*Scientific American.*

ECONOMY IN MACHINE SHOPS.

The following suggestions, in regard to the care of tools and waste of oil in machine shops, are contained in a paper read before the New York Society of Practical Engineering, by James C. Bayles, editor of the *Iron Age:*

"The proper care of tools is always attended with an important economy. In small establishments this seldom receives due attention. As a rule, a tool belongs to anybody who happens to have it; consequently, no one is responsible for it. It is neglected, abused, mislaid, broken, stolen, or worn out before it has rendered half the service it is capable of performing. In some shops the time of one man, and sometimes two, is constantly lost in looking for missing tools and putting them in order for use when found; and a great deal of capital is wasted by the premature destruction of tools which, with proper care, should have lasted for years. In all manufactories there should be a place for tools not in constant use, and some one should have charge of them. A very good system, which I have always found to work well, provides for the changing of every tool in use to the man using it. When it is returned he receives a credit for it which balances his account with the tool department. For tools added to his individual kit, such as files and other implements supplied by employers, charge is made and no credit is given until the tool is returned broken or worn out, when a credit entry is made, with date, showing how long it has been in use. Such a record induces men to be careful of tools, and, by inculcating good habits in this respect, leads to economy in a direction in which waste and extravagance are easily overlooked.

"Another important saving in many shops would attend a more judicious oversight of the consumption of oil. In machine shops, and to a greater or less extent in all shops where machinery is used and iron worked, the amount of oil wasted constitutes a very large proportion of the total amount used. This waste results from a certain looseness of habit which most men acquire in handling materials which some one else pays for. When a drop of oil is needed, it is customary for the mechanic to pour a stream from his oil can, and wipe off the surplus with a wad of cotton waste. It is no exaggeration to say that half the oil used about many manufactories of machinery and metal goods is wasted, and the waste constitutes a serious item of expense. Oil is almost always used for lubricating purposes, especially in small establishments, yet there are other lubricants that might be kept constantly on hand, which are at once much cheaper and much better than oil, for such purposes as drilling, tapping, screw cutting, etc. There is also a great deal of oil wasted in applying it to machinery and shafting. Whenever we see a drip pan that has not been attended to for a few days, we may be pretty sure of finding it half full of oil which has rendered no service, and which has become unfit for use, being gummy, foul, and filled with foreign impurities. There is no need of this waste, which never occurs when the oiling of the shafting and machinery is properly looked after; but it is an evil against which the manufacturer can guard only by constant watchfulness."

PHOTOGRAPHY.

Spirit Photography.—At a recent meeting of the Berlin Photographic Society a communication from Dr. Stein was read in which he stated that he had recently met, at a spiritualistic congress, the notorious Parisian spirit photographers, Buguet and Leymarie, and although he exposed them then and there, by taking similar photographs, he failed to convince the audience. The explanation is simple. Dr. Stein had a negative in his pocket, which he copied by the light of a candle, in the dark room, before developing the portrait of the gentleman who appeared with a female "spirit" at his side.—*English Mechanic.*

Black Spots on Prints.—Mr. J. B. Butterfield, writing to our Philadelphia contemporary, says:—"Last winter I began to be troubled with minute black specks being deposited all over the albumenized surface of my paper while washing my prints before toning, and could not discover at the time the cause. I inquired from a number of photographers in regard to my trouble, and all seemed to agree that it was the paper; so I procured a sample of two or three different makes of paper, and still the same trouble. The paper appeared to be clear when printing, but after washing was full of those black specks, which, on rolling after being mounted, would have a metallic appearance. I began to get very much discouraged, having been troubled for about two months, and experimenting all the time to find the cause of the trouble (having made different silvering solutions, but still the same result), when at last I thought I would silver a piece of paper and not print it, but, after drying, place it in a porcelain dish, and, leaving plenty of light in my room, drew some water directly on it from the tap, and, by examining closely, I could see small particles depositing all over the surface, and which, on examination, proved to be iron-rust, having been loosened from the inside of a short piece of iron pipe by the frost over night, the moisture in the pipes freezing after the water was turned off. I caught and filtered some of the water, and was satisfied, from the deposit on the filter, that I had found the cause of my trouble, and have not used water for washing from that tap since, and have had a clear pictures as I ever had, and shall hereafter discard the use of iron pipes entirely."—*The Photographic News.*