

INDIA-RUBBER CLOTHES-WRINGER.

One of the most useful inventions that has made its appearance to confer blessings upon toiling womankind is the clothes-wringing machine, in which rubber rollers are employed. It saves much hard labor, and much wearisome twisting, and it is, therefore, an interesting question how far the use of such elastic rollers is monopolized by any one company. The question is frequently put to us, whether parties who purchase india-rubber hose or tubing can, at the time of such purchase, be limited in its use to any one specific purpose. In the case of the Washing Machine Company vs. Earle, tried in the Circuit Court, in New Jersey, before Justice Grier, in 1801, it was held that—

“A patentee may hold a close monopoly of his right, or he may grant out his entire right; but he cannot divide his right into parts and grant to one man the right to use it in its connection with, or application to one thing, and to another in connection with a different thing, to such an extent as that purchasers from any of these persons may not use the fabric purchased exactly as they like, and, if they please, in violation of what he has supposed were rights not granted by him.

“Goodyear, the patentee of vulcanized india-rubber, might have prevented any person from using his fabric for any purpose. But if he grants to A the exclusive right to use it to make ‘wringers’ only, and to B the right to make ‘tubes’ only, A cannot restrain C, who has bought tubes, from converting them into wringers by any process whatever that he, C, pleases. Neither can Goodyear.”

This decision is published on page 501, Law's Digest of Patent Law Cases, and we are not aware that the Supreme Court has ever overruled this decision.

Link Motion--The Relative Proportions of Slides and Steam-ports.

Mr. Albert Aston, of the Naval Engineering Corps, in a paper to the *Franklin Institute Journal*, has the following interesting information:—

“The best way of finding the position of the link for intermediate points of cutting off, is as follows:—When the engines are set up and the valve-gear adjusted (the valve-chest cover being off if practicable), turn the shaft until the cross-head arrives at the point desired. Then move the link until the steam-port is just closed, and mark the position of the catch on the guard, or whatever other device may be adopted. Next, turn the shaft until the cross-head is in a corresponding position on the return stroke; move the link until the port is closed and mark the position of the catch. Cut the notch midway between the marks on the guard and proceed in the same manner for the other points of cutting off.

“The only remaining question is that of the exhaust lap. If the exhaust lap was equal to the steam lap, the exhaust port would be closed at the same time as the steam-port, which would cause excessive cushioning. If, on the contrary, there was no exhaust lap, the exhaust port would be open long before the steam-port, and, consequently, before the piston had arrived at the end of its stroke. The loss due to this too early release of the steam is more serious than that due to cushioning, for it is all a loss of power; whereas the compressed vapor partially or wholly fills the port and clearance which would, otherwise, have to be supplied with fresh steam from the boiler. In fact, if the expansion were carried down to the back-pressure, there would be no loss of economic effect by the cushioning, however excessive. The best relative proportion which these two losses should bear to each other, is, evidently, that in which the sum of the two would be a minimum. This could be easily determined by means of the differential calculus if the curve traced on the indicator card by the escaping steam, and which is dependent on the proportion between the valve-opening and the cylinder capacity, and the speed of the piston between the point of release and the end of its stroke, could be known, and if the compressed vapor followed Mariotte's or any known law; but as the exhausting curve cannot be easily determined, and as the required condition is never fulfilled by the cushioning steam, accurate calculation is out of the question. It should be remembered, however, that the valve should open long enough before the end of the stroke to allow the piston to commence its return stroke

with the maximum vacuum, and that the cushioning is not perceptible on the indicator card until some time after the exhaust-port is actually closed, owing to the rapid condensation of the compressed vapor; and were it not for the atmospheric air mixed with the steam in the cylinder, the cushion curve would be much less than it is actually found to be, and a much earlier closing of the exhaust would be practicable. The problem is also affected by the absolute amount of back pressure; but it is found, from the inspection of a large number of indicator cards, that the most satisfactory diagrams are obtained when the exhaust lap is about one-half the steam lap.

“It is practically desirable to keep the stroke of the valve as small as possible, the steam-ports should be made as narrow as possible, the requisite area being made up by length. This will cause more resistance to the passage of the steam, but the area can be slightly increased to compensate it.

“As the steam is not required to enter the cylinder as quickly as it should leave it, the steam side of the valve should only uncover about three-fourths of the width of the port. The exhaust side should always give the full opening, which it will do if the exhaust lap is properly proportioned to the steam lap. The opening of the port on the steam side of the valve, is what must be used with the foregoing formulas. A good rule for finding the area, in square inches, of the steam-port, is, to multiply the square of the diameter of the cylinder, in inches, by the velocity of the piston in feet per minute, and divide by 4,000.

“It might also be observed, that the length of the link, from center to center, should be at least three times the stroke of the valve, and that the best radius for its center line is the distance from the center of the pin to the center of the eccentric.”

General Butler's Canal at Dutch Gap.

This work, while in progress, and all concerning it, cannot fail to be of interest. From persons well acquainted with the geography of Dutch Gap, through which the canal is being cut, we have learned some facts which will enable the reader to understand the character and magnitude of the work Butler has undertaken.

The isthmus known as Dutch Gap, which connects Farrar's Island with the mainland on the north bank of the river, is exactly two hundred yards across, being eighty feet high on the western side, and sloping down to the river on the east channel of the river, which runs against the west side, striking it obliquely just off the shore. At this point the water is from ten to fifteen feet deep. The channel being on this side will greatly aid Butler, should he ever complete his canal, as, had it been in the middle or on the opposite side of the river, he would have been obliged to construct a huge breakwater to turn the stream into the canal. We learn he is cutting diagonally through the Isthmus, being one hundred yards below the narrowest point, and designing to come out at a point where the canal strikes the bank. This will give his canal, if ever finished, a length of about three hundred yards. As we stated on a previous occasion, we have reason to believe that the canal proper has been begun to be cut to the water's edge, which is a secondary preliminary, having not yet been more than two-thirds completed.—*Richmond Examiner*.

Value of a Patent.

The *English Oil Trade Review* says:—The patent right taken out by Mr. James Young, the discoverer and first manufacturer of paraffin oils in commercial quantities, expires during the present month. All the manufacturing trades in Great Britain have been looking forward with great interest to the time when Mr. Young's patent shall be void, as there is very little probability, if any, that a renewal of it will be obtained. Great preparations have therefore been made during the past twelve months for the erection of works in all suitable parts of the kingdom, to be devoted to the manufacture of paraffin. An enormous amount of capital has thus been invested.

An experiment of a highly interesting and important character—that of breeding salmon and stocking the Dennysville River, in Maine, with those fish—has been carried on for several years, and we learn from the *Machias Union* that the return of salmon to the river proves the enterprise a complete success.

MISCELLANEOUS SUMMARY.

ELECTRO-PLATING BY MAGNETIC MACHINES ABANDONED.—We stated sometime since that electroplating by means of magneto-electric machines was being conducted on a large scale at College Point, Long Island, by Mr. L. L. Smith. We now learn from Mr. Smith that he has returned to this city and resumed the use of batteries. The machines did very good work, but the cost of steam power to drive them was greater than the cost of acids and metals for the batteries.

THE SORGHUM CROP OF THE LOWER TOWNSHIPS OF BUCKS COUNTY IS QUITE LARGE. There is scarcely a farmer who has not raised enough to supply his family. The manufacturers of molasses are kept busy. At some of the mills there is enough cane on hand to keep them running till Christmas. The crop is a very profitable one, yielding about 160 gallons per acre, which sells at \$1 30 per gallon by the barrel; cost of manufacturing, 30 cents per gallon, which leaves a clear profit of \$100 per acre.

“THE TELEGRAPHER.”—We have received the two first numbers of *The Telegrapher*, a monthly journal published at 145 Broadway, New York, by the National Telegraphic Union, and devoted to the interests of the art. It is handsomely got up, and is conducted with ability, the editor and contributors being practical men of large experience in the profession. We wish it success, as such a paper, we imagine, has long been needed as the exponent of telegraphic matters. Terms \$2 per year.

HIGH VELOCITY.—There was a small model of a turbine wheel on exhibition at the San Francisco Fair, which revolved at the enormous velocity of five thousand times in a minute—a motion so rapid that it does not appear to move at all, till the finger is placed on the surface which creates a heat by the friction equal to red-hot iron.

AN unique arm-chair has been made at Norfolk by one of the oldest acting masters in the naval service, for the National Sailors' Fair. It is made wholly from sunken ships, has miniature guns for arms, and is altogether one of the most novel articles contributed to the fair.

EXHAUST LEAD AND STEAM LEAD.—In an abstruse paper on the “Cinematics of the Slide Valve,” published in the *Franklin Journal*, Mr. Albert Aston of the navy, states it is found from the inspection of a large number of indicator cards, that the best results are obtained when the lead on the exhaust side of the valve is half that on the steam side.

PETROLEUM AS SALAD OIL.—A recent article says:—Every day new uses for this substance are being discovered. Its use for culinary purposes even is being discussed. We know of one gentleman who eats it on salad, and prefers it to olive oil!

A practical furrier says:—“The best way to keep moths from furs when putting them away in the spring is to beat them and comb them; it is better than pepper, snuff, tobacco, or anything of the kind.”

AN unusual abundance of birds of prey, such as hawks, winter falcons, &c., of large size, has been remarked this fall throughout various parts of the country.

THE steamer *Daniel Drew* recently ran from Albany to this city in 6 hours and 23 minutes; the distance is 160 miles.

THE celebrated Blackfriars Bridge, at London, is in progress of demolition, and a new one is to be erected in its place.

KING'S Notes on the Steam Engine and Bourne's Catechism are good books for engineers.

SPECIAL NOTICE.

WM. O. GROVER & WM. E. BAKER, of Boston, Mass., have petitioned for the extension of a patent granted to them on Feb. 11, 1851, for an improvement in sewing machines.

It is ordered that the said petition be heard at the Patent Office, Washington, on Monday, Jan. 23, 1866.

All persons interested are required to appear and show cause why said petition should not be granted. Persons opposing the extension are required to file their testimony in writing at least twenty days before the final hearing.