To Dress Satin.

Lay down the satin with its wrong side on a clean flat board. Then take a sponge and dip it into some gum water, or water in which there is dissolved a little white glue, and with this rub the satin with the grain or along with the selvage, and afterwards iron it on the wrong side on a soft table, taking care to iron the edges straight and leave no wrinkles. If the satin is merely wrinkled without being worn in the creases, this dressing will make it equal to new.

To Clean Silk.

This is a very particular job. Hard silks, such as lutestring, were never made to be wet, for when creases are made in hard silk, the twists of the threads are generally broken and this never can be rectified by dressing, dyeing or cleaning. This is the reason why redyed and re-dressed hard silks, have always a whitish, cottony surface. Soft silks, however, clean very well. The way to do this, is to dissolve some Castile soap and let it get perfectly cold, then take the silk and wash it in this taking care not to rub it so as the grain of the silk will be broken, but to rub a piece of hard soap on the grease spots, if there are any, and wash them by squeezing and gently rubbing the silk in the cold soap solution, which must be strong enough to feel slippery in the fingers. When the silk is thus carefully washed it is taken out of the soap and washed in clear cold water—giving it two or three clean waters at least. After this it should be run through a solution of milk warm water in which is dissolved a little alum, and then it should be wrung in a clean cotton cloth, as hard as possible, when it is then fit to be stretched on a frame, sponged over with a weak solution of gum, or white glue, and dried, taking care to stretch out all the wrinkles while the silk is wet, and let it dry in that state. The silk may be pinned down on a mattress, if the person has no frame, and left to dry, when all the wrinkles will he found to have disappeared. Green and blue colors are very apt to run in the drying and fade in the washing, they must therefore be carefully managed Striped silks that have a blue or green satin stripe and hard lutestring foundation cannot be cleaned but with great risk.—The way silks should be wrung, is to spread the silk in the cotton cloth, with the selvages parallel and roll the two together like one sheet of paper rolled up within the other, the cotton cloth being on the outside. This saves the silk from rubbing and creasing. The above may be fully trusted.

To Clean Kid Gloves.

First, see that your hands are clean, then put on your gloves and wash them as though you were washing your hands in a basin of turpentine, until quite clean—then hang them up in a warm place, or where there is a current of air, which will carry off the smell of the turpentine.

We cannot vouch for the genuineness of this receipt, but we have been informed that this is the way the French dyers clean their gloves, and some that have been cleaned in this city, we know smell confoundedly strong of turpentine. But one thing we know, if the turpentine is not properly refined, it will leave a dirty resinous surface behind it. We should suppose that to wash the gloves in a solution of strong cold soap, then in a solution of ammonia and cold water, and after this in cold water, finishing out in a solution of alum and water, would be by far the best plan to clean fine gloves, taking care to keep them stretched till they are perfectly dry. We have seen gloves cleaned handsomely just by fine soap, a strong solution, and the soap suffered to dry in the gloves.

The Austrian government has forbidden the wearing of red garments of any description in Vienna, even to a red scarf, &c. on the penalty of imprisonment.

Steam Engine Indicators.

This is the best and most complete Instrument that has been as yet invented to investigate the principal features of the Steam Engine. By it we are enabled to explain all the different operations the Steam undergoes in the cylinder, as well as a number of other matters equally interesting to the engineer; we can tell whether the steam enters the cylinder at the proper time, if too quick or too slow, and if it is the same pressure in the cylinder as it is in the boiler. If the steam pipes, openings, and valves are of sufficient area. If using a cut-off, and at what particular part of the stroke the steam will be cut off. If the expansion be correct and the amount of the same, together with the pressure of steam due to a certain expansion. The vacuum obtained, if equal or better, than that shown by the mercurial guage. If the steam and exhaust valves open at the proper time, if too quick or too slow. It also gives the correct pressure of steam and vacuum by which we are to calculate the power of an engine. It is in fact the only instrument which will enable us to tell whether the engine may be doing its duty and whether in good condition or not. Now the cards traced by the indicator will tell all this and much more of equal interest.

The two accompanying diagrams are intended to illustrate some of the main features which the indicator is calculated to display.

Fig. 1.

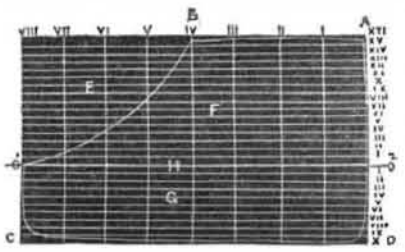


Fig. 1. Is the fac simile of the card traced by one of the engines of the U. S. Steamer "Michigan" on Lake Erie. A is the starting corner. B the point of cut-off. C the exhaust corner. D the lead corner. E the amount of expansion. F the steam expended. G the vacuum obtained, and H the atmospheric line. The same letters will answer for fig. 2.

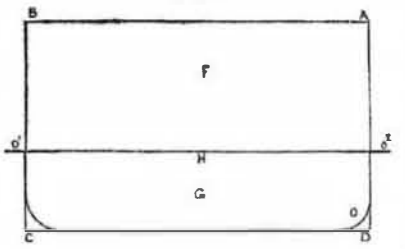
After the paper is put round the barrel or cylinder of the indicator, motion is given it from some part of the engine, and the pencil, before steam is let on, will mark the straight line H between O1 and O2, the length of which represents the stroke of the Piston. After the engine has made a few revolutions, with the Indicator barrel in motion, the cock, communicating with the piston of the indicator, is opened as the engine arrives at the centre, the pencil instantly flys up to the starting corner A, the height of which, will mark the pressure of steam in the cylinder; the scale on the indicator is graduated for tenths of an inch, each tenth indicating one inch of pressure in the cylinder, the pencil starting from A B, this line shows the steam is operating with its whole force; when the pencil has arrived at B the cut-off closes, the pencil will then commence falling, and will describe the curve from B to O1, showing the gradual diminution of the steam to the end of the stroke. When the stroke is completed the pencil will fall from O1 in the direction of C, and the vacuum holding it there will mark the line C D.

The figures 1 to 8, represent the stroke of the piston: this card shows the steam cut-off at 4 which is half the stroke of the engine, and the engine that traced it, cuts-off exactly at that point. The small parallelograms may be counted as the square inches of pressure, the space F as the strong steam and the space G, as the vacuum obtained.

If the steam does not enter the cylinder at the proper time, if too quick, the corner D will be cut away or rounded too much, if too slow there will be no rounding at the corner, but as at D, figure 2, the two lines will form a right angle, the proper rounding, or lead, is shown at O, fig. 2. The figures from 1 to 16 mark the actual pressure of steam in the cylinder, which will be found generally a few inches lower than that shown by the mercurial guage.

If the steam pipes, valves or openings be not of sufficient area, the line from A will be angling in the direction of O1. If not using a cut off, the line from A to B should be parallel with the line H, as in fig. 2d. If using steam expansively, this line should be parallel to H until the cut off closes, and then commence falling as from B to O1, figure 1.

Fig. 2.



The figures from 1 to 10, represent the number of inches of vacuum obtained, but in consequence of the scale of the Indicator being groduated to but 15 inches, the amount on the card must be doubled, which in this case would be 10 inches. The vacuum shown on the cards will never equal that shown by the mercurial guage attached to the condenser, the reason is, there is always more or less attenuated vapor remaining in the cylinder which renders the vacuum less perfect than that in the condenser. If the exhaust valves do not open quick enough, that is, if they have not the required lead, the corner at C will be less rounded, and the two lines will make more of a right angle, the necessary rounding is shown at C, fig. 2. The height the pencil is forced up above the atmospheric line H, will indicate correctly the pressure of steam in the cylinder, and the distance below the line the pressure of the vacuum, and if we wish to calculate the power of an engine, this will be the correct data.

Now from the above explanation, it is evident, that if an engine is working full stroke and there should be no impediment to the steam entering or leaving the cylinder, the cards would be perfect parallellograms, because the moment the steam was admitted to the Indicator the pencil would be forced up to the height due to the pressure of steam in the cylinder, where it would remain and form the line A B, fig. 2, until the completion of the stroke; it would then descend to C, and remain there until the return stroke was completed forming the line C D, the pressure due to the vacuum; on arriving at D, steam would be again admitted and the pencil forced up to A, the starting point, and so on. But as the steam takes time to enter and time to leave the cylinder, the cards will never be as above described, but always be more or less rounded or cut away at the corners.

J. M. M., U. S. N.

Useful Problems.

The following are the answers to the Problems in our last:—

Problem 1.—4 inches; hence the rule:—Divide the length in feet by the square root of the depth in inches, and multiply the quotient by 0.6.

2. In order to gain the maximum stiffness, we must make the breadth or thickness 6 inches, and depth, 10½; to give it the greatest strength, the breadth should be 7 inches and depth 9 3-4.

3. About 50,000 square miles; for he sees $\frac{2}{8000} : (\frac{4}{8000} + 1)$ of its surface, $= \frac{2}{8004}$; for there is visible one third the surface of a sphere when viewed from a point whose distance equals its diameter.

4. Hydrobromate of chlorinized cinchonina, and hydrochlorate of brominized cinchonina. They have the same composition and are isomorphous, yet not identical. The composition of the former is C19 (H20 Cl2) N2 O, H2 Br2; that of the latter C19 (H20 Br2) N2 O, H2 Cl2

The Slippery Elm.

One of the most valuable, as it is well known, articles in our country, is the slippery elm. All our apothecaries keep it, both the flour and the bark. It is indigenous to our clime, and it contains a great amount of human nourishment. It is medicinal also.—The sailor, the soldier, and traveller, should never be without it.

LITERARY NOTICES.

The Scalpel.

We have carefully perused the two numbers which have been issued of this Quarterly Magazine, edited and published by Edward H. Dixon, M. D. of No. 5 Mercer st. this city. The result of our examination is a firm conviction that it will be the means of doing a great deal of good, in the exposition of quackery in every garb arrayed, as connected with medical science. It fills up a vacuity in connection with the professions and practice of curing and preventing the ills incident to humanity, as there is not a sensible man living but has had his faith somewhat damaged by the *hocs* and *shocs* of professors learned and unlearned in the healing art. Dr. Dixon attacks all the nonsense and gibberish, and ignorance connected with the profession and stands upon the true ground—viz. knowledge in Nature's laws. These he expounds with the skill of a master and the fearlessness of a Catonian Censor. As a journal of health and eminently adapted for popular and professional reading, we heartily recommend it to the attention of all—no family in our land should be without it.

Elements of Chemistry and Electricity.

This is a most excellent volume of Chambers' Educational Course, published by A. S. Barnes & Co. of this city. It is composed of two distinct parts, "the Elements of Chemistry, by Dr. Reid, F. R. S." and "the Elements of Chemistry by Alexander Bain, inventor of the electric clock, and who has received two electric patents in the U. S. The work is edited by Dr. Reese of this city.

We know of no series of books equal to Chambers' Educational Course for School Libraries and for youthful reading. It is our opinion that no family should want them, especially the scientific works published by Messrs. Barnes & Co.

The American Mechanic.

This is the title of a new weekly paper published at Athens, Geo., by an Association of mechanics named the "Mechanics Mutual Aid Association." Tho officers should communicate with G. J. Webb, Esq. of Buffalo, N. Y. and get a charter for a Mechanics Mutual Protection, of which Mr. Webb is grand officer for the U. S. This Order we believe has more than 100 associations in the U. S., and has one paper devoted to the advocacy of its principles, viz the Mechanics Advocate, Albany, N. Y. There seems to be a great movement going on among the mechanical classes in our country at present. We wish the Mechanic success.

Horn's Railroad Gazette, published in this city, is a very valuable, because a useful paper. No man travelling should be without it.