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THE
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Rail Road News.

Troy and Boston Railway.

The Troy papers of Saturday announce the fact that the entire line of this road has been put under contract. The directors, in their circular, state that they have contracted with responsible men to build the road to Pownall, Vermont, 36½ miles—its entire distance—for $720,000; which includes every expense connected with building the road, even to iron and land damages; to be paid as follows. cash, $400,000; stock, $200,000, bonds $120,000.—If this plan is strictly carried out, it will prove, we should judge, a wise and judicious arrangement, as the company know just what their road is going to cost. For furniture of the road, and interests, they estimate $130,000, making a total of $850,000; of which $440,000 is subscribed, $225,000 more is taken by contractors—leaving a debt of $185,000. The contractors are to finish the road "on or before the 1st of July, 1851," if they can.

Large Locomotives.

The largest locomotive in the world, says the Madison Courier of the 11th inst., arrived at the wharf last night, for the Madison and Indianapolis Railroad. This locomotive when on the track ready to run, weighs about forty-three tons—is over 800 horse power. It was built in the shop of the Baldwins, in Philadelphia, under the superintendence of Mr. A Cathcart, with five cylinders, and is intended for this end of the road. We are told this engine is called the John Brough, on account of its great weight and for the great amount of business it is capable of doing.

Whom We Trust Our Lives To.

The report of the committee of the National Convention, recently in session at Cincinnati, mentions that the medical schools in our country are too many, the students too numerous, the professors too few and incapable, the quantity of instruction too limited, the quality too superficial, and the preparatory training insufficient. Yet are our lives entrusted to the persons who are pronounced capable after this kind of instruction.

Missouri Pacific Railway.

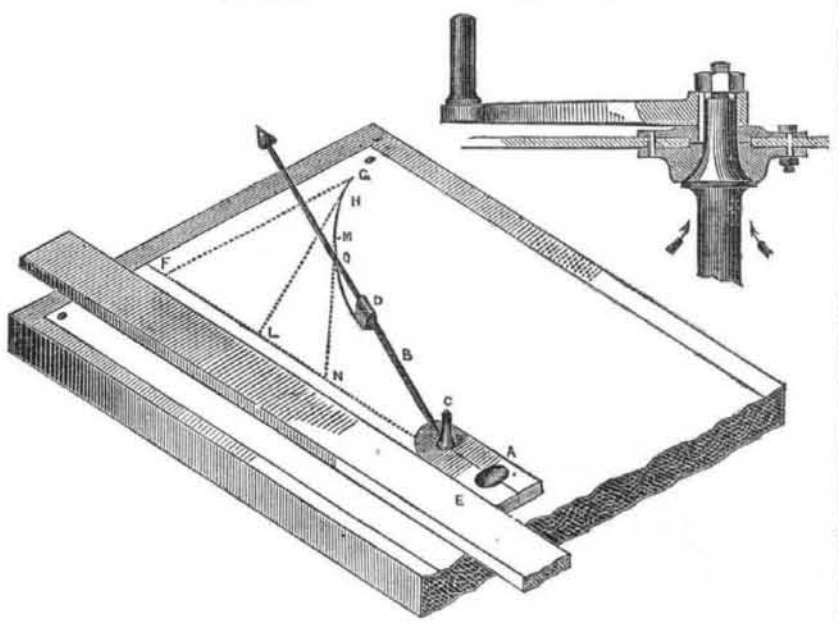
James P. Kirkwood, Esq., late Superintendant of the New York and Erie Railroad, has been appointed Chief Engineer of this Railroad. He is a skilful, able and experienced engineer. Chas. Minot, Esq., formerly superintendent of the Boston and Maine Railroad, has been chosen to fill the place of Mr. Kirkwood on the N. Y. and Erie R. R.

The Auburn and Rochester Railroad formerly consisting of two corporations but connected together, have consolidated themselves into one corporate body.

The direct railroad communication between New York and Boston, by way of New Haven and Springfield, is drawing so largely upon the Stonington route that the managers of that line are to reduce the fare from $4 to $2,50.

SCHIELE'S ANTI-FRICTION CURVE.

Figure 1. Figure 2.



On our list of Patents this week there is one granted to Mr. Christian Schiele of Frankfort, Germany, (a free city,) for the very important discovery of the true form of rubbing surfaces for regulating equal abrasion. This curve is applicable to all bearings of machinery, such as valves, journals, &c. The practical defect in rotating valves, is, that they gradually wear loose, owing to their working action and great friction, produced by forcible tightening up. This is the reason why so many rotary engines have worked well for some time, and then failed beyond a remedy. Irregular friction, with all its injurious effects, is well exemplified in the conical plugged stop-cock, for the amount of wear of the larger end differs from that at the smaller end, because *every point* of the former has a larger frictional traverse than any point in the latter. To lessen this evil, the plug is made nearly cylindrical, but the evil attending this form is that a little pressure

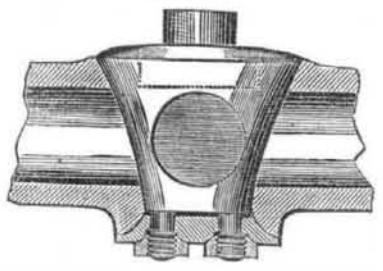
Fig. 3.

binds the plug in its socket, and very little wear causes the plug to sink considerably, hence the plugs and shells have to be made long and heavy. As the friction of a plug and its socket divides itself in such a manner that the product of the pressure multiplied by the length of way, is the same for any point in the rubbing surfaces, so the length of way being different in different parts, the pressure must differ also—being greatest at the smallest end; and as the largest end must be tight as well as any other part, the wear of the smallest part is obvious. The inventor Mr. Schiele, who is now residing in Manchester, England, from which place his papers were sent here, had his attention drawn to these things some years ago, which resulted in this invention, for which he obtained a patent in England in 1848, and now one for the United States, and to elucidate its principle and its application eight different figures are here introduced.

Figure 1 is the instrument used to describe the curve, and fig. 2 is a vertical section of a locomotive engine regulator constructed on the principle of the curve; fig. 3 is the generated curve itself, and fig. 4 is the vertical section of the shell of a stop cock, the plug of which is formed on the principle of the new curve—free from the imperfections of the old and possessing the property of keeping tight as it wears.

In figure 1 A is a small modern slide to which the rod B is adjusted by a pin C. D is a drawing pen affixed to a slide which can be moved upon the rod B to the proper distance for the curved required, and is kept in that end in a vertical position, by a spring which fits a groove. This direction of the sharp edge of the pen, D, is in a straight line to the pin, C. E is a ruler, along the edge of which the slide, A, is to be drawn. If the slide, A, and the rod, B, are so placed that the pin, C, shall be

Fig. 4.



at F, the pen at D, and the point at G; the centre line of the rod, B, will then be over the dotted line, G F, at right angles with the dotted lines, L N, (representing the axis of the curve to be drawn,) and if the slide, A, be then guided along the edge of the ruler, E, the pin, C will move along the dotted line, N, dragging, as it were, the pen, D, after it, which will describe the curved line, G H M O. F G, L H, M N, represent some of the tangents—the main features and principle of this curve being one, as shown in fig. 3, and the revolution of the curve drawn by the instrument, fig. 1, round its axis, L N, produces fig. 3, which has a surface with an equality of all its tangents drawn from the curved surface to its axis,—hence the use of the instrument, fig. 1. That the curve thus generated will produce the results stated, an equality of abrasion in both shell and plug, appears to be as self-evident as the axiom, "all the radii of a circle are equal."—[*Continued on 4th page.*]

Useful Receipts.

Straw for Hats.

In Italy the straw used for hats is made of rye, which is sown on poor land, very thick, and it therefore does not grow to above one half of its usual size. The rye straw used for braiding is cut near the ground when the grain is in the milk. It is tied up in small bundles, the heads cut off, and then it is dipped in boiling water, and put out to dry in the sun, taking care to take it in at night, and allowing no dew to get on it. When properly dried it is cut into proper lengths, drawn between the fingers with a blunt knife edge along the inside, and is used either for fine or coarse bonnets, as is desired. The tool used for splitting straw is a piece of wood five inches long, with a series of sharp spurs near one end, with a wooden or metal spring over the spurs—or, rather, one side of them—which is pressed down upon the straw to keep it spread flat while it is drawn over the spurs and split.

Straw is bleached by wetting it, and putting it into a tight box or barrel with some sulphur placed on hot coals in an iron pot, placed on the bottom of it, so as to allow the straw to receive the free action of the sulphurous vapor. Two ounces of bar sulphur will bleach a pound of straw. The straw must be kept from the sides of the box, by laying it on strips of wood running across the box or cask. It should not be taken out of the sulphur box in less time than four hours. Old straw, leghorn, or palm leaf hats or bonnets, may be whitened in this way, if they are thoroughly washed with a brush or sponge in soap-suds, before smoking. Straw must always be wet when it is braided, to prevent its breaking. An ingenious person can learn to braid or plait straw by taking a piece of old braid, and wet it, and pick it to pieces, and then braid it again.—When the straw hats are dry, after being cleaned, they are sized with size made of clean parchment parings boiled in water, and then hung out to dry; and are afterwards pressed with clean damp clothes and hot irons, on blocks which fit them to the desired shape.

Woolens and Furs.

Many persons suppose that the best way to prevent moths from getting into woolens or furs, is occasionally through the summer to hang these articles in the sun and rain. This is a great mistake, as it is by such exposure that the moths are most likely to get into them. On the contrary, in the spring, when the season is over for furs and woolens, they should be well shaken and brushed, and then wrapped up tightly in linen, laying among them lumps of camphor; handsful of fresh hops; cedar shavings, and above all fat pine wood shavings, all of which are preventives to moths; the camphor is by far the best for furs. All woolens, &c., should be kept during the summer unopened, in dark dry places such as drawers or large chests. Cedar presses are preferable to all others, for keeping cloths or other woolen articles. Hair trunks rarely fail to introduce moths. The month of June is the best time to put away flannels.

As you would save the strength and wind of a horse, drive slow up hill; and as you value your own and the life of the horse, drive slow down hill. But on level ground, if you must drive fast, draw a taut rein, and "let him slide."

New Inventions.

New Kind of Cotton Bagging.

The Southern Whig says, "We understand that Col. Mosery, a native of this State, and for many years a resident of Wilkes county, but now an enterprising citizen of Mississippi, has discovered a process by which a very superior article of Cotton Bagging can be made of the long moss so abundant throughout the Southern States. We learn that he is about securing a patent for his discovery, and that he has just returned from the North, where he as purchased machinery for a Bagging Factory which he is about to establish at or near Jackson, Mississippi. If this experiment should succeed as well as the discoverer of the new process anticipates, it will probably effect a revolution in the manufacture of this article, which enters so largely into the annual consumption of the planters of the South—as doubtless bagging manufactured of this material can be furnished much lower, while it is said to be far superior to any now in use."

Improvement in Pitchforks.

Mr. Alinzor Clark of Southfield, Richmond Co., Staten Island, has invented an improvement on pitchforks which is well worthy of patronage and for which he has taken measures to secure a patent. The improvement consists in the manner by which he can transform the fork from one of two prongs, to three prongs, so as to make it more suitable for forking and and pitching, both long and short hay, &c., as may be desired. The transforming of the prongs can be performed in a second and either as a the or three prongs, are retained firmly in their places. We like to see improvements in agricultural implements—-agriculture is the right hand of our national prosperity.

New Pumping Apparatus.

We see it stated in some of our exchanges that Mr. W. G. Johnson of St. Georges, Deleware, has made some valuable improvements in apparatus for pumping water and has in operation an engine with a cylinder four inches in diameter, and twelve inches stroke, with which he is working eight pumps, each fifteen an a half inches in diameter of bore, and twelve inches of stroke, making sixty-four strokes per minute, and discharging the water nineteen feet high.

Wilson's Stone Cutting Machine.

In our article on Wilson's Stone Cutting Machine, last week, Messrs. Shelton & Flagg were mentioned as the proprietors of the patent. This was an error; Messrs. Shelton, Flagg & Andrews, of No. 12 Wall street, Counsellors and Attorneys, are the Attorneys for the proprietors, and are their agents in this city. There was also an error in the name of the firm owning the machines now at work in New York—the true name is Sherman & Houdayer.

New Iron Bridge at Washington.

Mr. Rider of this city has put up one of his iron Bridges over the Creek, at Washington. It has a span of 110 feet; it has two carriage ways and two foot paths, and presents a very graceful appearance. It was tested as to capacity, last week, by Mr. Rider in presence of President Taylor, Mr. Ewing of the Home Department and the Mayors and Councils of Washington and Georgetown.

New Carriage Step for Stages.

Some of our omnibuses have got up a new carriage step, which is thrust out when the door opens, and springs in when the door closes. This is done by the driver pressing with his foot upon a spring. This step will prevent the boys from riding for nothing. We called attention to a step of this kind in volume 4, and are glad to see its introduction.

Silk Manufactory in Massachusetts.

M. Vogel, a Swiss gentleman and the inventor of the heddle machine, is about to start a silk factory near Chelsea, Mass., to make ribbons, vestings and all kinds of figured silk work.

Alum and Muriate of Soda are found in considerable quantities in Columbia and Lincoln counties, Georgia. The muriate of soda is salt.

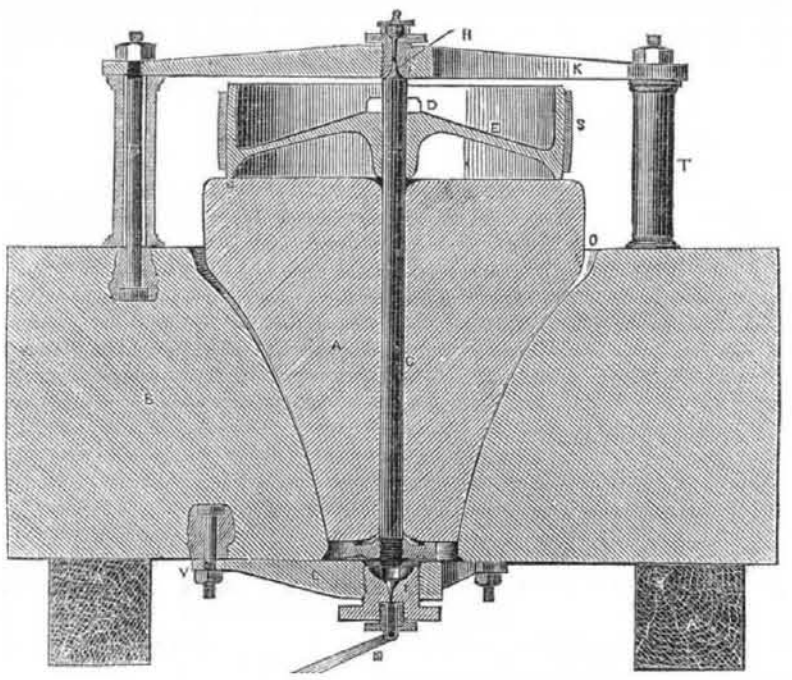
SCHIELS' ANTI-FRICTION CURVE.--Continued from Page 1.

Having presented on the front page, fig. 4, a section of a regulator of a locomotive engine, it will be understood that the same curve is applicable to all revolving valves, (perhaps substitutes for slide valves,) revolving joints in pipes, spindles of lathes, railway turn-tables, footsteps of upright shafts, and numerous other applications, which will strike the mind of the mechanician at once. The friction of this curve in its bearing, is at a minimum, and may be expressed as follows :— $\frac{8GLNP}{C(D^2-d^2)}$

where P is equal to the whole pressure, the rubbing surfaces have to bear in the direction of their axis; D the diameter of the larger part; d the diameter of the smaller part; L length of generating curve; G the distance of the centre of gravity of the curve from the axis; C the co-efficients of friction, and N the number of revolutions. The curve is one of great grace, reminding us of Hogarth's "bounding line of beauty," and is most accurately drawn by the apparatus, fig. 1, which is constructed by Mr. Schiele.

Figure 5 is an ingenious application of this principle to the grinding surfaces of MILL STONES, being a vertical section, and shows beautifully how the gradual variation of the

Figure 5.



curvature in relation to the increasing distance of the parts from the centre of motion, equalizes the rubbing pressure in the most perfect manner. The lower step at I is supposed to bear about equal pressure from the side and from below, in the direction of its axis and the inclination of its thicker part is at B, fig. 1. For the construction of the rubbing surfaces of mill stones, it is taken at an inclination of about 45°, as at B, fig. 1, for the larger diameter; this being considered sufficient for the grain to slide down. The application of the curve is also shown in fig. 5, to footsteps. A is the upper or inner running mill stone; B is the lower or side stationary one; C is the spindle secured to the stone by a nut, D. E is the pulley. The pivots run in bearings, H I, which can be raised by securing them in the frame, K L. These frames are fastened to the larger stone by nuts, T V, screwing on bolts, U. An oil cup is in communication with the lower step, to lubricate it. The oil gathers in the step at I, and runs off in the small conduit, N. O is a canal round the stone, B, for receiving the grain. The space between the rubbing surfaces adjoining the canal opens sufficiently to receive the grain, which gradually descends until it is ground, when it passes off by a spout below, (not attached.) S is the band; a a are sills to support the apparatus.

To afford a comparitive test of the effect produced by the new curve, in relation to that of ordinary rubbing surfaces, the inventor formed a variety of frictional contours of equal diameters from the same cast of iron, carefully annealed, and compared each of them separately, under different pressures, in the direction of their axes, with the proposed curve.

Fig. 6, of our engravings, represents a sectional view of the different forms tested; and fig. 7 exhibits the same after wear.

Figure 6.

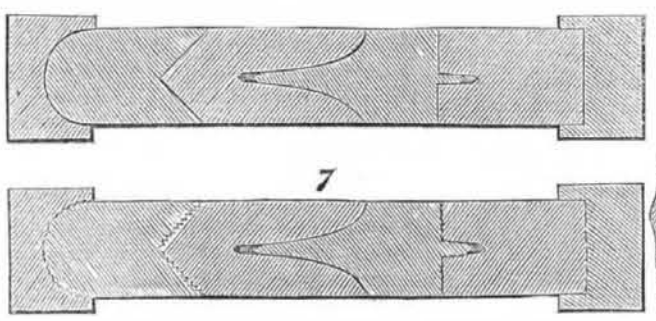
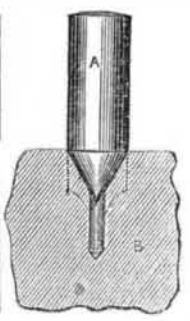


Figure 8.



In some instances, the old forms evidenced a less amount of friction than the new one, but this was for a limited period only at the commencement, as very quickly the destructive wear, increasing towards the centre, caused so much friction that the parts adhered firmly together.

The conformity of this principle with the workings of nature is a circumstance arguing most favourably for the application of the new system; and the following experiment, which any one may easily try, affords the evidence required by the practical man.

Take two pieces of chalk, A and B, fig. 8, A is cylindrical and conically tapered on one end, which is made to fit nicely into B. The centre of the hole in B must be drilled out, and the two pieces rubbed against each other, the rubbing surfaces being cleared occasionally with a soft brush, removing any particles of sand which may scratch one or other of the surfaces. After continuing the movement for a short time, the inclination to the anti-friction curve gradually appears, and the longer the rubbing is continued, the nearer do the surfaces approximate to the contour referred to.—The dotted lines in fig. 8 illustrate what is meant. Mr. Schiele has exhibited the apparatus he has employed, together with the results obtained, to any one who may wish to pass his own judgement upon the idea, as reduced to practice.

Mr. P. R. Mehlgarten, in the employ of the Lowel Machine Shop, Lowell, Mass., is agent for the United States and is enabled to fill all orders through the company and to attend to any communication, post paid, upon business connected with his agency.

Manufactures from the Cocoanut.

"The cocoa manufactures are remarkable for simplicity of the process resorted to, and for the usefulness of the articles produced, in many instances, from materials formerly thrown away as useless. The cocoa nut as it comes from the tree consists—first, of the outer husk, composed of fibres matted and adhering together; secondly, the shell; and, thirdly, the kernel. The manufacturers up to the present time employed only the outer husk and kernel. The natives of India have long used the fibres obtained by rotting the outer husk till the fibres can be seperated by beating the husks.—The fibres are spun into yarn by the native girls and women, by rubbing such fibres between the palm of the hand and the surface of the leg; and in this manner is made the large quantity of Coir yarn brought into that coun- and used for weaving cloths for covering passages and rooms, and also matting for various uses. Notwithstanding this rude mode of spinning the fibres up to the present time no better means have yet been introduced; and the whole of the yarn employed in England try is imported. This, however, may be accounted for by reason of there having been no practical mode of obtaining the fibre in Britain from the husks till very lately. Now, however, that ready means of obtaining the fibres from the husks are known, it is reasonable to expect some better means of spinning will be invented. The husks are beaten to obtain the fibre, which consists of three descriptions:—first, a light elastic fibre suitable for stuffing furniture; secondly, a coarser fibre used for making mats; and thirdly, a strong fibre used for brushes and brooms. The husks are soaked for some time, then subjected to the presure of grooved rollers, and then by successive processes of carding by revolving cylinders armed with bent teeth, the fibres are combed out, the separate descriptions of fires being deposited in different receivers. The uses of these fibres are for making of brushes, brooms, mats, and mattresses. The kernels are dried in the sun, then pounded in mills to extract the oil; but in more modern times the dried kernel has been pressed between mats in powerful presses.—The oil for the most part is sent to England, and was formerly largely employed in the manufacturing of candles. The oil being, when it comes to London, of about the consistency of lard, requires pressing to separate the stearine from the œlaine, and this is done between mats of cocoa nut fibre pressed in powerful presses. The stearine was used forcandles at first alone, then in combination with stearic acid of tallow, producing what are called composite candles; and it was the introduction of stearine of cocoa nut, combined with steric acid, which constituted the first step to the great improvement which has taken place in the manufacture of candles. The larger quantities of cocoa nut oil, however, are now exported to France to make soap,—the use of such oil in candle making being now for the most part substituted by palm oil. It has ately been proposed, in Ceylon, to employ the juice of the cocoa nut tree for the making of sugar; it being considered that each tree is capable of producing upwards of one hundred weight per annum, and that an acre of cocoa nut trees, requiring little cultivation, will produce at least twice as much sugar as an acre of sugar cane requiring much more cultivation.

The Austrain goverment has notified that it will pay 20,000 ducats to the person who will construct and deliver the best locomotive for the railway which passes by the Summering, the mountain which separates Styria and the Archduchy of Austria.

Among the passengers by the Avon steamer, from the West Indies, lately, was a negro physician, who visits England to submit to the goverment a plan, founded on scientific experiments, to supersede steam as a propelling power, but which will end in ——.