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Rail-Road News.

New Style of Railway Car.

Herapath's Journal furnishes the following description of a car of the kind used by the Great Northern Railway Company in England. If the material used, "teak-wood," has the qualities here imputed to it, for resisting the weather and can be kept polished and in good repair for a cost so much less than the painted carriage, it would be well for our car manufacturers to turn their attention to it. A saving likewise of some two hundred dollars on the first cost per car, is worthy of being taken into consideration :—

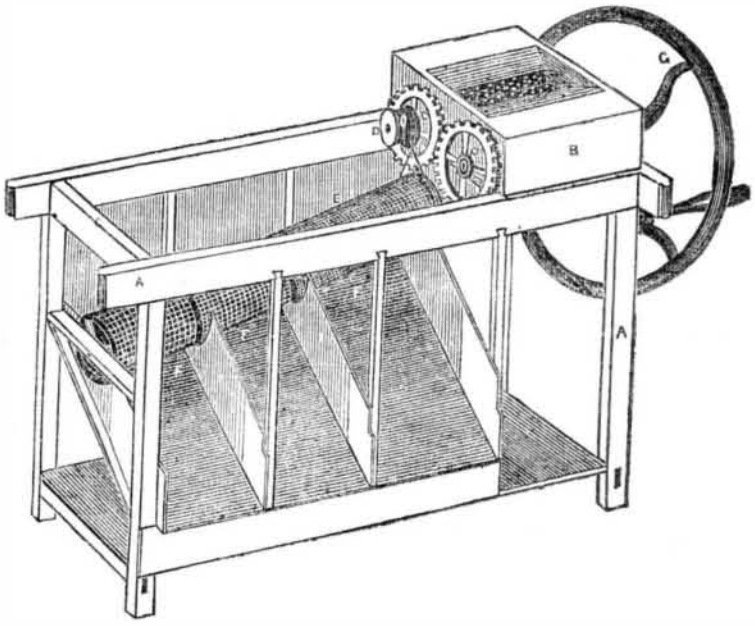
The carriages are most peculiar in their appearance. At first sight a stranger would hardly know what to make of them, whether they were in a perfectly finished state or not. But on a little closer inspection he would soon discover his mistake. They are made of an Indian wood called "teak." It is not painted, but well polished and varnished, so that the naturally fine grain of the wood is its ornament. The carriages, therefore, present very much the appearance of finely polished oak, instead of being handsomely and expensively painted. The advantages of this "peculiarity" are many, and it will beseen not unimportant. In the first place the "teak" wood is harder, stronger, more durable, and less susceptible to the expansions and contractions of heat and cold, and being also an oily wood, more impervious to wet than railway carriages made of the ordinary material. The next advantage is that when an injury, in the nature of a scratch or a chip, takes place, it can readily and at little expense be repaired. With the ordinary carriages there is often much expense incurred by having to repaint the whole carriage to repair a scratch. When the paint of one part becomes injured the whole must be painted. The "teak" carriages of course require nothing of the kind. There is no paint to spoil. A scratch is readily polished out, and a little varnish put over that part renders it like the rest. The last advantage of the use of the "teak" which we need name is that it costs—in the first or capital charge, something like £40 a carriage less. That is a saving of some amount. The merit of the introduction of this material for railway carriages is due to Mr. Williams, of Goswell street, the principal carriage builder for the Company. The carriages are very commodious—they afford more convenience and comfort than we generally find in railway carriages. They are higher—a man of six feet can stand up in them. There is a good ventilation at the top, without producing draft, an improvement of some importance to invalid travellers. Instead of pulling up the windows by means of bands, as in other carriages, they slide up and down at the touch of the finger, arising from the sash of the windows being nicely balanced by weights.

Cotton Trade of the City of Glasgow.

The first steam engine was erected in 1792; in 1793 the first power-looms were introduced from England, and in 1794, 40 looms were set up at a place called Milton; in 1831 there were 15,137 power-looms in the city, and at the present moment, 1850, there are 25,000, which average 625,000 yards of cloth per day.

There are 1,800,000 spindles running, and the cotton consumed amounts to 45,000,000 lbs., or 120,000 bales.

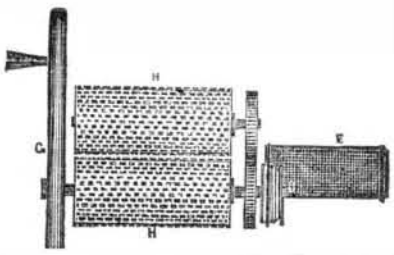
BATTIN'S COAL BREAKER.---Fig. 1.



We here present three views of what is termed "Battin's Coal Breaker." This is the machine which has caused no small amount of litigation in Pennsylvania, and is one about which no small amount of difficulty is experienced. The views which we here present are taken from a model, and we have had the patent during the past week to examine, and to give our opinion about its legality, both by those who believe it to be invalid and those who believe it to be good. Upon such considerations—those of both sides—we will endeavor to give an impartial opinion.

Figure 1 is a perspective view, figure 2 is a plan view, and fig. 3 an end view of the breaking rollers. The same letters refer to like parts. A is a frame constructed in any common way; B is the coal box, or hopper; C C are the cog wheels of the breaking rollers. The axle or shaft of one breaking roller, is the main driver, which, by the cog wheel, gives motion to the other roller; D is a large grooved pulley, from which a band, O, proceeds around a pulley on the screen, E, to rotate the said screen on its bearings, F F F, and screen the broken coal; H H are the breaking rollers—

Fig. 2.



they are formed with projections on their surfaces; these projections are of a tapering square form, and are cast or made on the circumference of the rollers with spaces between them, like the checks on a chess board; G is the fly or driving wheel, it drives the main axis, which gives motion to the whole machinery. A spout from below the rollers conveys the broken coal to the screen. The screen is placed like a set of bolters in a grist mill, and is operated in substantially the same manner.

The claim for this invention "is the arrangement of the teeth on the two rollers, substantially as herein described, so that in their rotation the teeth of one shall come opposite the spaces between the teeth of the other, with sufficient space between to hold lumps of the required size, the rollers being so combined by gearing as to make them rotate in opposite directions and with the required velocities, to retain the relative position of the teeth of the two rollers, as described."

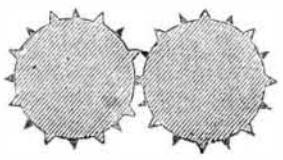
The first patent was granted unto Mr. Battin in October, 1843, then an additional improvement was patented in January, 1844. Afterwards these letters patent were surrendered, and a re-issue granted on the 4th of last September, 1849. The improvement was surrendered, but not re-issued, it was cancelled.

The claim of the first patent was—"the manner in which I have arranged and combined with each other the breaking rollers and the screen, the respective parts being formed and operated substantially as described." The improvement claim which has been cancelled was, "the addition of a smaller roller placed above the other two."

We have now given the three claims of Mr. Battin. The Pottsville Mining Journal of the 31st August contained the following article:

"The Coal-breaker suit is to come on again in October. Mr. Battin, finding his patent untenable, surrendered it and took out a new one entirely. Upon this new one he now brings suit against three firms in Tamaqua. Our Colliers should know the nature of the present claim, in order to guide their defence. He had three patents before, claiming the

Fig. 3.



combination of breaking rollers and revolving screens; but disclaiming the invention of toothed rollers, which he acknowledged to have been long in use for breaking up similar substances.

Now, his specification makes claim not to the combination, but to toothed rollers so arranged as to revolve in opposite directions with the teeth of one playing in the open spaces between the teeth of the other! This is in fact exactly what his *third* patent claimed before and could not maintain: except that he now omits the acknowledgment therein made of the antiquity of toothed rollers for breaking other frangible substances. We have only to say, that if a pair of rollers is intended to pass any thing through them, they must *necessarily* revolve in opposite directions; and if revolving vertically they are designed to break up any substance into lumps, it is equally a mechanical necessity that the teeth of one shall work into the interstices between the teeth of the other; else there would be no breaking up, for three-fourths of the lumps would pass through the ample continuous channels, untouched by the breaking points. There never was a pair of rollers fluted or pointed (the principle being the same in both) that could have been set or worked otherwise. And we conceive that the issuing of letters patent for the alleged novelty of so clear a mechanical necessity, is a disgrace to the patent office and a proof of either gross neglect or shameful incompetency.

We ask the opinion of our highly competent friends of the "Scientific American." And we would remind them that every body was willing to pay Mr. Battin handsomely, patent or no patent, and that they only resisted his claims because of exhorbitancy and the taxl-form and inquisitorial shape he persisted in giving to his collections."

The patent which we have examined, of last year, does not speak of any more than two previous ones: if there is a fourth we have not seen it. The Register is perfectly correct about the action of the rollers—they could not work otherwise and perform the same work; but then the question hinges on this point—"Could the teeth be arranged otherwise and perform as well?" Of course the revolving in opposite directions, and the equal motion of the two rollers, is all old and used in all crushing rollers, but that is not the point; it is the arrangement of the teeth in combination with the roller motion. For example—if the teeth of one met the teeth of the other, and acted like breaking scissor levers, then it could not be Mr. Battin's arrangement or invention; and if one roller had one half the teeth of the other, but revolved twice as fast, it could not be Mr. Battin's arrangement nor invention. Now the questions to be asked are these, and they are the test questions of every patent: "Is Mr. Battin the original inventor? were rollers such as he claims, employed two years before he made application for a patent? and, are they useful?"

We have had a good long search to discover whether the said rollers were in any mechanical work in our possession,—we could not find them. Having seen a great deal of machinery in our life, there is an impression on our mind that we have seen the like before, but where, and for what purpose, (although we think it was for breaking bones before grinding into dust,) we cannot positively say. We must give it as *our* opinion, then, that the claim is legal. To prove the legality of the claim, the question is one of fact, and there may be witnesses who have seen such rollers used before 1843; if so, the patent will be void,—if not, it will be sustained. If the only difficulty in Mr. Battin's way has been his too exhorbitant demands, we advise him to be moderate in this respect, it is the most profitable way in the end. His first patent claim, however, was a very poor one: it was tantamount to saying: "the rollers are old, and the screen is old, but they never were combined before," whereas the same combination is very old—that is, belt and pulley.

Balloon Snow Storm.

On Saturday afternoon before last, Joshua Pusey ascended with a balloon from Reading, Pennsylvania. He started at half-past four o'clock, and descended at Haddington, a few miles west of the Schuylkill river, about half-past seven. He says that during his voyage, and when at an altitude of two miles, he was overtaken in a snow storm, and, what was strange to him, and will be so to every body, was the fact that the snow flakes ascended.

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