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Contents.

(Illustrated articles are marked with an asterisk.)

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OUR NATIONAL TRIAL AND ITS RESULTS.

The four months beginning November 7th, 1876, and ending on the 4th of March, 1877, will long be remembered as a period not only of severe trial to our national institutions, but also to the material interests of the country.

We believe that the revival in business activity is one that is going to make itself rapidly felt. Material for manufacturing purposes is comparatively cheap, building can be much more inexpensively carried on necessities of life and wages are down, and altogether conditions are favorable for the undertaking by capitalists of enterprises contemplated, but long delayed, and for the investment of a vast amount of capital which hitherto has been closely guarded.

We are beginning to learn, moreover, that, after all, the hard times have not been destitute of good. As soon as the first effects of the blow had passed, manufacturers began to adjust their business to the new order of things.

On the other hand, during all the long period of depression, our exports have been steadily increasing. Fresh American meat, which bids fair to be the staple of a great foreign trade, is now sold throughout Great Britain at 16 cents and less per pound, or one quarter less than English meat.

We have before us a large number of reports from various sections of the country, all of the most encouraging nature. In New England, mill after mill is resuming full work in the iron trade of Pennsylvania, where the greatest stagnation has reigned, there are good signs of improving business; the shoe and leather merchants announce better sales; and altogether, look where we may, either the actual opening of augmented trade or good prospects of activity near at hand are clearly apparent.

THE ASHTABULA VERDICT.

The verdict of the coroner's jury, relative to the terrible accident at Ashtabula bridge, accords with the popular verdict reached some time ago. The substance of the finding, which is based on investigations conducted with great thoroughness and by a body of men well versed in the technical subjects laid before them, is: First, that the bridge fell because of its own inherent defects, and second, that the subsequent burning of the train was owing to neglect to comply with the Ohio State law which provides that railroad cars shall be so heated that the fires shall be extinguished if the cars leave the track.

nical subjects laid before them, is: First, that the bridge fell because of its own inherent defects, and second, that the subsequent burning of the train was owing to neglect to comply with the Ohio State law which provides that railroad cars shall be so heated that the fires shall be extinguished if the cars leave the track. This obviously places the whole responsibility on the shoulders of the railroad company; and it remains to be seen whether the fact of the latter's being a corporation is sufficient to shield it from the punishment deserved.

The bridge was unsafe, it appears, for eleven years. The man who designed it is dead, and the engineer in charge, who ought to have found out the defects, has perished by his own hand. Criticism of the direct agents is therefore silent. As regards the railroad company, the absence of the necessary precautions against fire can only be attributed to that spirit of parsimony which is altogether too prevalent among corporations when the question of using or not using the improved devices, which are constantly being invented, comes before them.

IRON FRONT BUILDINGS.

A fire recently occurred in this city in a magnificent-looking building, which left the edifice a total wreck and resulted in the destruction of over a million dollars' worth of property. The structure was quite lately built, and had an ornate iron front, which gave it an exterior appearance of stability and solidity of construction.

There has been a predilection for exactly this species of building in New York and other cities, of late years, because it affords a great deal of show for little money. We do not doubt but that excellent materials are used by excellent architects in their construction. The difficulty lies not so much in the structures themselves as in the law which permits their existence, for it is not to be expected that while a handsome building can be cheaply erected without infringement of law, and readily insured, landlords will subject themselves to any extra expense in the matter.

We would not make a sweeping condemnation of iron fronts in general, because we believe that they may serve an admirable purpose in spreading good architectural designs at moderate cost; but it is the poor and inadequate material behind these ornamental fronts, which their beauty conceals and renders deceptive, which we condemn.

THE THEORIES OF LIGHT.

Among the generally received theories of light, there are only two which possess any degree of probability: the corpuscular theory of Newton and the undulatory theory of Huyghens. The idea of the ancients that, in seeing, something goes out of the eye to the object seen, and the theory of Euler (who, by the way, was blind) that we see by induction, and that visibility is transmitted without the necessity of any intervening medium, in the same way as gravitation, are so imaginary and so thoroughly disproved by facts that they do not deserve any consideration.

Newton's theory, as is well known, consists in the assumption...