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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. the new start is taken under better auspices than have obtained for many a year.

We believe that the revival in business activity is one that be much more inexpensively carried on necessaries 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.

to adjust their business to the new order of things. Cot-solidity of construction. ton fell in value, and old stocks were, as already noted, have hitherto imported.

On the other hand, during all the long period of depresrequired by England to eke out her home supply, we furnish. garin oil are two new experimental additions recently made 884,000.

sections of the country, all of the most encouraging nature. the burning goods, increase the conflagration, while the plates In New England, mill after mill is resuming full work · in on the front curl up like shavings. the iron trade of Pennsylvania, where the greatest stagnation gether, look where we may, either the actual opening of augmented trade or good prospects of activity near at hand large business to our glass works, and has caused the produc- stantial structure is accomplished. tion of a variety of glass which hitherto we have imported almost wholly from Europe. In fine, we have passed through the fire, not unscathed, it is true, but strengthened and energy of our people may be relied upon to render its years those of plenty, prosperity, and peace.

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 the time indicated expires, to insure a continuity of numbers, 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. It is the same spirit which causes steamship companies to send vessels to sea without proper lifebut also to the material interests of the country. The saving apparatus—the same that begrudges the room in pubcrisis has been passed, and there can be no question but that lie buildings necessary for the construction of broad and ample staircases and other ready means of escape in time of danger. It is a peculiar phase of human nature, doubtless, that prevents the necessary outlay for such purposes; and is going to make itself rapidly felt. Material for manu- people will keep on in the same course as long as they think facturing purposes is comparatively cheap, building can they make money by thus saving, which is questionable policy when life is at stake.

IRON FRONT BUILDINGS.

A fire recently occurred in this city in a magnificent-looking building, which left the edifice a total wreck and resulted We are beginning to learn, moreover, that, after all, the in the destruction of over a million dollars' worth of property. hard times have not been destitute of good. As soon as The structure was quite lately built, and had an ornate iron the first effects of the blow had passed, manufacturers began front, which gave it an exterior appearance of stability and

There has been a predilection for exactly this species of cleared out under enforced liquidation. Meanwhile in building in New York and other cities, of late years, because the production of cotton goods we made numerous valu- it affords a great deal of show for little money. We do not able improvements, and all this tended toward render- doubt but that excellent materials are used by excellent aring us consumers of fabrics produced at home, rather chitects in their construction. The difficulty lies not so much than purchasers from England, as we had been to a large extent before. The same is true, though in smaller ratio, of existence, for it is not to be expected that while a handsome woolen and worsted goods. The decline in our imports | building can be cheaply erected without infringement of law, from England during the five years from 1871 to 1876 is and readily insured, landlords will subject themselves to any shown in the following figures: Cotton goods from 129,700,- extra expense in the matter. The question is one for the 000 yards to 55,000,000 yards, woolens from 5,391,000 yards legislators, and it certainly seems to us that either laws forto 1,478,000 yards, and worsted from 86,682,000 yards to bidding the construction of any but really fireproof build-41,079,000 yards. Not only, however, is the market here for ings in cities should be enacted, or else that existing statutes English fabrics substantially lost, but our manufacturers are should be so modified as to prevent the erection of edifices entering into competition with British producers on their which are so easily burned as the kind to which we have reown soil. We have already a considerable trade in Man- ference. We can recall over a dozen structures even larger chester (the home of English cotton weaving) in cotton calico | than the one now destroyed, the progress of construction of cloths. Our cotton mills have large South American orders which we have watched with apprehension lest they might on hand; and it is well known that we are now making tumble before completed. We have seen the thinnest brick worsted goods of better quality than the foreign fabrics we walls erected to support a wilderness of wooden beams and partitions, the whole run up so quickly that the structures, before the façades were in place, reminded one of gigantic sion, our exports have been steadily increasing. Fresh birdcages. Then the ornate cast iron fronts were added, bit by American meat, which bids fair to be the staple of a great bit; and in an incredibly short space of time the birdcages were foreign trade, is now sold throughout Great Britain at 16 hidden, and elegant architectural creations, with richly decocents and less per pound, or one quarter less than English rated columns and ornamental window caps and cornices, meat. More than forty-four per cent of the foreign wheat and finally dazzling with gilding and paint in many colors, presented themselves to the admiration of all who did not The shipment abroad of American lobsters and oleo-mar- know how frail was the backing of these gaudy exteriors. To make matters worse, there is a mistaken, though none to our export list, both of which are promising. Our butter the less prevalent, idea that an iron building is necessarily and cheese exports are exceedingly large and still growing. fireproof. An edifice wholly of iron of course would not In brief, and without entering into further detail, our export burn; but we doubt if even such a structure would maintain trade (we quote figures obtained by the New York Sun, and its integrity long with a fire among combustible materials, embodied in a very carefully prepared article) for December, like cotton and other fabrics common in our drygoods stores, 1876, was by far larger than ever was known in one month, on one of its floors; and this for the reason that iron speedily and the lessons of thrift and frugality which the business expands and warps with the heat. But buildings wholly of stringency has enforced are known by their fruits in the iron are few; and what is generally understood by an iron statement that the exports of 1876 exceeded those of 1872 by building in these days is one with cast iron front and iron \$171,000,000, while the excess of exports over imports for columns supporting wooden beams inside. The beams and 1874, 1875, and 1876 amounts to the grand showing of \$314,- the contents of the structure burn readily; and the iron columns, as soon as they are heated, bend out of shape, and re-We have before us a large number of reports from various lease the wooden beams, which tumble in a mass and, with

We would not make a sweeping condemnation of iron has reigned, there are good signs of improving business; the fronts in general, because we believe that they may serve an shoe and leather merchants announce better sales; and alto- 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 are clearly apparent. Even the blue glass mania has con- and renders deceptive, which we condemn. Back an iron tributed its share to the general revival, as it has brought front with good and well laid brick and stone, and a sub-

uses as free extinguisher. The protocol of the second of the second seco

menna found in Cast Steel, -Hexagonal Columns of Clay and Sand.
V. MEDICINE, PHYSIOLOGY, HYGIENE, ETC. -The Controversy on Spontaneous Generation. -Physiological Properties of Hydrobromic Ether. - Vaso-motor Nerves of Striated Muscle. -Influence of Hydrobromic Ether. - Vaso-motor Nerves of Striated Muscle. -Influence of Hydrobromic Variations of Blood Globules in certain diseases. - Vegetable Digestion. -Course of Sapin Plants. A Combat with an Infected Atmosphere: being a recent lecture de-livered at the Royal Institution, by Professor JoHN TYNDALL most interesting and valuable contribution.

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THE ASHTABULA VERDICT.

which is based on investigations conducted with great they do not deserve any consideration.

----THE THEORIES OF LIGHT.

Among the generally received theories of light, there are chastened. The future opens hopefully. The characteristic 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 induc-

The verdict of the coroner's jury, relative to the terrible tion, and that visibility is transmitted without the necessity accident at Ashtabula bridge, accords with the popular ver- of any intervening medium, in the same way as gravitation, dict reached some time ago. The substance of the finding, are so imaginary and so thoroughly disproved by facts that

thoroughness and by a body of men well versed in the tech- Newton's theory, as is well known, consists in the assump-