Scientific

MUNN & COMPANY, Editors and Proprietors.

PUBLISHED WEEKLY AT NO. 37 PARK ROW (PARK BUILDING), NEW YORK.

O. D. MUNN. S. H. WALES. A. E. BEACH.

"The American News Company," Agents, 121 Nassau street, New York Messrs. Sampson Low, Son & Co., Booksellers, 47 Ludgate Hill, London, England, are the Agents to receive European subscriptions or advertisements for the Scientifition American. Orders sent to them will be promptly attend-Messrs. Trubner & Co., 60 Paternoster Row London, are also Agents for the Scientific American.

VOL. XVII., No. 6....[New Series.] Twenty-first Year.

NEW YORK, SATURDAY, AUGUST 10, 1867.

Contents: ...

(Illustrated articles ar	e marked with an asterisk.)
*Lunkenheimer's Tallow Luhri-	81 Manufacturing, Mining, and Rail- road Items
A Novel Propeller	81 Extension Notices
American Machines at the Paris	Patents 87
*What Are the Tails of Comets	81 Answers to Correspondents
Made Of?	82 *Improvements in Cultivators 88
Great Guns and Breech-loading	French Photographs 8
Fire-arms	83 Aerial Navigation
*Improved Device for Regulating	83 Boiler Burst While Being tested 85 * Bellerjeau's Lamp Chimney 85
Funnel Drafts	84 The Society of Arts' Albert Medal. 8
*Improved Swage for Saw Teeth	84 New Use for the Barometer 8
American Oils at the Paris Exposi-	84 Petroleum as a Fuel for Locomo-
	tives
*Weber's Safety Pocketbook	85 Discomforts of Railroad Traveling. 8
"Running Down" the Dunderberg	85 The Commissioner of Patents—His
To Prevent the havages of Bolt	Incompetency and Mismanage- ment
The Mechanical Question	85 The Nuis nce of Steam Whistles 8
Siberian Marmots	85 The Silver Palace Cars 8
	85 Greenwich Time
An Invention Wanted	86 nyenrions Patented in England by
Value of Advertising-Its Import-	Americans 91, 92, 93, 98
ance, and How to Do It	86 Patent Claims
Editorial Summary	201

BRIDGING OF NAVIGABLE RIVERS.

Whether railroads are hereafter to monopolize all the carrying trade of the country—the internal traffic—or not, is a question of some importance in view of the awful experience the country has already had by such disasters as the Norwalk accident, well remembered by our readers, and the attempt recently made in the Connecticut legislature to impair if not destroy the value of the Connecticut river as a navigable stream. We are glad to say that this attempt was unsuccess ful.

There is no doubt that navigable rivers, as well as lakes and oceans, are the natural highways for the commerce of the nations. To shut up or impair these highways, unless some cheaper and more valuable highway is thus opened, is suicidal on the part of any people. For freight particularly, water carriage has been so far, and is now, the cheapest and most convenient, if not the most rapid; and that policy which would close or obstruct such a natural highway must be either short-sighted or selfish. The state of Connecticut and the city of Hartford, at the head of navigation on the Connecticut, have spent and are spending thousands yearly to improve the navigable facilities of the river, by the removal of bars, etc., yet it is proposed to hamper navigation for fifty miles from the sea on this river, by the erection of bridges, leaving only a narrow draw for the passage of steamers and other craft at points of the most difficult character.

When bridges can be made to span rivers at such a hight as to leave the stream clear at all stages of its surface for vessels to pass unobstructed under them no reasonable man can object, but when it is proposed to construct piers in the bed of a river which shall be nuclei for the accumulation of silt, thus forming dangerous shoals, and compel the navigator to stear his craft between the Charvbdis on one side and the Scylla on the other through a contracted draw, endangering not only his vessel and cargo, but also the trains of cars for which the bridge was erected, it seems as though engineering talent was fallen to a low ebb. if some better device could not be adopted. Where an elevated bridge cannot be built, and a ferry is not admissable, one would suppose that a tunnel in most cases would be feasible. Certainly, before it was determined upon that a bitherto navigable river should be obstructed for the benefit of a railroad, it would appear proper to consult the possibilities of engineering science to prevent a public damage for the benefit of a chartered corpo-

DISCOMFORTS OF RAILROAD TRAVELING.

Viewed in the light of common sense and the advan made in the mechanic arts as applied to common life, it seems strange that our people should be subjected to so much an- Commissioner to appoint four Principal, four First Assistant, noyance in their peregrinations from place to place by the and four Second Assistant Examiners, in addition to the old much vaunted and boasted steam cars; which according to force of the office. Not one of these appointments has been some enthusiastic writers really annihilate space and neutral made up to the date of writing. On the contrary the old lize time. We have already spoken of the outrageously care-force is not full and never has been since this Commissioner less manner in which the impedimenta of travelers are handled; the destruction of trunks by the rough handling of baggage men on our lines of travel is fearful.

But the unnecessary annoyances to which the traveler must submit calls for the severest reprimand. A short time since we had occasion to travel from Boston, on the Fall River and Newport line, a distance of less than thirty miles. The trip occupied over two hours, and although the day was insufferably hot, not a drop of water could be had, and none of the cars on the train were furnished with closets. A portion of the time occupied by the trip was spent at a way station waiting for a train, and we found it difficult to ascertain when the train was to start, as no one about the station seemed to posess either authority or information. In one room of the building was a stone jar in the form of a barrel,

with a faucet apparently for holding water, but it was empty and so remained until the station master, after being importuned repeatedly sent a lounger after a pail of water.

It is somewhat remarkable that in a railway station one can find the running time of every railroad on the continent, except that of the very one to which the station belongs, and it is no less worthy of note that in no case is the amount of fare given on these gilded, framed, and bedizened posters. It is sometimes a matter of as much importance to the traveler to know the price as the time of a trip. Of course no one who has had any experience in traveling-American traveling-would ask a question of a ticket seller or other official, at least if he finds it difficult to pocket an affront or insult.

Another annoyance is the habit of keeping the ticket office closed until within a minute or two of the starting of the train, thus giving opportunities to pickpockets, who always delight in a crowd. On some railroads the car doors are kept locked, while the train stands on the track, until just on the point of leaving, and old persons, weak women, and tired children are compelled to stand on an open platform or be jammed in a mis-named sitting room, and afterward forced to ioin in a rush for seats just before the starting of the train.

In the construction or rather fitting of our cars, also, there is room for much improvement. The unavoidable noise of such heavy bodies as loaded cars passing over rigid iron rails, is hard enough to bear, but the ear-splitting rattling of the windows and the explosive slamming of doors could easily be avoided by simple mechanical contrivances. A slip of elastic rubber in the channel of the window sash and the jamb of the door would effectually prevent the incessant and annoying rattle-bang of our railroad cars.

Certainly something should be done to protect the traveling public from annoyances which form no part of the necessary discomforts of railway passage. The resources of mechanical ingenuity can easily provide a remedy for some of them, and common courtesy and sense on the part of railway officials and employés can prevent the rest.

THE COMMISIONER OF PATENTS---HIS INCOMPETENCY AND MISMANAGEMENT

We have called the attention of our readers from time to time to the mismanagement of the Patent Office by the presin arrears six months, more or less, and thousands of inventors are delayed month after month in their business.

The only excuse which the Commissioner renders for this extraordinary state of affairs is that he has no room in the Patent Office to accommodate the additional force required to

There is no truth nor force in this miserable attempt of the Commissioner to palliate his own incompetency. There is room in the office to accommodate more than twenty additional Examiners, and by simply filling all the rooms, as room No. 18 is filled, the office would accommodate thirty-two more Examiners-an additional force capable of examining at least twenty thousand cases a year more than are now examined.

In Room No. 7, the large class of Textile, Fabrics, and Sewing Machines is under the sole care of one man, and he a Second Assistant Examiner only. This state of affairs has existed since the first day of June, and no effort whatever has been made to apply a remedy. Of course the class is going behind every day-no one man can do its work. Now why does not the Commissioner promote this able Second Assistant to full Examiner and give him all the force he needs? Why keep him in a subordinate capacity doing a full Examiner's work, and yet in a large room alone? His room will easily accommodate three more assistants—he is begging for help—the Commissioner knows all these things, and yet tells us that he is compelled to let the work accumulate for lack of room!

In the class of Lumber ,the examining force consists of one principal Examiner and one First Assistant. There is space in this room for at least two more persons, and the Commissioner has been repeatedly asked to furnish more help, but with no results. The class of Fine Arts and Designs, is in the same situation. So, too, is Civil Engineering; and the same state of facts exists in at least five other rooms in the Patent Office. Desks are standing vacant and have been for months. and the principal Examiners in the rooms have begged the Commissioner to fill them, yet they are vacant to day.

Nothing but the most gross incompetency can be conceived as a reason for such a state of affairs. Want of room need not embarrass any one but the incompetent man at the head of the Patent Office. If he had half the qualifications for his place that some of his temporary clerks have, the business of the office would not have been a week behind at this day

Only last March, Congress passed a law authorizing the was appointed! There are now eleven vacancies; or about one quarter of the places are not filled! What excuse, we ask, can be alleged for such conduct? Why is it that for months one quarter of the old force has been missing, and every one of the twelve new places has remained empty?— "Want of room?" There are and have been empty places in Gregory's room for three more persons; in Peale's room for three more; in James' room for two; in Dean's for two; in Taylor's for two; and in Bebbs', Shoepff's, Fales', Barnett's, Crawford's, Jayne's, Blanchard's, and Conolly's, for at least one each, We say again that the flimsy excuse of want of room is not true, and no one knows it better than the Commissioner

The excuse used to be that there was not force enough, but

he had full power to appoint and plenty of money to pay, as many temporary clerks as he desired. A temporary clerk in each Examiner's room would have enabled the Examiner to act upon at least two cases per day more than he could do without such a clerk. The appointment of a suitable number of temporary clerks would thus have enabled the office to act upon nine thousand six hundred cases a year more than it could actupon without them, and at an expense of \$4,400 a year less than it will now cost to pay the additional force provided for by the Act of Congress of March last. If the Commissioner had appointed these temporary clerks a year and a-half ago the office would have been up with its work to day, and there would be no need of this great increase of permanent officials at high salaries.

We ask the President and the Secretary of the Interior to apply a remedy at once to this state of affairs. It is a burning disgrace to the country that a Bureau in which such vast interests are at stake should be in the hands of a person who cannot administer it better than the Patent Office is now administered.

THE NUISANCE OF STEAM WHISTLES.

A correspondent writes asking if the inventive talent of the country cannot be directed to some means to abate the dreadful nuisance of the screeching, screaming whistles now so universally used by locomotives, steamers, and manufactories. He says he lives in a village contiguous to the city of Lynn, Mass., on the line of a railroad, and at all hours of the day and night his ears are tormented with the unearthly noises of the execrable steam whistle. These noises are hideous to one of a nervous temperament, absolutely injurious to the sick, and hardly tolerable to the healthiest and most robust. He says that while in Great Britain he often stopped in the hotels attached to the railroad stations, at Malvern, Chester, York and other places and can recollect no such annoyance from this source as is here felt every day. The whistles used there, although of a shriller tone, have less volume of sound than ours, and do not exert that ear-splitting quality which seems to be inseparable from ours.

We sympathise with our correspondent, but know that there is a remedy. It may be that as a peeple we are less sensitive in respect to noise than some others but it is certain ent Commissioner by which the work has been suffered to fall that the nervous, the feeble, the sick, are greatly annoyed by the nuisance of that most horrible of inventions-excepting perhaps that of the Chineese gong-the steam whistle. Speaking of the gong, it is simply a matter of astonishment that our hotel keepers, throughout the country could ever have been induced to adopt this barbarous instrument with its infernal clangor and make it a part of their entertainment for the wearied and exhausted traveller.

> In one of our most popular evening papers, a short time since, we noticed a protest against the discord of howling screeches which from numerous manufactories salute the ear several times a day, to denote the periods of commencing and leaving work, which suggested that one would be a sufficient horror for a whole neighborhood.

It certainly seems as though there could be no adequate reason for every concern in a town or city to possess its own independent whistle, and run its own independent time, so that the agony, instead of being over in two or three minutes should be prolonged for fifteen or twenty minutes. If one whistle is sufficient for a neighborhood why should ten or twenty seek to rival it?

But a whistle can be made, which, while more far-reaching than the sharpest, will scarcely annoy the most nervous. In Connecticut there is manufactured a modification of the steam whistle called the "steam gong" which gives a deep hollow sound, not at all unpleasant, nor jarring to the nerves. It has two instead of one bell, and each is deeper than that of the ordinary whistle, one being placed directly over the other and the steam emitted downward and upward from a disk placed midway between the two. One on Colt's Factory at Hartford could be heard heard in Middletown a distance of twelve miles, and yet was not unpleasant to the ear when in its immediate vicinity. Such a device would probably save the sensibilities of the sick and be more agreeable to the well, while it would fulfill all the objects of the present screaming nuisance. Possibly Tennyson puts it rather strongly when he says:

There is no joy but calm, but it must be confessed, that noise in itself, is not particularly agreeable except to boys and roughs.

THE SILVER PALACE CARS.

The three direct connecting railroad companies between New York and Chicago—the New Jersey Central, the Pennsylvania Central, and the Pittsburgh, Fort Wayne, and Chicago-have lately placed upon the route a new and magnificent set of passenger coaches called the Silver Palace Cars. The inauguration of these new vehicles took place on the 22d ult., and we are indebted to Mr. Jonah Woodruff, Superintendents Stearns, Williams, and McCullough, for an invitation for the excursion to Chicago and back. In about thirtysix hours after leaving Jersey City, the terminus at Chicago was reached, where the excursionists, consisting of about two hundred and fifty ladies and gentlemen, were entertained in the most superb manner. In fact, throughout the whole journey the most ample provision was made for the comfort of the guests, and all enjoyed themselves highly.

The traveler from New York to the West, may now enter the Silver Palace Cars at Jersey City, and ride for almost a thousand miles-to Chicago-without any change. By day the cars present the ordinary appearance, except that they are much more richly furnished and are provided with more the Commissioner never kept his force filled up, and besides abundant facilities for comfort, such as lounges and state