# Scientific Ammeriam． 

THE ADVOCATE OF INDUSTRY，AND JOURNAL OF SCIENTIFIC，MECHANICAL AND OTHER IMPROVEMENTSS．

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 principal eities and towns in the United states．


## IRnill finuid Jraw

Cheap Rallwwy Fares in England．
The London and Northwestern railway company are carrying out some＂extensive experiments＂in the way of a reduction of fares，with a view of testing the productivness of the local traffc．．Hitherto the price of day tickets，for certain distances，has been one－ third less than two fares，a further reduction upon which，to the extent of one－sixth has been made．The Midland Company Lave also reduced their fares，and have assimilated them to，and have adopted，the scale on the Great Northern Railway．The great problen of the age with regard to the profit of railway invest－ ments，is to determine what rate of fare will secure the largest revenue．It has been de－ monstrated，that on the English railways four fifths of the gross revenue comes from＇passen－ gers at one penny or two cents per mile，and that，invariably，the number of passengers has fallen off，and the receipts have decreased whenever the rates have been raised．The commission formed by the British Parliament to inquire upon this and other pertinent sub－ jects，reported a mass of evidence in favor of low fares that no reasonable man could resist， and some of the English companies propose to give the low fare system 2 trial upon the most radical scale．We are rather fearful they may not persevere for the length of time necessary to give the system a fair trial．The proper mean is the thing to be arrived at．

## New York and Erie Rallioad．

 The Euffalo Courier says－＂We are inform－ ed by Mr．C．Story，who last winter ably represented，in part，the county of Dutchess， in the Assembly，and who is now doing some of the heaviest，if not the heaviest work on the Erie Railroad，that the entire balance of the line，from Corning to Dunkirk，will be finished and in complete running order，on the first day of May；1851．Mr．Story＇s contraet covers the most formidable work to be done．It is twelve miles in length．He is now working one thousand men，daily，and is about to put on five hundred more．Every section is under contract，and is being prosecuted with the ut－ most vigor．Another season will therefore witness the effect which this，route will have uponwest．

It has been announced that MII．Sellers，of Cincinnati，has been appointed Méchanical Engineer of the Panama railroad，to reside in this city．The company propose to complete the work to Gorgona by June，1851，and the whole in two years．The road will be first laid to Chagres on pile，to be filled with the excavations on the line．The rail is to be made of wood found along the line，so hard that it is difficult to work it by commion tools．

The passage of the Texas Bill，giving her ten millions，will enable her to pay off nearly hier whole debt．We hope her citizeoss will
then invest considerable in plantk，or railroads．

SWEET＇S PATENT EXCAVATING SCRAPER．


This scraper is the invention of Mr．Joseph celayey soils．This excavator can be used in weet，of Hughesville，Lycoming Co．，Pa．，who all soils，and it is particularly adapted to has a patent for the improvement．The dis－ tinguishing feature of this invention is the in－ troduction of moveable teeth on a circular sur－ face，the teeth being in condition and number adapted to the condition of the soil in which the excavator is used．The sides of it may be made of wood or metal as represented by A A． B B are the stilte or arms，C is the moverble mouth piece with the teeth D ．The teeth on the mouth piece of the excavator，are broad and flat in front，capable of plowing up in gravelly soil ：the teeth，$F$ ，in the detached mouth piece $E$ ，are narrower at the extremi－ ties and are adapted to excavating in atiff and bviate entirely the use of a plow in stiff soils． It is useful in making roads，for levelling，dig－ ging ditohes，canals，cellars，railroads，and other kinds of excavations．It is made strong and durable，and the price of one we believe is $\$ 8$ ．We have seen some strong testimo－ aials renpecting its good qualities，given by hose who have used it．
This scraper has just been awarded a diplo－ a at the State Fair．Remember that it s an Excavating Scraper，with moveable teeth．
More infor：nation may be obtained by letter eddressed to Mr．Swe et．

EVERETT＇S WOODEN BOWL TURNING MACHINE．


This is an improved machine for turning handle，$K$ ，at rightangles with the direction of wooden bowls．It is censtructed to alter the the movable bottom；$D$ is a reciprocating shape or thickness，and it will turn seventy frame turning on a pivot，which is connected feet of bowls per hour．It is easily kept in with the semi－circular frame，C ；it is meved order，and its simplicity is one of its pecutiar by the large crank handle in front，the shaft traits．The bowle made by it are wonderfully of which has a pinion on it，which takes into smooth and perfect in form．
$A$ in cog rack on the underside．The cutter arms， A is part of the frame；$B$ is a moveable $E$ ，are attached to this frame；in the said

cutting the outside of the block is also attach－ od to this frame．H is the stock，in which a plane iron is placed for shaping the bottom of the bowl．G is a driving pully of the spindle． The flat part of the bleck，which forms the top of the bowl，is first furned off by the cutter， $M$ ，which is moved upand down by arack and pinion，$Q$ ，operated by the crank handle， $\mathbf{N}$ ；the frame，$D$ ，is then adjusted to the block by the acrews，$K$ and J，（turned letter，）and the out－ side of the block is ahaped by the cutting ap－ paratus，H，the cutter of which is brought against the block by a screw ；the cutter arm， E ，with its outter，is then placed in the frame， D，and by turning the large handle in front， the cutters are pushed into the centre，forming the bowl，which is then taken off，and another， a size less，is placed upon the reciprocating frame，and another bowl taken off，and then another，till the block is used up．
The inventor of this machine is Mr．Addison Everett，of Middlefield，Mass．，who secured a patent for the same on the 30th of last July． He has spent several years in bringing it to its present state of perfection，and encountered many difficulties，like all original inventors． After his machine was in operation as a fixed fact，though not absandoned to the public，an inferior machine was got up and patented by one of his neighbors，which proved to be some obstacle to Mr．Everett＇s success，who wisely purchased the whole right，and is now the pro－ prietor of his own patent as well as assignee of the other．The invention is well secured against all infringement．This machine will supersede the tedious process of hand forming， and it saves about one－third of the timber；the howls are smooth and not liable to split；hard or soft wood can be used．The bowls can be made half an inch thick，or any thickness re－ quired，and as the demand for wooden bowla in every part of the world is almost unlimit－ ed，the use of Mr．Everertt＇s machines will form a proftable item in the statistics of our ooun． try．

## Caspial I Interints．

## Gravity．

A heavy body falls through 15,0954 foet in ones cond in the latitude of London，in a va－ cuum at rhe level of the sea；the double of this quantity，or 30.1908 feet，is the measure of gravity at that place．At Paris，under the like circumstances，the fall of a heavy body is 4.90434 metres，or 16.0906 imp ．feet ；and the measure of gravity 9.80867 metres，or 32 ． 1812 imp ．feet．

The spaces described in different times by a falling body；are to each other as the square of the times from the beginning of the descent or，which produces the same result，they are as the squares of the velecities acquitred at the end of those
Gravity and ar
Gravity and ary weight are not always interchangeable tertos－gravity being a，power of which weight is the effect．

To find the Tonnage of Ships．
Rule 1．Multiply the length of the keel， taken within the vessel，by the length of the midship beam，taken also within，from plank to plank，and that product by half the breadth， taken as the depth；then divide the last pro－ duct by 94 ，and the quotient will give the tonnage．If the length of a ship＇s keel be 80 feet，and the midship beam $30:$ required the tonnage，－Ans． 385.9787 tons．
We have a number of communications awaiting attention．Owing to the extent of our index，the best we have ever got up，some communications are laid over until another period：

