

Fair. The machine is exhibited by M. J. Bujac, 17 Broad street, New York.

In the sewing machine alcove there is little that is new. An automatic bobbin winder, shown by Pratt, Palmer & Co., 384 Broome street, New York, is a neat device and does its work in a very complete manner. It is much noticed by the lady visitors to the Fair.

Leyburn's motive power for sewing machines also attracts much attention. This motive power, which may be attached to any of the machines, enables a rocking motion of the upper part of the body to be substituted for that of the lower extremities at the will of the operator. This motor accords entirely with suggestions editorially made in this journal June 12, 1869, and we believe it to be a good and health-saving device. Exhibited by Ed. J. Leyburn, 119 Fourth avenue, New York.

The Carpenter Sewing Machine Needle Company, 95 and 97 Liberty street, New York, exhibit the self-setting and self-threading sewing-machine needle illustrated, and described on page 164, current volume, which is attracting much attention, and eliciting much commendation from the experts who pass among these machines in search of novelties. Specimens of its work show that the needle is strong as well as convenient.

The Carpenter self-heating fluting machine is an invention of the same lady to whose genius the self-threading needle is due. The fluting rollers are heated by the conduction of heat through arbors, upon which they work, the heat being supplied by a gas jet. It is an ingenious and pretty little machine.

A neat little model of a horse-stall, described and illustrated on page 279, last volume, of the SCIENTIFIC AMERICAN, will also be found worth looking at. It is shown by William Bleakley, of Verplanck, New York.

We also noticed a railroad candle and burner invented and exhibited by Henry Ryder, of New Bedford, Mass., which seems to remove the defects existing in the lights now commonly used. The candle has two self-snuffing wicks, and the draft is very much improved. The light given by this apparatus is much superior to that usually supplied in railway cars.

WHAT A CONTRAST.

We call attention to the letter of the veteran inventor, Pella Manny of Freeport, Ill., published elsewhere, and from which it appears that Mr. Manny has not only gained a competence as the just reward of his patent ingenuity; but like the venerable Rip Van Winkle "he is thankful that he has had enough." What a beautiful picture is here presented! An inventor retiring upon his well earned honors and emoluments, to engage in the healthful and primitive occupation of a vine-dresser. In reading this complaisant note of Mr. Manny, we could not fail to notice his magnanimity in contrast with some other greedy patentees, who, having got rich out of their patents by the full enjoyment of all the protection afforded by the law, are still clamorous for more, and misdemean themselves by lobbying around the halls of Congress, coaxing members to favor their schemes of patent extension over luscious Chesapeake Bay ducks, and sparkling Jersey champaign. We can scarcely realize so much self-abnegation as Mr. Manny displays; but it is a green spot in the desert of human selfishness.

Trial of the United States Chemical Fire Engine.

This machine, which employs a solution of sulphite of soda, instead of pure water, for extinguishing fires, was publicly tested on the 4th inst., in this city on a vacant lot situated between 3rd and 4th avenues, just above 67th street. Two two-story buildings were erected, and in each were placed a large number of tar barrels. The floors and other parts of the building were drenched with gasoline in such a manner that when the buildings were fired the flames rose to a great height, and the heat was intense. One of the structures was played upon in small streams by the sulphite of soda solution, and the other by water, pure and simple, to test the relative merits of the two systems.

The result, however, was not so satisfactory as could be desired. The frames of the buildings were too weak to sustain them after they had been slightly damaged by the flames, and each fell into a heap of ruins very shortly after the fire became general. It was evident that the sulphite of soda solution is an agent of great power in extinguishing fire, and we opine that should the experiment be repeated with buildings of stronger frames, the test would prove much more satisfactory. The sulphite of soda, when it comes in contact with the burning surfaces, is decomposed, yielding sulphurous acid gas, in which no flame can live. At the same time the effect of this gas upon the firemen, who may at times inhale it, is not so much to be dreaded as that of carbonic acid gas, which has been used in aqueous solution for the same purpose. We trust the experiment may be repeated under more favorable circumstances.

IT PAYS TO ADVERTISE.—Messrs. Wetherby, Rugg & Richardson, of Worcester, Mass., manufacturers of Woodworth's planers and wood-working machinery, in a recent letter to us say: "You will please continue our advertisement until orders to the contrary are received, and send your bill for settlement as heretofore. We cannot do without your paper as a medium between ourselves and our customers."

THE GIANT COUPLING.—It was intended to be stated in our notice of this unique and very useful invention, illustrated on page 207, that George Place & Co., 126 Chambers st., New York city, Miles Greenwood, of Cincinnati, and the Howard Iron Works, Buffalo, N. Y., were also agents for the sale of the coupling.

[Our Special Correspondence.] LETTERS FROM THE SOUTH, ETC.

New Orleans, its Sewerage and Water-Works—Cotton, Cotton Factories, Cotton-Seed-Oil Mills—New Orleans as a Manufacturing Place and as Commercial Center—Ice Making and Pneumatic Car—Salt and Sulphur deposits—Sugar Crop—Railroads.

MOBILE, ALA., Sept. 17, 1870.

Instead of being to-day two or three hundred miles west of New Orleans, and in the limits of the Empire of Texas, I am that distance east—yellow fever panic is the cause thereof. The first idea that occurred to me on looking around New Orleans was why some shrewd person did not contrive a way of cleaning and sewerage the streets. The city is as level as a floor, and all the sewerage runs in open gutters along the streets. Garbage is, however, not allowed to be thrown in the streets.

The city is supplied with water from the river, pumped up into a large reservoir, thence flowing into pipes. Being built on entirely made ground, and located in the bend of the river, a slight incline is had from one side to the other, thus keeping up a current in the side ditches.

From Memphis I came through the length of the great cotton State, Mississippi. The railroad, one of the best in the South, goes through a rather poor section, but there are along its route many thriving villages. One little place, consisting of a depot, half a dozen stores, and a few dwellings, sends off 20,000 bales of cotton per year. The exclusive growth of cotton is the curse of the State.

J. L. Power, Esq., of the Agricultural Association, hopes to infuse some new ideas and new life into the people, and if example can do anything he may succeed. It is hard to make Mississippians believe that there is any crop but cotton worth growing. There are two cotton factories in the State, one at Columbus, the other at Wesson, on the Great Northern Railroad. The last is the largest, and runs about 4,000 spindles. Steam power is used, and wood for fuel.

At Vicksburg there are three cotton-seed-oil mills, which made last year about 160,000 gallons of oil, and about 4,000 tons of cake. The owners claim that the business is overdone; that at present the supply is greater than the demand. My opinion is that as the price goes down, new uses will be found for it. The various mills I have visited pay from \$6 to \$12 a ton for seed. A ton of seed yields 1,000 pounds of kernel, this 750 pounds of cake, from 35 to 40 gallons of oil, and 40 to 50 pounds of lint. This is of course a rough estimate, but nearly, and in some cases, perfectly accurate.

In New Orleans there are five mills. The largest, the "Orleans," does not hull its seed, hence it makes from a ton about 1,500 pounds of cake, not so valuable for feed. It uses 10,000 tons of seed per year. The other four use 18,000 tons of seed, and hull as at Vicksburg and Memphis. In Mobile there is also a mill which uses about 4,000 tons of seed. This last is manufacturing a fertilizer from its cake and other materials, as does the Panola Company, in Memphis. It can thus be seen that this is really becoming a large and valuable manufacturing interest. As, for instance, at the average price of \$10 per ton, the New Orleans' mills alone pay out \$280,000 to the planter. It must be borne in mind that the planter receives this price at his gin-house or landing. I have thus particularly alluded to this manufacture, as it is already a great, and will continue to be a growing industry of the South.

New Orleans is not a great manufacturing place. There are a number of sugar refineries, and great efforts are being made to bring the grain of the West through the city. Two obstacles will ever prevent its being a great grain market: the warm climate, and the constant liability to yellow fever at the very time of the year when the grain should be moving. The river trade of the city has been injured by Memphis, and the railroads carry eastward much cotton which once went only through its harbor. There is considerable talk of the benefits to be derived from the Ship Canal to Ship Island Sound, but as yet the plans are too limited in their details to effect any good to the city. So far a depth of only 10 feet is proposed.

The only special objects of interest about New Orleans are the shell road, the cemeteries, and water-works, and I may add, just at this time, the ice machine, and the pneumatic car motor. The former is a great success; the latter, unfortunately is not yet perfect, but the owners have great hopes. The ice machine men claim that they can make ice at a cost of 1/4 cent per pound. They get up—or down—their cold by the decomposition of ammonia salt. It is a French machine, and very costly.

We were shown immense blocks of rock salt from the mines in Southwest Louisiana. This deposit of salt lies 16 feet under the ground, has been worked to a depth of 80 feet without any signs of failure, and from the main shaft tunnels have been driven 180 feet each way. The salt is mixed and delivered at Broshar City at \$13 per ton. The soil above is a sugar plantation, and will this year produce 300 hogs-heads of sugar. Farther west and south is the great sulphur deposit, which unfortunately is in the hands of the lawyers, and hence its value is not likely to be developed for years. I was told that 100,000 sacks of salt were taken from the mine in six months, that the supply is limited only by demand, and that it may be afforded at very cheap rates.

The sugar season has not yet commenced, but the crop is said to be fully 25 per cent larger than last year. Mr. Lawrence has made his steam plow a perfect success.

Three new railroads are finding their way into New Orleans; one from Mobile, the others from Selma and Meridian, thence northwards to Chattanooga. The first and last of these lines are under the control of the Alabama & Chattanooga R. R.

Co., which is really the old Union Pacific R. R. Ring. They are much abused by some of the people here, but are doing the country a great deal of good. I shall allude more particularly to them in connection with Alabama.

Stirred up by this new and rival interest, Chas. Morgan is rapidly pushing his Texas Railroad, while parallel with him the Alabama & Chattanooga men will run another line.

These rival interests bring good to the people, or rather to the country, for most of the people had rather plod along in the old way. Their places will be taken by other and more energetic men in time. The climate, however, is enervating yet. I can never believe that Heaven intended all this vast area of immensely rich soil to remain an uncultivated wild. The solution of the problem has commenced, the end is not so sure. The Chinaman and the steam plow may settle it.

H. E. C.

Immigration.

The following synoptical table exhibits the total number of immigrants that arrived in the United States during the fiscal year ending June 30th, 1870, and their nationalities:

COUNTRIES.	IMMIGRANTS ARRIVED IN 1869-'70		
	Males.	Females.	Total.
Great Britain.....	63,369	40,316	103,685
Ireland.....	31,414	25,582	56,996
German States.....	73,027	44,621	117,648
Sweden and Norway.....	16,309	10,350	26,659
Denmark.....	2,519	1,584	4,103
Holland.....	863	483	1,346
Belgium.....	718	284	1,002
Switzerland.....	2,412	1,013	3,425
France.....	2,689	1,316	4,005
Spain and Portugal.....	655	286	941
Mexico.....	2,132	759	2,891
Russia and Poland.....	680	440	1,120
Other countries of Europe.....	28	2	30
China.....	14,624	1,116	15,740
Africa.....	26	5	31
British North American Possessions.....	22,720	17,683	40,403
Mexico.....	532	101	633
South America.....	59	10	69
Cuba.....	316	357	673
West Indies.....	315	98	413
Azores.....	275	167	442
All other countries not stated.....	139	423	562
Total.....	235,551	151,546	387,097

Fair of the Central Agricultural and Mechanical Association, Selma, Alabama.

The Second Annual Fair of this association, will be held at Selma, Alabama, in November next, commencing on Tuesday the 8th, and continuing four days. The directors are making ample preparation for the display of all articles which may be brought for exhibition, in all the departments. The unexpected success of the First Annual Fair, and the encouragement received from every direction, induced them to double the area of the grounds of the Association, to erect large and commodious buildings, provide artesian wells and beautify the grounds to an extent that will make their location at once the most convenient and attractive place of resort in the South. The corresponding secretary is Mr. Wm. M. Byrd, Jr.

Trial of the Aveling & Porter Steam Road Roller at Orange, N. J.

This machine, purchased by Daniel Brennan, Jr., in England, for use in this country in the construction of broken stone pavements on the Telford and Macadam systems, was tested for the first time, on the 29th of September, on Main street, East Orange, N. J., in the presence of a large number of invited guests. The section of road on which the trial took place was a Macadam surface, and the test gave general satisfaction. Mr. Brennan imported the machine at an expense of \$5,000. It weighs 36,000 pounds. Much interest is felt in the success of Mr. Brennan, a young man of great enterprise, and to whom has been awarded contracts for a number of miles of Macadam pavement in the young city of Orange.

Trade-Mark Decisions.

Two English decisions are recently reported. 1. *Title: acquiescence*.—When a man has learned a trade secret from his employer and practiced it after the employer's death, selling the article under the old name, he will not acquire such a right to the exclusive use of the name as a trade-mark as will be protected in a court of equity. 2. *Semble*.—Where a trader acquiesces in a particular infringement of his trade-mark for a considerable period during his life, his representatives will be unable to restrain it after his death.

In looking over the portfolios of the Patent Office we are always reminded of the want of care and skill displayed by some solicitors in the preparation of drawings accompanying their applications for patents. Poor, scratchy drawings are the rule; good ones the exception. Some solicitors seem to be anxious only to crowd in their cases. No matter about the character of the drawings. The Commissioner ought to insist upon a decided reform in this respect.

MR. PHILIP STRICKLER, of Timberville, Va., whose communication on balancing cylinders and runner millstones will be found on another page, states that he has a number of good inventions in mills and fire-arms for which he would like assistance to secure patents. He offers to make liberal terms with capitalists who would contract to take out patents for these inventions.

SURVEYS OF THE ISTHMUS OF DARIEN.—The results of the recent surveys of the Isthmus, undertaken by the United States Government, with a view to the construction of a ship canal between the Atlantic and Pacific, show that a tunnel ten miles long, and high enough to accommodate the mass of ships, would be required. The expense is regarded as too great to warrant the undertaking. Further surveys towards the south are yet to be made.