

or's earlier machines which did not have these improvements; while the operation is far less laborious. By arranging two of the type frames in connection with one table, a machine is made to print four pages at each motion of the treadle. In this case the paper is paged before it is bound into books, and one workman will page about 90 reams per day. Such a machine is of course suitable for large establishments only. The inventor also makes a simpler and cheaper machine, for paging one side of the leaf only at a time.

This machine is the invention of John McAdams, who invented his first paging machine in 1851, and has been directing his attention since to various improvements, all of which are embraced in our illustration.

Orders for either the single or double machines, or any inquiries in relation to the matter may be addressed to the inventor, at 44 Chatham street, New York.

## NOTES ON MILITARY AND NAVAL AFFAIRS.

### THE SITUATION.

The week ending Nov. 16th is made ever memorable in the history of our country. The news of the success of the great naval expedition in taking Port Royal, S. C., and the arrest of Messrs. Mason and Slidell on board the British steamer *Trent*, while on their way to Europe as Commissioners from the Confederate States, are events of thrilling interest to every loyal heart.

The facts concerning the taking of Beaufort harbor have been spread out in all their length and breadth in the daily press, and it is unnecessary to enter into details. Suffice it to say that the fleet, after a most terrific bombardment of Forts Walker and Beauregard, drove the enemy out in great confusion. The casualties on board the vessels were very slight, comparatively, only eight being killed and some twenty wounded. There are now 16,000 troops under Gen. Sherman upon the soil of South Carolina, and another expedition will soon sail from Annapolis and Fortress Monroe, probably to reinforce Gen. Sherman's column or to strike at some other point.

### ARREST OF MASON AND SLIDELL.

The arrest of Messrs. Mason and Slidell, although a subject in itself of great rejoicing, is nevertheless causing a good deal of apprehension. The general opinion, however, seems to be that, according to the highest British authority the act was justified. There are several examples where British vessels have overhauled vessels of other nations, and forcibly taken off persons who were engaged in treasonable schemes against the government. The facts of the arrest are simply these: The steam frigate *San Jacinto*, Capt. Wilkes, was returning home from the coast of Africa, where she had been for several months past engaged in suppressing the slave trade. The frigate stopped at Cienfuegos and there learned of the escape of Messrs. Mason and Slidell. Proceeding thence to Havana, it was understood they had taken passage on the 7th inst. on the British mail steamship *Trent*, plying between Vera Cruz, by way of Havana, and St. Thomas and Southampton. While the *San Jacinto* was in the narrowest part of the Bahama Channel, about twenty-four miles to the westward, she met the packet, and, as usual in such cases, fired a shot across her bows and brought her to. Two boats were sent to her, under the command of Lieut. Fairfax, who, boarding the packet, arrested Mason and Slidell, who were personally known to him. They at first objected to being removed without the employment of force for that purpose. However, they were soon after removed without further trouble, and conveyed to the *San Jacinto*. Their respective secretaries, Eustis and McFarland, were also brought on board. The prisoners were sent to Fort Warren, in Boston harbor, where they are now confined. Capt. Wilkes made the arrest wholly upon his own responsibility, he having received no instructions to act from the Federal government.

Many apprehend that the action of Capt. Wilkes will lead to a war with England, but we cannot think so. We believe our government will act right in the premises, and if a wrong has been done to a friendly power, all proper reparation will be made.

### GRAND REVIEW.

On the 20th inst., General McClellan, the Commander-in-Chief reviewed a division of the grand army of the Potomac of 60,000 men, near Ball's Cross

Roads. It was the most extensive review, and by far the most imposing spectacle, ever witnessed in this country.

This system of reviewing troops is somewhat novel in our army operations, and many who are not familiar with its objects regard such demonstrations as unmeaning. Gen. McClellan's experience in the Crimea in 1855 fully convinced him of the importance of such reviews. Frederick the Great, Napoleon, Wellington and all great military commanders were in the habit of holding frequent grand reviews, and the system is kept up in all European nations. It is very inspiring, not only to the troops, but also to the officers.

### MISSISSIPPI RIVER FLEET—NEW GUN BOATS.

An expedition down the Mississippi is rapidly in progress and will move upon the completion of the iron-plated gunboats in course of construction at Carondelet, Mo., and other places. The President has appointed Captain A. H. Foote flag officer of the fleet. A powerful gunboat, named the *Thomas H. Benton*, is now about ready and will be the flag ship of the Mississippi fleet. For eight weeks about two hundred men have been at work upon her, and their labors are nearly completed. The twin hulls of the *Benton* have been connected so as to form one powerful hull of 186 feet in length and 74 feet in breadth. The hull is very stanch, and is sealed up inside with three and four inch plank. It is divided into forty water-tight compartments; thus the *Benton* may be considered one of the safest war vessels it is possible to build, for it would scarcely be possible to penetrate every compartment during the closest and heaviest firing into her for hours. And then her hull, all over to below the water line, as well as every other exposed part of the boat, is covered with heavy iron. That about the middle of the hull is two and a half inches in thickness, and securely fastened by one and a half inch iron bolts, which are riveted inside, the heads of the bolts being countersunk, so that they cannot be knocked off by shot. The wheels are perfectly protected from shot and shell, the wheel house being covered with six-inch timber, and plated with boiler iron. The gun deck is spacious and a model of neatness combined with strength. It is seven feet four inches in height, with a gentle inclination, calculated mathematically, as the safest shape for the purpose. The *Benton* is casemated all round, the timber being in parts twenty-four inches thick, and in less exposed places twelve inches, and all covered with two and a half inch iron. The casemates are built at an angle of forty-five degrees, in the most approved method for throwing off an assailant's missiles. The casemates are pierced for eighteen guns of the heaviest caliber, forward. She will have fore and aft two Parrott rifled cannon, which carry four or five miles. On board this floating battery will be a full complement of all the necessary ordnance stores, and everything that can add to the comfort of the crew, as well as to the confusion of the enemy. It is probable this gunboat will be furnished with "telescope" chimneys, which are capable of being shortened, as occasion requires.

### MISCELLANEOUS.

For the information of applicants to the government, too numerous to be answered individually, we are authorized to say that thus far no decision has been made in regard to permitting trade to Beaufort or its vicinity.

Mr. Savage, American Vice-Consul at Havana, had visited Key West on business, and on returning to his post on the 10th instant, reported that 1,500 Confederate troops had been discovered by the federal pickets some twenty miles from Fort Pickens on Santa Rosa Island. The picket guard immediately conveyed information of the presence of the enemy to the commander of the federal fleet, who sent a force and shelled the rebels off the island with great loss. It is supposed the object of the enemy was to concentrate a force of 5,000 or more troops, and by a forced march to make another night attack upon Col. Wilson's camp.

The affair at Guyandotte, Va., noticed in our last number, appears not to have been so serious a matter as at first reported, but few Union troops were killed, and but few buildings were burned in retaliation.

The newspaper sensationists report that Gen. Johnston, commanding the Confederates, is marching at the head of 40,000 troops, threatening Louisville, Cincinnati or Lexington, and that Gen. Buell is con-

centrating his command at Danville to oppose the enemy's march.

Gen. Price is going into winter quarters at Fort Smith, Arkansas, and Gen. Hunter's troops have evacuated Springfield, Mo., and have returned to points on the railroad to await the orders of Gen. Halleck, who is now in command of the Western Department.

Rosecrans's forces have chased Floyd twenty-five miles from Gauley river, and at last accounts he was near Wytheville, Va. He evidently finds it uphill business to subjugate Western Virginia.

A speck of war looms up near Newport News, Va. The Confederate General Magruder, it is reported, is coming down by land and sea to attack the Union forces. Preparations are being made to give him a warm welcome.

It does us good to take up the *Louisville Journal* and the *Louisville Democrat*. These loyal papers are doing battle for the Union and the Constitution in the right spirit, and free from all fanaticism. We wish them abundant success in their good work.

The burning of several railroad bridges in East Tennessee by the Union men has caused great commotion among the Confederates.

Major-General Dix, commanding at Baltimore, has sent a force of 4,000 troops into Accomack County, Va., to protect the Union men there. This county is the residence of that distinguished belligerent, ex-Governor Wise, and is on the east side of Chesapeake Bay. There were some 1,500 secession troops in that region, who retreated in expectation of seeing Gen. Dix's troops. The General's proclamation to the people is a sensible document.

The Cabinet having had under consideration the propriety of granting passes to those who may wish to go through our lines and into the South for the purpose of preserving their property from confiscation, have determined to refuse such permission. There are many reasons why such permission on the part of the government would be manifestly improper, one of the chief of which is that no one can succeed in saving his property without declaring himself an enemy of the government. The government has enemies enough now to contend with without allowing passes to more.

William L. Yancey, the great Southern freeer, who is now acting in the capacity of a commissioner of the Southern Confederacy in Europe, is getting discouraged in his efforts to obtain a speedy recognition. On the person of James Brown, who was arrested in Boston on the 13th inst., a letter was found from Yancey to his son, in which he speaks discouragingly of his prospects.

Mr. Russell, in one of his recent letters to the *London Times*, says:—

One of the main agencies on which the chiefs of the army rely for the establishment of discipline is total abstinence. Never has Bacchus in all his forms and poor John Barleycorn been so prosecuted in any army in the world. The sword has done what the pen never dared, and to all intents and purposes the sale of drink to a soldier is a crime, and drink of any kind is a *malum et prohibitum et per se*. One grim colonel rebukes his captain and threatens him with arrest for "drinking and fiddling in his tent," and intimates it was disrespectful to his commanding officer, possibly on the grounds put by the Indiana colonel for a similar offense. "You are to consider yourself under arrest, sir, for making a row in your quarters and not asking me to it." Another has a judicial decision on the question whether lager beer is or is not an intoxicating drink, and it is decided in the negative to the joy of Deutschland, who soon proves the contrary, and the lager is put in the *index expurgatorius* also.

Orders from Washington have been received in this city for the preparation of lumber for the construction of buildings for a naval depot at Port Royal for the manufacture of all kinds of machinery for naval and other purpose; also to dispatch at once storeships, which are to be permanently stationed at the point. The government intends, in fact, to establish there a permanent depot for naval and military purposes.

An ingenious soldier of the Fifteenth Ohio regiment, now on duty in Kentucky, has devised a method of warming tents, which is an improvement upon the similar contrivance of a Rhode Island soldier in Virginia, noticed sometime ago, and is described as follows: "In the centre of the tent a hole is dug in the ground about two feet square and two feet deep. From the bottom of this hole a small trench leads to the surface of the ground outside the tent, to admit the cold air. From the top another covered trench leads to the opposite side of the tent to conduct the smoke out. The hole is arched over, very

much like the top of a circular cistern wall, and an open space of perhaps a foot in diameter is left at the top for putting in the fuel. Cover this up (with an old stove plate, a bit of sheet iron, smooth stone or the like) and you have the floor of your tent converted into the top of a furnace. No room is taken up by heating apparatus; the heat is greatest where it should be, next the feet; the tent is perfectly free from smoke, and with any sort of fuel that is not absolutely soaked in water, you can raise the temperature just as high as may be desired.

"The Hoosier Railroad Regiment" is the title of a military organization in Indiana, now preparing for the war. It numbers one thousand men, all of whom are accustomed to working upon railroads. Indiana will be the first State to have in the field a regiment composed entirely of men who understand how to lay a track, repair a bridge or set up a locomotive.

#### The Cotton Question in Europe

Is beginning to assume more definite shape, and there now seems to be less disposition in the British press to countenance any attempt to break the blockade. The *Times* says:—

As the clouds thicken in the West, daylight dawns in the East. That we can open markets in the East whenever the markets of the West may fail we have already shown; but it now seems equally clear that we can find also in the East a substitute for the productions for which we have been accustomed to look almost exclusively to the West. India, which, properly stimulated, can produce all things, is bestirring herself to supply our necessities in the article of cotton. What has been long certain in theory is now about to be shown in practice—that with American seed and European supervision, we may obtain any quantity of cotton from India that Manchester will pay for.

India is becoming active, laborious and prosperous. She is beginning to call for European products, and the English merchant is carrying to India his manufactured cotton goods in payment for the raw cotton which India is just learning to produce. America is a great element, but not a necessity to our commercial well being.

The *Liverpool Mercury* bears similar testimony:—

The accounts from India are more encouraging than those from America. The Indian public seem to be at length thoroughly roused to the importance of the present crisis on the fortunes of India as a cotton-producing country. A very great step has been made by the introduction of steamboats on the upper part of the river Godavary. That great river, with its numerous tributary streams flows through the most extensive of all the cotton fields of India—namely, that of Nagpoor and Hyderabad. The quantity of cotton grown in this district is immense, and very little of it has ever found its way down the sea-coast owing to the difficulty and cost of transport. Moreover, the quality is superior to that of the Surat cotton, and most equal to medium qualities of American. Mr. Mercer, one of the American planters who was employed by the East India Company to introduce the growth of the New Orleans cotton seed in India, speaking of this cotton says: "All the cotton I have seen from that neighborhood is of very good quality indeed, and better cleaned than is usual in Indian cottons."

Great arrays of statistics from India are given in the London papers to prove that the people of India are going into the cotton business extensively. A Calcutta letter in the *Times*, under date of September 23, says:—

The native mind seems to have been thoroughly roused on the cotton question. Accounts from all parts of the country, but more especially from the rich cotton districts on the banks of the Godavary, speak of the area of land cultivated with cotton as far exceeding the proportion of any previous year. Bombay and Madras have taken the lead in this race, but neither Central India nor the Northwest have been slack in their preparations. If these have not been so forward as might have been expected, the cause lies in the uncertainty which has hitherto prevailed regarding the duration of the civil war in America. If that were to be an affair of only a few months, and if at the expiration of that time the Southern States were to return to their normal condition of cotton suppliers to England, the only result of the enterprise of the native capitalist would be terrible losses, and possibly ruin.

The Calcutta *Englishman* says:—

Our reports from all parts of the country continue to predict favorably of the expected cotton crop of this year: indeed we gather from all sides that an area considerably in excess of previous efforts are being made in the cotton-growing districts of the Madras and Bombay Presidencies particularly, to enable them to meet any call that may be made upon them for their staple. Tinnelly has, perhaps, done more in this respect than any other district with the exception of Dharwar. The cotton growing districts bordering on the Godavary river, are also reported to have considerably increased the area usually devoted to the cultivation, and the facilities offered by the river for transporting it to the coast will render any increase from this quarter highly desirable, not only as offering a prospect of larger returns for money invested from the cheapness of water carriage to the coast, but from the early date at which it will be available for the same reason. In Tinnelly great and successful efforts have been made not only to improve the staple derived from indigenous seed (to which much attention has been paid in recent years), but to introduce foreign varieties.

These extracts are full of meaning and fully confirm the position taken by the *SCIENTIFIC AMERICAN* at the commencement of the war; namely, that secession if persisted in would tend to destroy the

cherished interests of the Southern States. The South has had no such enemies as Davis, Toombs, Yancey, Rhett and others of the same sort.

#### Intermeddling of the French Government.

It is well known that the French government is paternal in its character, regarding itself as a wise father and all its subjects as children. A Frenchman lives according to the prescriptions of his government. It stands by him in his bargains to see that he is not cheated, and it exercises a tender care over the orthodoxy of his faith. The French people have become accustomed to this watchfulness and they generally like it. We are pleased to see, however, that the most intelligent portion of the people are beginning to discover that there are two sides to this question of the constant intermeddling of government with the private affairs of the people.

M. Pouillet has recently reported to the Academy of Sciences the result of the labors of a commission, in investigating a question in relation to alcoholometers, which was submitted to the Academy by the administration, the commission declare that, if it is not impossible to bring alcoholometers under the dominion of the law of 1847, and by stamping them, afford a guarantee of their exactness, yet this measure, difficult to put in practice, would, in their unanimous opinion, be productive of more inconveniences, and very grave ones, than advantages, especially because the government stamp could easily become the sanction or covering of fraud. In the *Cosmos* the editors say that these unexpected conclusions were not combated by any member of the Academy, which adopted them by an almost unanimous vote.

A NEW WEAPON.—In speaking of this invention the *Lynn Mass. Bay State* says:—"A late number of the *SCIENTIFIC AMERICAN* contains an article on a weapon said to be invented by a German by the name of Thompson. The article referred to is a complete description of one invented many years since by Mr. Francis Dixon, of this city. We have seen the correspondence, or letter of acknowledgment, from the Ordnance Department, dated Sept. 24, 1846, Mr. D. having at that date offered the Battery, as he termed it, gratuitously to the government. Mr. Dixon, a few weeks since, renewed the offer of this battery, with some other more recent inventions, to the government, on the same terms; and fearing they would not, during the present pressure of business, be properly understood, has recently visited Washington for the purpose of giving a more full explanation of the whole."

EFFORTS FOR COTTON.—Immense exertions are made in England to extend the area of cotton cultivation. Ships laden with cotton machinery have been despatched to Western Africa and Canadian colored people are sought to be removed thither as cultivators. A Consulship has been established by the authorities of Great Britain at Abeokuta, and T. C. Taylor, Esq., has been commissioned to the position. The celebrated traveler, Captain Richard F. Barton, has been appointed British Consul at Fernando Po. The isle and port of Lagos have been acquired by the British government. These movements may prove Africa's opportunity, while they exhibit strong evidence of the sagacity and energy of our trans-Atlantic neighbors to develop and profit by the commerce which the Western and central portions of the continent are destined to pour into the lap of civilization. The United States pursues a policy which is repelling and discouraging to Africa.

THE WORLD'S FAIR.—In answer to repeated inquiries concerning the proper person to address in reference to articles to be exhibited at the approaching World's Fair, in London, we would state that applicants in New York and vicinity can make their entries at No. 61 Canal street, with Joseph E. Holmes, where the necessary papers will be found, and the Commissioners will cause all articles to be examined that may be entered.

THE Chinese were the first who constructed cannon with iron bands shrunk upon them for the purpose of strengthening them at the breech. The Chinese built vessels with water-tight bulkheads, hundreds of years ago. This has been considered by most persons quite a modern invention.

#### What Our Good Neighbors Say.

The Brooklyn (N. Y.) *Star* said to its readers, not long ago, as follows:—

We notice with pleasure the increasing success of the *SCIENTIFIC AMERICAN*, published by Munn & Co., New York. The intrinsic merit of the publication deserves the prosperity it enjoys, and its career is a striking proof of what may be effected by enterprise and untiring industry. The *SCIENTIFIC AMERICAN* commenced as a very small sheet, and with little or no adventitious aid. From the first issue it has steadily advanced in circulation and influence, and now stands in the first class of scientific journals in the new and the old world. It is invaluable to the scientific man, and interesting to the general reader.

The New York *Sun*, a newspaper of immense local circulation, with a desire apparently to out-do the *Star* in its complimentary notice of the *SCIENTIFIC AMERICAN*, publishes the following:—

The *SCIENTIFIC AMERICAN* has a pleasing faculty of presenting agreeable information with the scientific, and no paper excels it in its general melange of useful knowledge, thus rendering it alike suitable to the inventor, to his family, to the farmer and his family, and to other classes, also. Representing as it does the inventors' interests in this country, a class growing more and more powerful and efficient every year, and acknowledged as a journal of the highest authority, in this or foreign countries, on scientific subjects, we are confident in seeing it grow with the growth and strengthen with the strength of these interests in times to come, the same as in times gone by. It is one of the best newspapers in this country. It is now, as it has always been, the fit representative of the patent interests in this country, in which business it has always stood forth the largest and most effective establishment in the United States.

The *Radii*, published at Canajoharie, N. Y., and edited by a deaf mute, but one of the most intelligent gentlemen we ever met, is responsible for the following:—

We welcome among our exchanges this most excellent periodical, and our numberless scissorings from it show better than any words the justly high admiration in which it is everywhere held.

Its pages are meat and drink to any intelligent mind—for it does not contain mere dry descriptions of mechanical devices, but puts the thing before your eyes in engravings of the highest art, and fills its pages with an epitome of all the most interesting artistic, inventive, philosophical and scientific knowledge of the day.

In urging our many readers to avail themselves of its tuition, we are not going through the too common platitudes of "puffing," but express our honest conviction that money invested in subscribing for it, will be returned in information and pleasure more than a hundredfold.

The new volume begins with the New Year, and we know no better way for any man—business man or mechanic—to treat himself, than to send \$2 to Munn & Co., of New York, for this journal.

#### The Gratitude of Inventors.

The two annexed letters from persons for whom we have recently secured patents, speak for themselves. In the list of claims published on another page (the issue for a single week) we recognize the names of TWENTY patentees whose business was transacted through this office, every one of whom, we trust, are as well satisfied with the manner in which their applications were prosecuted before the Patent Office as the gentlemen who have given the following expression to their feelings:—

MESSRS. MUNN & Co.—I have this day received from the Patent Office the letters Patent on my invention for Attachable Mosquito Bars to Bedsteads, obtained through your Agency. I wish to thank you for the expedition used by you in procuring said Letters Patent. Should I at any future time require a repetition of such services, I shall again confide my cases to you. Very respectfully,  
Yours,  
S. ROEBUCK.

Brooklyn, Nov. 13, 1861.

MESSRS. MUNN & Co.—Gentlemen—The English patent has been received, and in duty to you I state that you have honorably guarded the trust reposed in you, and as well prosecuted my case with promptness and efficiency. With pleasure I recommend you to every inventor that wishes to employ reliable men. Please accept the thanks of your friend and patron.  
Respectfully,  
JOHN T. SCHOLL, M. D.

Port Washington, Wis., Nov. 1, 1861.

KNITTING.—The following directions for knitting are furnished to the *Boston Post*, who always "carries her Knitting work":—"Cast twenty-six stitches on each needle. Rib two inches two and two. Commence the thumb by taking two stitches as seam stitches, and widening two stitches between these two seam stitches. Knit three rounds between each widening until you have twenty; take these twenty off for the thumb, make twelve stitches, then decrease every other till only three of the increased stitches remain. Knit a little more than an inch plain. Now for the finger; take off twenty stitches, make, twelve, and knit the same as at the thumb; knit about an inch and a half plain, then narrow every sixth stitch; knit six rounds, then every fifth, and five rounds, and so on. Then take up the finger, narrow to twenty-nine stitches, make the finger a little shorter than the mitten; now the thumb, reducing the stitches to thirty."