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NEW YORK, SATURDAY, MARCH 12, 1887.

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# No. 584,

#### For the Week Ending March 12, 1887.

#### Price 10 cents. For sale by all newsdealers.

## NEW NAVAL AND MILITARY INDUSTRIES.

The Congress which has just concluded its labors country is well nigh without defenses. The forts, timber, would be generally used in a European war. while still maintained, are out of date, and the tually aroused, and large appropriations, amounting alphabetical list includes the greater number : to many millions of dollars, have been made for new works. It is yet too soon to know the exact amount, but enough has been designated to have a very great effect upon the industries of the country.

The naval vessel of to-day is a structure of iron and steel. In the generalities and details of the process of its manufacture and of the ultimate construction, all beacons, bombs and bomb proofs, boilers, breech-loadbranches of mechanical engineering are involved. The | ing arms, bridges, bullets, bullet machines, buoys, features of the construction are no longer settled, as was the case with the old sailing ships, by precedent. The former navy was the creation of sailors and shipbuilders. The modern ships of war are the creation of inventors and of engineers. The same applies to ordnance. The successful originators of machine guns, breech loading cannon, and torpedoes must be unfettered by precedent. Originality must be the keynote of success.

This much refers to the product; but in the plant required for its production a great field for industrial appliances, oil-burning furnaces, ordnance, propellers, enterprise is offered. For these appropriations to be expended, new plant of a type not existing in this country will have to be installed. New rolling mills for road-making machinery, reaping and other agricultural heavy plate, steel works for casting cannon ingots, all have to be organized. It seems probable that the 49th Congress, by its appropriations for these objects, will tents and fittings, tools, torpedoes, torpedo craft, have exercised a most marked influence on the iron manufacture and mechanical interests of the country.

America has preserved to the present day one item of her prestige undiminished. She is still the land of inventors. In the expenditure of these amounts a great field for her inventive talent seems opened. The people of this country do not want to follow blindly in the tracks of other nations. We should originate improvements in ships and guns ourselves. In machine guns people can be actively and profitably employed in we have already led the world. Our record in heavy pieces should be, and we hope will be, as great. Complaints of the failures of foreign artillery are frequent. The recent bursting of an Armstrong cannon on the Collingwood, and more recent criticisms of Krupp's guns, show that perfection is not yet reached. Even in To the Editor of the Scientific American: the material there may be a change. We are now the leading manufacturers of aluminum; we may yet be the first to apply it successfully to the manufacture of ordnance.

We have already taken the ground that America, from her isolated position, does not need the standing army and the reserve supplies that alarmists consider requisite. Yet in the expenditure of these new appropriations we can see a promise of much good. They will stimulate invention and industry, because the amounts are a premium for whatever is new and valuable

In fortification, which now has to be on new lines, owing to the increased power of artillery, there is also a yast field for original work.

### WAR AND INVENTION. (Concluded from page 32.)

It will readily be perceived that war in European countries, where a very large percentage of the effective manhood of each nation is sent to the field or into garrison, calls for as many labor-saving inventions in the arts and manufactures as it does in purely warlike directions. Given a machine that will do the work of ten meneven though at no saving of expense on the cost of the capitalists. Their general manager, J. B. Watkins, manual labor whose place it takes-it will find in war gives an interesting account of this gigantic plantatime innumerable uses which might not be accorded tion, which throws the great Dalrymple farm in to it in peace. Similarly, a machine that can be Dakota into the shade completely. managed or tended by a woman will take precedence in war time of one doing the same work but requiring | "was purchased in 1883 from the State of Louisiana the care of a man. These facts should be remembered and from the United States Government. At that by inventors when deciding in what countries they time it was a vast grazing land for the cattle of the few will take out patents. They should also bear in mind dealers in the neighborhood. When I took possession that in Europe, while inventions which are wanted by I found over 30,000 head of half-wild horses and cattle. the government—particularly those directly devoted to My work was to divide the immense tract into conveniwar purposes-may be appropriated to government use | ent pastures, establishing stations or ranches every six without the patentee's consent, it is customary for the miles. The fencing alone cost in the neighborhood of government to reward the inventor according to the \$50,000. The land I found to be best adapted to rice, importance of the invention and the use made of it. sugar, corn, and cotton. All our cultivating, ditching, In Great Britain it is now the practice for a board of officers to pass upon the value of the invention, and to half a mile wide, for instance, and place an engine on recommend the amount of royal grant which shall be made to the patentee. They are not usually illiberal in their allowances. Of course, one of the important requisites of a land campaign is an efficient transportation service for food, ammunition, clothing, arms, hospital stores, general supplies, and for the sick and wounded. Anything which simplifies or lessens the cost of transportation becomes almost a necessity to a great army. Thus, in Railroad runs for thirty-six miles through our farm. addition to the improvements in the ordinary running We have three steamboats operating on the waters of Duess roads accessible to ordinary heavy vehicles. Even the yard, and a rice mill."-St. Louis Republican.

shoes and harness of draught animals may afford opportunity for successful invention. Pontoon and other has been a notable one. The American navy has styles of bridges, suitable for rapid transportation in gradually gone on the downward path until the sections, or designed for construction from growing

While it would probably be difficult to mention all ordnance is far behind the age. The attention of the the varieties of invention that would, or should, receive Senators and Representatives has at last been effec- a special impetus from a great war, the following

> Accouterments, aerial machines, air-guns, alloys for gun metal, ambulances, ammunition, amputating instruments, anæsthetics, antiseptics, artificial limbs, armor for ships and forts, arms of all kinds, artillery and carriages, balloons, balsas, bandages for wounds, battery guns, battery forges and tools, bayonets, cables, caissons, cannon, cannon balls and projectiles, carriages, carts, cartridges, clothing for soldiers, compasses, derricks, diving apparatus, drydock machinery, dynamos, electric appliances, explosive compounds, ferry boats, field guns, field telegraphs, fire arms, floating batteries, flying machines, fog signals, fuses, gun carriages, gun equipments, great guns, harness, hydraulic machinery, horse shoes, intrenching tools, life boats, lubricators, machine guns, magazine firearms, medical appliances, mining appliances, nautical pontoons, powder-making machinery, primers, projectiles, railway rolling stock and appliances, rams, machinery, rockets, saddles, shells, splints, steam machinery, submarine appliances, surgical appliances, tourniquets, well diggers, woodworking machinery, wrecking machinery.

> The foregoing list, extended as it is, embraces only the general heads of products and machinery which would receive a special impetus by a European war. The inventor will readily add thereto the thousand and one developments and subdivisions of the list. Enough is given to show that the inventive genius of our case the great powers unhappily should prefer war to peace.

# CELEBRATION OF THE CENTENNIAL OF THE ENACTMENT OF THE PATENT LAWS.

The first patent law was enacted in U.S.A. on the 10th of April, 1790. I would suggest that inventors meet in 1890 at some place for centennial celebration, for the purpose of showing the great progress made by the American genius under the protection of the law. 1 would like to hear from others. F. M. SHIELDS. Coopwood, Miss.

[As the locality for such a convention, we would suggest this city. The patent law was passed by the first United States Congress, whose first two sessions met in New York, the first session lasting from March 4 to September 29, 1789, and the second from January 4 to August 12, 1790. An exhibition of inventions, of early productions of the pioneers of the arts, might be organized in connection therewith, and a really memorable centennial might be celebrated. We echo the sentiment of the last sentence of our correspondent's letter. Others should be heard from.]

# The Largest Farm in the World.

In the extreme southwest corner of Louisiana lies the largest producing farm in the world. It runs 100 miles north and south, and many miles east and west, and is owned and operated by a syndicate of Northern

"The 1,500,000 acres of our tract," Mr. Watkins said, etc., is done by steam power. We take a tract, say each side. The engines are portable, and operate a cable attached to four plows, and under this arrangement we are able to plow thirty acres a day with only 39% the labor of three men. Our harrowing, planting, and other cultivation is done in a like manner; in fact. there is not a single draught horse on the entire place. We have, of course, horses for the herders of cattle, of which we now have 16,000 head. The Southern Pacific gear of wagons and ambulances, the inventor has wide our own estate, upon which there are 300 miles of navi-aff scope in steam motors capable of going anywhere over gable waters. We have an ice house, a bank, a ship lov

The processes of the twelve leading blue print and other copying programs of the twelve leading blue print and other copying programs of the twelve leading blue print and other copying programs of the twelve leading blue print and other copying programs of the twelve leading blue print and other copying programs of the twelve leading blue print and other copying programs of the twelve leading blue print and other copying programs of the twelve leading blue print and other copying programs of the twelve leading blue print and other copying programs of the subject. Abstract of Sir William Thomson's gas a lecture by Prof. ALBERT A. MICHELSON, glving results of recent determinations. A Higher A. MICHELSON, glving results of recent determinations. A Higher A. MICHELSON, glving results of recent determinations. A Higher A. MICHELSON, glving results of recent determinations. A Higher A. MICHELSON, glving results of the second of the manufacture of the most recent machines. As the VIOLOGY. Asstruct Digestion in the Horse. The four stakes of digestion in the horse. Second digestion of these factors. Possibility of increased duration of Hige. 981
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