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Contents.

(Illustrated articles are marked with an asterisk.)

Table listing various articles such as 'Anchor and freight hoisting apparatus for vessels', 'Army comparison', 'Atoms, ring-shaped', etc., with corresponding page numbers.

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SCIENTIFIC AMERICAN SUPPLEMENT

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Table listing contents of the supplement by page number, including sections like 'I. AGRICULTURE AND BOTANY', 'II. ANTHROPOLOGY', 'III. CHEMISTRY', etc.

NEW NAVAL AND MILITARY INDUSTRIES.

The Congress which has just concluded its labors has been a notable one. The American navy has gradually gone on the downward path until the country is well nigh without defenses. The forts, while still maintained, are out of date, and the ordnance is far behind the age.

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 branches of mechanical engineering are involved. The features of the construction are no longer settled, as was the case with the old sailing ships, by precedent.

This much refers to the product; but in the plant required for its production a great field for industrial enterprise is offered. For these appropriations to be expended, new plant of a type not existing in this country will have to be installed.

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.

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.

In fortification, which now has to be on new lines, owing to the increased power of artillery, there is also a vast 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.

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.

shoes and harness of draught animals may afford opportunity for successful invention. Pontoon and other styles of bridges, suitable for rapid transportation in sections, or designed for construction from growing timber, would be generally used in a European war.

While it would probably be difficult to mention all the varieties of invention that would, or should, receive a special impetus from a great war, the following alphabetical list includes the greater number:

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, balsams, bandages for wounds, battery guns, battery forges and tools, bayonets, beacons, bombs and bomb proofs, boilers, breech-loading arms, bridges, bullets, bullet machines, buoys, 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 fire-arms, medical appliances, mining appliances, nautical appliances, oil-burning furnaces, ordnance, propellers, pontoons, powder-making machinery, primers, projectiles, railway rolling stock and appliances, rams, road-making machinery, reaping and other agricultural machinery, rockets, saddles, shells, splints, steam machinery, submarine appliances, surgical appliances, tents and fittings, tools, torpedoes, torpedo craft, 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.

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

To the Editor of the Scientific American:

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.

[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.]

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 capitalists.

"The 1,500,000 acres of our tract," Mr. Watkins said, "was purchased in 1883 from the State of Louisiana and from the United States Government. At that time it was a vast grazing land for the cattle of the few dealers in the neighborhood."