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Contents.

(Illustrated articles are marked with an asterisk.)

Air of the sea, the	Inventions, engineering 250
American Museum of Natural	Inventions, index of 251
History, Geological Hall	Inventions, miscellaneous 250
•f*239, 245	Keg, convertible* 242
Anvils, neiseless	Lands in Flerida, reclaiming 245
Baremeters, an exhibition of 244	Legal feg. 245
Belt, leather link machinery * 244	Licerice, cultivation of, the 242
Birds, native, our	Lighthouse illumination 241
Body, human, development of 244	Light, how far it penetrates deep
Books and publications, new 250	sea depths
	Notes and queries
Business and personal	
Catalogue, a model	Photography, sub-aqueous 243 Pigments under natural and arti-
Cattle, pygmy, at Central Park, New York*	ficial light
Chair, recking, reclining* 249	
Clamp, keving, mechanics'* 242	Pestage rates, increase ef, pre-
	pesed 248
Clothes drier, automatic* 244	Prespect, encouraging, for the
Cyclemeter, a pesitive* 243	city of New York 243
Cellisien at sea	Railways in China 240
Cow with five legs	Railways, introduction of 241
Defense, the national 241	Rifle ranges, safety devices for 246
Drum making 241	Reads, how to improve 244
Echoes at sea 244	Silk weaving, power loom 241
Engine and beiler for good ser-	Slate for roofing and school slates 246
vice*	Stove heating improved* 243
Fish killed by poisonous water 249	Sprinkler, automatic, the 248
F. el, economy of 240	Survey, coast, the
Furniture and decorations of a	Telephone, Guthrie's 246
library* 246	Tiles, encaustic 246
Gelatine-bromide dry plates,	Tin, C•rnwall
manufacture •f* 247	Trade mark decision 243
Gelatine-bremide plates, appara-	Venice 244
tus fer ceating*	Vineyards, pretection of, from
Gun, casting a great 242	frest 244
Gutta percha 248	Wagens, end gate fer* 242
Inventions, agricultural 250	Yellow fever, experimental 241
. *	

	Inventions, index of	
	Inventions, miscellaneous 250	
245	Keg, convertible* 242	٠
246	Lands in Flerida, reclaiming 245	٠
244	Legal feg	:
244	Licerice, cultivation of, the 242	ŀ
49	Lighthouse illumination 241	ĺ
44	Light, how far it penetrates deep	l
250	sea depths	ļ
50	Notes and queries 251	ļ
48	Photography, sub-aqueous 243	
	Pigments under natural and arti-	i
249	ficial light	•
42	Pestage rates, increase ef, pre-	İ
242	pesed 248	l
244	pesed	l
43	city of New York	l
245	Railways in China 240	ı
245	Railways, introduction of	ł
241		ļ
241	Rifle ranges, safety devices for 246 Roads, how to improve 244	i
244	Silk weaving, power loom 241	i
722	Slate for roofing and schools lates 246	ı
243	Steve, heating, improved* 243	l
249	Sprinkler, automatic, the 248	!
240	Survey, coast, the	ŧ
540	Telephone, Guthrie's	l
246	Tiles, encaustic	l
340	Tin, Cernwall	i
247	Trade mark decision	ı
7± (l
247	Venice	ı
242	frest 244	I
248	Wogens and sate feath 949	i
250	Wagens, end gate fer*	ı
100	1 chew level, experimental 241	i

TABLE OF CONTENTS OF

SCIENTIFIC AMERICAN SUPPLEMENT

No. 587

For the Week Ending April 17, 1886.

Price 10 cents. For sale by all newsdealers. I. CHEMISTRY.-Glucese.-By Wm. H. Brewer.-Consumption of

starch sugar.—Sugars chemically considered.—The history of sugar. —Processes of making starch sugar.—Production in Europe.—Use as an adulteration. A New Law of Thermo-chemistry.—By Geo. F. Becker	8574
II. ENGINEERING, ETC.—Poetsch's Methed of Sinking Mine Shafts. —2 engravings. The Use of Torpedoes in War.—By Commander E. P. Gallwey. Special torpedo ships it is apparetion of feets. Defence by ma- Explosive Forces in Gas Engines.—3 figures.	
III. TECHNOLOGY.—Hinged and Balanced Lamppost.—4 figures Cylnoer Box-nailing Machine.—5 figures. Machine for Testing Chains.—I figure Stereetype Machine.—2 engravings.	8573 8573
IV. PHYSICS, ELECTRICITY, ETC.—Capillary Attraction.—From a lecture by Sir Wm. Thomson.—With 1 figure. Du Rocher's Electric Megaloscope and Pile.—With diagram and 2 engravings. Electric Deposition of Fumes.—Treating of several different processes. Sound and Color.—With 4 diagrams and 1 engraving. Radii of Curvature Geometrically Determined.—By Prof. C. W. MACORD.—5 figures.	8570 8570 8571 8571
V. METEOROLOGY.—The Forms and Heights of Clouds.—The nimeus.—Apparatus for measuring the height of clouds.—5 en- gravings.	

VI. GEOLOGY.—The Phosphate Mines of Canada.—By BEAU Mol—Treating of the different mines.—Products obtained from same, etc...

IX. PHYSIOLOGY, MEDICINE, ETC.—Instantaneous Photographs of the Heart in Motion and of Peristalis.—ByWM. GILMANTHOMPSON.—A rabbit's heart in motion.—A pigeor's heart.—Freg's

X. MISCELLANEOUS.-Crease 5 Dirt.-What it is.-Found in all rain A Prespect for Railways in China. A New Thief Trap.

XI. BIOGRAPHY.-ISAAC NEWTON.-His development at school

THE COAST SURVEY.

der the direction of Hassler and Bache and Pierce can officials have come to have a positive dread of the scarcely help feeling a regret that it has been suffered "promoters" of foreign enterprises. They have, unto fall into its present deplorable condition.

conducted on a strictly business and scientific basis, and no officer, whether from the army, navy, or the civil service, could hope to retain his position once incompetency or a lack of diligence became apparent. As a people; but while their foreign policy has often only result, the Coast Survey hydrographic charts came to negative merits, it shows in many cases a justice and be known for accuracy among navigators the world wisdom of which our own country cannot always over; the stranger or the native skipper found it so boast. We are even now in the midst of a dispute with easy to approach our coast and enter our harbors by China in regard to the question of indemnity for the their aid that they complained of the laws of com-deplorable outrages committed against the Chinese pulsory pilotage; and it was an achievement upon laborers in Wyoming and other parts of the West. which either was justly entitled to pride himself when he discovered a shoal, a ledge, or even a solitary submerged rock not laid down in the Coast Survey charts, or, if there, inaccurately determined. After the death least retarded justice, we have now added discourtesy. of that noble old man, Prof. Benjamin Pierce, perhaps | The Chinese minister and his suite on their entrance the greatest mathematician of his time, there was a short interregnum during which the Coast Survey had: attention due to their position, and particularly ordered practically no head; and then came a period of mis- by the State Department, but with unequivocal marks management, not to use a harsher term, in which poli-jof disrepect and with churlish demands for credentials. tics, for the first time in the history of the Coast Survev, was suffered to exert its malign influences in every branch of the service, when original investigation got punity. China is not vindictive, but she has shown no applause and honest industry no reward. This was herself to have a good memory. unrefuted charges

been working to turn the service over to the depart- authoritatively that the Chinese were about to introments of War and the Navy-the geodetic work to the duce foreign systems for working their coal mines, and one and the hydrographic to the other.

entirely competent to perform the trigonometrical and brought forth a communication from a Chinese emtopographical work, and the sounding out of bays, ploye at the Kaiping Mines, near Pekin, that such a rivers, and harbors, the locating of shoals and ledges, system had already been in use for three years past, the observance of tidal phenomena, and the work upon a part of the plant consisting of a tramway from the the high seas was alleged to pertain to the proper and mine mouth to the nearest canal. There is, conseprofessional duties of the navy.

tapism" and the "circumlocution office," and freed provements until these wrongs have been redressed. from the restrictions of military discipline.

They showed, by a comparison of work in the field, the difference between that performed by the army and navy officers while with their commands and by these mechanical devices to locomotives is calculated to same and other officers while under the direction of effect a saving in fuel, says the National Car-Builder. the Coast Survey office, in which the superiority of the Steam is not used so economically that less could not latter both in quality and quantity was clearly apparent.

three noted men whose names have been mentioned it gases being passed into the atmosphere. Skill, ingeis not easy to maintain; the influence exerted by them nuity, and perseverance are, however, required to apin the service itself, and the confidence that was felt in ply the forms of improvement indicated, and great their skill by those without who were interested in its difference of opinion may rationally exist among acsuccess, none but a very able and experienced and complished mechanical engineers as to the probable conscientious man could hope to replace.

with departments more or less political may be looked of accomplishing saving, when all the changes to be upon as likely, if not certain.

RAILWAYS IN CHINA.

most promising fields for railway enterprises that still change is by no means slight. and afterward. See the pecuniarily interested in its results.

See transformation. But the change has not come, and inspiring the enginemen with zear for fuel saving trait. See the pecuniarily interested in its results.

gard it as possible until some years have passed. Her Those who are familiar with the character of the contact with western methods has not shown them to work performed by the Coast Survey while it was un- be altogether alluring. From experience, the Chinese fortunately, been taken in so often by irresponsible ad-During the administration of these men, the Coast venturers that it is quite possible what we have flat-Survey was looked upon as "out of politics," its work tered ourselves has been an opening wedge may be in reality another nail in closing the doors against us.

It is hard to predict what their course will be. We have allowed ourselves to regard them as a very slow We cannot blame China, if the settlement of this question determines the treatment of our own countrymen within the borders of her empire. To injustice, or at into our territory are received, not with the courtesy and These things must all react upon ourselves. We cannot outrage a nation, however conservative, with im-

happily ended by the recent removal of Superintendent: She will hardly permit Americans to take any part Hilgard under serious and, so far as has yet appeared, in the development of her resources while such serious grivances remain unanswered. A statement has re-Curiously enough, the office of Chief of the Coast cently gone the rounds of the newspapers to the effect Survey having been refused by Prof. Agassiz, of Cam-that several lines of railways had been determined bridge, son of the late eminent scientist, it was turned upon, and that the contracts for materials had been over to a subordinate of the Treasury department, placed in America. It is impossible to find out who, however estimable a man he may be, is unknown: whether the statement is correct or not, but if such to the scientific world, and, it seems, possesses neither contracts have been made, the presentantagonistic atthe experience nor the qualifications which are essen-titude of our country will be apt to defeat their fulfilltial to the control and direction of this important work. I ment. It is difficult to know just what they are doing Few persons outside of the Coast Survey are aware in that conservative empire, for it was only a short of the powerful influence which for many years has: time ago that a prominent English journal stated had arranged with a Belgian firm for the importation The Engineer Corps of the army, it was urged, was of machinery and skilled miners. The statement quently, a railway in actual operation at the present Professors Hassler, Bache, and Pierce succeeded in time. As the outside world is so unsuccessful in keepmaking out a strong case in opposition to this. They ing informed about what has already been done, its were able to show, with at least sufficient force to confailure to obtain the secret of what the Government vince those who had the power to make the change proposes to do in the future is hardly remarkable. It asked for, that a special training was required to ac-requires, however, more than even the reputed amount curately and intelligently perform the work of the Sur- of American assurance to believe that China will pervey, and that those engaged inits conduct should be at imit a people who have insulted and assassinated her least temporarily removed from the influence of "red own citizens to take any part in her contemplated im-

Economy of Fuel.

There is no question that the application of many be made to do the work now done by a greater quantity, and there might be many improvements intro-But the standard of excellence established by the duced that would reduce the temperature of the effect of structural changes proposed with the view of Once let the old time reputation of the service lessen promoting economy of heat. But there ought to be it seems now to be on the wane—and its mergence no room for difference of opinion about the desirability effected are the introduction of the means of keeping an accurate record of fuel cousumed. It is merely a slight change of method to keep the record of fuel co Engineers and capitalists have for some time past sumed and work done by enginemen instead of engines, regarded the Celestial Empire as offering one of the but the curtailment of waste that results from this

remains unoccupied. They have manifested, conse-: There is no line of economy in railway management quently, a very strong desire to possess it. A dense at the present day that promises results equal to that population and large natural resources give undoubted of stopping the rushing leaks resulting from senseless assurance of success, could the officials who guard the waste of fuel in locomotive firing. We know of no plan imperial conservatism once be propitiated. But this is that will stop the leakage so effectually as the introducan obstacle which the most importunate diplomacy has tion of the premium system of coal accounts. Putting not yet succeded in overcoming. If one glances at the on traveling engineers well acquainted with the proper later history of China, however, her unwillingness to methods of firing and fuel saving might do some good of the Heart in Motion and of Peristalis.—ByWM.GIIMANTHOMPson.—A rabbit's heart in motion.—A pigeo's heart.—Frey's
heart.—Cat's heart in motion.—A pigeo's heart.—Frey's
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Hater history of China, however, her unwillingness to methods of firing and fuel saving might do some good heart.
Hater history of China, however, her unwillingness to methods being heart.—Frey heart. 8576 entertain any foreign propositions, without very care- if these engineers would insist on their methods being is about to throw off her orientalism, and to become have been brought up to, and which takes no thought in effect an annex to Europe, as far as the adoption of of any higher duty than that of getting over the road western civilization and methods can produce such a comfortably. The proper and only effectual mode of transformation. But the change has not come, and inspiring the enginemen with zeal for fuel saving is to