

is easier in its motion and less destructive to the track and roadbed than one in which the center of gravity lies several feet nearer the rail. No. 999 was provided with a heating surface of nearly 2,000 square feet, or about double that of the average English express locomotive at the time when she was constructed.

The obvious advantages of the large boiler capacity of American locomotives were not lost upon English engineers, and two or three years ago Mr. Drummond designed for the Caledonian Railway a powerful engine, the boiler high above the wheels, whose total heating surface was about 1,500 square feet. Following the lead of this design, other roads, such as the Great Western, the Southwestern, and the Great Northern, brought out some very handsome engines, in which the heating surface has been raised as high as 1,600 square feet, the cylinder capacity in every case being increased in proportion. One of the latest and most successful of these designs is illustrated on another page. We think it is questionable whether such engines as the one in question and the powerful four-cylinder engine recently built for the Southwestern Railway by Mr. Drummond have not about reached the limit of size obtainable on English roads. Hence the rapid increase in size and weight of English rolling stock makes it evident in the course of time the problem of providing sufficiently powerful locomotives will be a difficult one to solve.

ANNUAL MEETING OF THE SOCIETY OF NAVAL ARCHITECTS AND MARINE ENGINEERS.

The annual meeting of the Society of Naval Architects and Marine Engineers took place on Thursday and Friday, November 10 and 11, in the building of the American Society of Mechanical Engineers, 12 West Thirty-first Street, New York city. In view of the excellent list of papers to be read before the society, many of them bearing directly upon the operation and lessons of the recent war, there was an unusually large attendance of members. On the first day the meeting was called to order by President Clement A. Griscom, who delivered an address in which he paid tribute to the designers and builders of the American ships in common with the officers and men who had fought with such brilliant results. He expressed the opinion that our acquisition of distant territory would have a stimulating effect upon our shipbuilding industry, and that it was possible that it would prove the turning point from which we should rise to our former proud position as one of the leading shipbuilding countries of the world.

Assistant Naval Constructor Lawrence Spear read a paper on "Bilge Keels and Rolling Experiments, U. S. S. 'Oregon,'" in which he gave some interesting information as to the effect of placing bilge keels on this vessel. Naval Constructor Bowles read a paper by G. W. Dickie, manager of the Union Iron Works, of San Francisco, on "Torpedo Boat Destroyers for Sea Service, with Special Reference to the Conditions that Prevail on the Pacific Coast." Questions raised by this paper were taken up in connection with the topical discussion on "The Utility of Torpedo Boats, and Has the Submarine Boat a Place?" Communications were read by Secretary Bowles, from officers who had commanded some of the torpedo boats during the war, who claimed that the boats were of great utility, but were handicapped by an insufficient complement of officers and men accustomed to this form of service. An interesting and valuable paper was that read by F. M. Wheeler on the "Steam Economy Test of a Unique Form of Feed Pump."

On the second day of the session the following papers were read: "The Steam Yacht as a Naval Auxiliary," by William P. Stephens; "Designs of the New Vessels for the United States Navy," by Chief Constructor Philip Hiehorn; "Methods of Testing Water-tight Bulkheads in United States Navy," by Assistant Naval Constructor H. E. Smith, U. S. N.; "Tests of the Strength of a Longitudinal Bulkhead Separating Two Engine Rooms," by Naval Constructor J. J. Woodward, U. S. N.; "An Electrically Operated 150 Ton Revolving Derrick," by Walter A. Post; and the "Stability of a Battleship under Damaged Conditions."

Commencing with the next issue of the SCIENTIFIC AMERICAN SUPPLEMENT, we hope to publish a series of the above papers.

COMMISSION TO REVISE THE PATENT AND TRADEMARK LAWS OF THE UNITED STATES.

A commission has been appointed by the President, under an act of Congress, to revise and amend the laws of the United States concerning patents, trademarks, and commercial names, to the limited extent of their interference with the Convention for the Protection of Industrial Property, and the agreements under such convention for the prevention of false indication of origin, and for the international registration of trademarks.

The active duties of the commission, in respect of amending the patent laws, are therefore very limited; but the provision as to the report of the commission is very broad, and enables them to accompany their re-

port by references to such treaties and foreign laws relating to patents, trade and other marks, as may affect the citizens of the United States. The commission, therefore, have the widest latitude for instruction and information to the inventors of the United States.

They have issued a letter addressed "to citizens of the United States interested in inventions and trade marks as related to foreign commerce," which raises a multitude of questions of interest to our people, and which, if properly answered, will enable the commission to make a report of the greatest interest and value.

The letter does not show any bias on the part of the commissioners for or against any particular side in the discussion of the desirability of patent laws by the people of this country, but on the contrary would seem to indicate the bringing together of all the questions which may be raised for the amelioration of our present patent system.

We think that the plan of action adopted by the commission is highly commendable, seeing that it will place them in close touch with the needs and wishes of the great body of inventors and manufacturers who are immediately concerned in the questions at issue. If the commission had drawn up, on its own initiative, a series of amendments that might or might not have commended themselves to the interested public, they would not have worked with such a comprehensive grasp of the problem as they will after the various meetings have been held and the inventors and manufacturers have had an opportunity to discuss the matter in the form of a series of questions or suggestions, as written down in the letter "to citizens of the United States" above referred to.

In pursuance of their policy the commission are holding a series of meetings in the principal industrial centers, to which they are inviting the attendance of inventors, merchants, and manufacturers. The first meetings, held in Chicago on Thursday, Friday, and Saturday, October 6, 7 and 8, were largely attended, chiefly by the members of the Patent Bar Association. Addresses were delivered by Lysander Hill, Judge L. L. Bond, James H. Raymond, Robert H. Parkinson, President of the Patent Bar Association, Lewis K. Gillson, Arthur Steuart, of Baltimore, Paul Synnestvedt, Ephraim Banning and Mr. Pierce.

Mr. Francis Forbes, one of the commissioners, attended a meeting of the Association which was held in St. Louis on October 10, 1898, at the invitation of the Association, and explained the operation of the International Convention, and received suggestions in regard to alterations in the patent laws which would remove existing disabilities under which the various branches of business represented at the meeting were laboring.

The open letter or invitation before referred to has been sent out to the extent of 5,000 copies by one manufacturing association alone in this city, and it is to be hoped that there will be a large attendance by those whose interests are affected. The forthcoming New York meetings will be held at the United States Court rooms in the Post Office building in New York at 10 A. M. on November 19 and 21. These will be followed by a meeting at the Patent Office in Washington on November 22.

The Convention for the Protection of Industrial Property requires in general terms (art. 2) that the citizens of one member of the union created by it shall enjoy in another all the rights which the citizens of the latter enjoy in regard to patents for inventions, trademarks, and commercial names. The open letter of the commission submits a series of questions from which we select the following:

What advantages do the laws of the United States accord to its citizens which the citizens of other members of such union do not "enjoy"? It is pointed out that our patent laws grant the right to file caveats to citizens of the United States only, and the question is asked: "Is this a right which citizens of other members of the Union for the Protection of Industrial Property are entitled to enjoy under the convention?"

We think that as long as the filing of caveats is practiced in this country, there can be no question of the advisability of granting to foreign inventors the same right, should they wish to exercise it. It should be borne in mind, however, that the advantage of filing a caveat is open to some question, and that some practitioners advise against this step, except in certain limited and special cases.

Regarding the "date of invention," the circular calls attention to the fact that in interference proceedings before the Patent Office, the foreign applicant is allowed to carry back the date of his invention to the date of publication of his foreign patent, or of his disclosure in this country, and not to the date of filing his application abroad. It is asked whether this rule should be changed by statute?

It is evident that the foreign applicant is here placed at a great disadvantage as compared with an applicant in this country.

Regarding the application for and obtaining of a

patent by a foreign executor, the circular asks, "Should it be provided by statute, that in case of the death of a foreign inventor the executor or administrator authorized to act by a foreign court having jurisdiction of the estate of the deceased inventor, should be permitted to apply for and obtain the patent for the invention of such foreign inventor?" As matters now stand, the foreign inventor is at a disadvantage owing to the fact that a foreign administrator has no standing in our courts. Should an applicant die during the prosecution of his application, his estate is put to the trouble and expense (the latter amounting to about the usual cost of obtaining the patent) of having to take out ancillary letters of administration.

Regarding trademarks, the circular states that each member of the union agrees that "every trade or commercial mark regularly deposited in the country of origin shall be admitted to deposit, and so protected in all other countries of the union;" and the following questions are asked: "Is a national law, which shall be enforceable irrespective of the State laws of the several States of the United States, required by the convention? Must such a law, if granted, allow of the registration of every foreign mark, duly registered abroad, except such as are contrary to morals and to public order? Should the Tariff Act of 1897 be amended so as to afford to manufacturers of other states of the union the same protection that it affords to domestic manufacturers?"

Under the head of "Consideration of Special National Features of Patent Laws" the most important question brought up for consideration is as to whether a provision should be inserted in the law forbidding the grant of a patent in the United States in the case of the prior application for and grant of a foreign patent for any other invention than that for which said foreign patent was granted? The case of Germany (Germany is not a member of the union) is a familiar illustration of the inequality that exists in this particular. If a citizen of the United States or a German subject applies for a patent in Germany for a new chemical combination, the German government allows the grant of a patent for the process only. "Should a German citizen, therefore," the circular asks, "be granted a patent in the United States for both the process and the new chemical combination produced by the process?"

The broad principle of equality which underlies the whole movement of the Protective Union commends it to the people of the United States, and we sincerely hope that the effort on the part of the Revision Committee will be met by a prompt response on the part of the industrial interests in New York city and vicinity.

DEATH OF D. A. WELLS.

David A. Wells, who was widely known as a writer on economics, died at his home, Norwich, Conn., November 5, 1898. He was born in Springfield, Mass., 1828, and was a lineal descendant of Thomas Welles, Governor of the Colony of Connecticut from 1655-58. Mr. Wells graduated from Williams College in 1847 and became assistant editor of the Springfield Republican. He invented the first successful machine for folding newspapers and books. Journalism did not appear to be to the liking of Mr. Wells, and, as he realized a sufficient sum from the sale of his invention to render him independent, he abandoned newspaper work and took a special course at the Lawrence Scientific School of Harvard. He graduated from this school in 1852, and received an appointment as professor in the school. At the close of the civil war Mr. Wells was brought prominently into public life by his writings on economical subjects. His essay, "Our Burden and Strength," was received with enthusiasm in the Northern States. President Lincoln sent for Mr. Wells in 1865 to confer with him as to the best methods of dealing with the enormous debt which the war had accumulated. In March of that year Congress created a commission of three persons to inquire into the subject of raising by taxation such revenue as was necessary to supply the wants of the government. Mr. Wells' work so impressed Congress that, in 1866, an act was passed making him "Special Commissioner of Revenue." Most of the laws passed between 1865-70 dealing with the whole system of revenue laws were passed at Mr. Wells' suggestion. In 1865 Mr. Wells made a trip abroad to investigate forms of competitive industry with a view of drafting a new tariff. The result of this visit was to change Mr. Wells' views from strong protection to free trade, and on his return he began an aggressive campaign against what he termed "existing evils in the system of revenue taxation." Since that time Mr. Wells devoted his attention largely to writing on economic subjects, and has held positions as a State commissioner for investigating laws relating to legal taxation.

The best locomotives on steam lines weigh 154 pounds per h. p., but on an electric traction line at Baltimore, which was opened in 1895, the electric traction locomotive weighed 126 pounds per h. p. These locomotives weigh 90 tons, and develop 1,600 h. p., distributed on six independent driving axles.