

Scientific American.

ESTABLISHED 1845

MUNN & CO., - - - EDITORS AND PROPRIETORS.

PUBLISHED WEEKLY AT

No. 361 BROADWAY, - - NEW YORK.

TERMS TO SUBSCRIBERS

One copy, one year, for the United States, Canada, or Mexico..... \$3.00
 One copy, one year, to any foreign country, postage prepaid. 20 lbs. 50c. 4.00

THE SCIENTIFIC AMERICAN PUBLICATIONS.

Scientific American (Established 1845)..... \$3.00 a year.
 Scientific American Supplement (Established 1876)..... 5.00
 Scientific American Building Edition (Established 1885)..... 2.50
 Scientific American Export Edition (Established 1873)..... 3.00

The combined subscription rates and rates to foreign countries will be furnished upon application.
 Remit by postal or express money order, or by bank draft or check.

MUNN & CO., 361 Broadway, corner Franklin Street, New York.

NEW YORK, SATURDAY, JANUARY 20, 1900.

LEGISLATIVE FOOLISHNESS.

More often than not, when our legislators undertake to improve the patent laws, they lend themselves to proposals which are grotesque in theory, and if they ever became law, would be impossible of practical application. Members whose legislative proposals are ordinarily, if not invariably, marked by good judgment and clear-headed common sense, have a way of committing themselves to the most crude absurdities when they introduce bills for the improvement (Heaven save the mark!) of the statutes which govern that most successful institution known as the United States Patent Office.

Why the amendment of patent laws should beget such an annual crop of foolishness is quite beyond our ken; it is a curious phenomenon which we commend to the X-ray insight of the psychological expert.

We have before us the draft of two bills, one, No. 269, introduced in the Senate, and the other, No. 2941, in the House, that betray the usual ignorance of the true purpose of our patent laws, which is, we take it, to keep alive and promote the spirit of invention by securing to the inventor his just and proper rewards. One of these bills, as we shall see, would rob the inventor of his profits altogether; and the other would make the realization of his profits so precarious as to discourage ninety-nine men out of a hundred from making any application for a patent whatever.

The Senate bill contains the following: "No patent shall be granted . . . upon any device adapted to be used in the treatment of human disease or disability, or attached to the human body and used as a substitute for any lost part thereof, . . . unless such device is adapted to be put on the market and sold substantially complete and ready for use or attachment." Now, while we are willing to admit that the framer of this bill may have been actuated by the best of motives, as a matter of fact, it would, if passed, defeat the very object at which it aims. We are well aware that there is a widely extended prejudice against the medical profession taking out patents upon special medicines, or upon mechanical appliances to assist the crippled or injured, and we fully appreciate the professional spirit which begets this prejudice. But as a matter of fact the production of artificial limbs, belts, trusses, and various aids of the kind, is not confined to the profession; the larger proportion of these devices being invented by laymen, or by firms who make a specialty of their manufacture. The invention of artificial limbs and surgical appliances is of a strictly mechanical nature; and the pecuniary reward which the Patent Office enables the inventors to reap is a powerful incentive which, as the result shows, assists greatly in mitigating the sufferings of the crippled and infirm. To deny patent protection would undoubtedly discourage invention and reduce the number of workers in this important field. The motives which prompt the bill may be praiseworthy; but the practical effect would be decidedly harmful, and certainly the very reverse of that intended.

Even worse in principle is the proposal contained in the last clause of the bill, to the effect that "no suit or action shall be maintained for the infringement of any patent, unless it appears that such device can be made and put upon the market substantially complete and ready for use or attachment." The purpose of this amendment is plainly retroactive, and its effect would be to rob thousands of citizens of property rights which have been deliberately granted to them under the law. Holders of patents, assignees, and purchasers of royalties, who have paid large sums for privileges conferred under the existing statutes, would find their holdings, upon the passage of such an amendment, worth not even the paper upon which they were written. This bill, if it ever emerged from the committee and should by accident receive the sanction of Congress, would be manifestly unconstitutional.

Bad as is the Senate bill, that introduced in the House is worse; for while the former reduces the number of inventions which may be patented, the lat-

ter jeopardizes the commercial value of every patent that may be granted. If the introducer of this bill has his way, the present practice and methods in the securing and handling of patents will be turned completely upside down—as witness the following comprehensive and brilliantly original provisions: 1. The inventor when applying for a patent must file with the Commissioner a sworn statement of his estimate of the cost of manufacturing his article, machine, device, etc. 2. The Commissioner from this estimate will fix the amount of royalty to be paid on each article, machine, etc. 3. This royalty must be not less than 1 or more than 10 per cent of such estimated cost of manufacture. 4. Any person or corporation shall, upon payment of this royalty, have the right to use, manufacture and sell the article, etc., so patented, provided he or they attach to the article a stamp or certificate certifying that the royalty has been paid. 5. The United States government reserves the right to condemn such patents for its own use.

We ask: 1. How can the patentee estimate the cost of manufacturing an article which exists as yet only upon paper, and will be the subject of many successive patents before it reaches its perfected form. Even if the distracted man should hazard a guess, unforeseen difficulties of manufacture may arise that will make the cost ten times greater than he thought. 2. By what God-given fore-knowledge is the Commissioner to determine the extent of these risks, and so fix an equitable royalty? 3. Why should the royalty never be less than one—why should it never exceed 10 per cent of the cost? 4. From time immemorial men have been wont to sell their goods or not sell them as they liked. From what new system of ethics has the framer of this bill learned that this time-honored prerogative is vicious and calls for correction? 5. Why should the United States government be empowered to take away with the left hand what it has given with the right?

It is refreshing to turn from such legislative trifling to Senator Hansbrough's really excellent bill, No. 1,883, to establish "a high court of patents, trade marks, and copyrights, which shall consist of one chief justice and of six associate justices; to be appointed by the President of the United States, by and with the assent of the Senate, and which shall be a court of record with appellate jurisdiction." If this admirable bill, to which we shall refer at some length in a later issue, become law, all appeals by writ of error or otherwise from district courts shall not be taken to existing circuit courts, but shall be subject to review only in the Supreme Court of the United States or in the high court of patents, trademarks, and copyrights as thus established.

OFFICIAL TRIAL OF THE UNITED STATES CRUISER "ALBANY."

Special interest attaches to the reports of the official trial of the "Albany" which have just come to hand, for this vessel is a sister ship to the "New Orleans," which has been the subject of a large amount of unjust official criticism since her arrival in this country. It has been freely charged by our Construction Department that the "New Orleans" is a "show vessel" built by the Armstrong Company "to sell;" that her stability is seriously in question; that she has poor sea-going qualities; and that she is unable to come within several knots of her reputed speed. The "New Orleans" and the "Albany" were purchased during the recent war from the Brazilian government, for whom they were being constructed by the Armstrong Company. The "New Orleans" was delivered immediately, and the "Albany," after some slight modifications of her interior arrangements, was completed with all possible dispatch. The ships are sister vessels and practically identical in every respect.

When the most extraordinary charges of our Construction Department against the stability of the "New Orleans" were made known to Armstrong & Company, extensive stability tests were at once made of the "Albany," which showed she is not only a thoroughly stable vessel, but actually has a larger margin of stability than certain vessels already in our navy; and as for her speed, the recent trials, which were carried out under the supervision of a United States Naval Board consisting of Lieutenant-Commander Colwell, Chief Engineer Norton, and Naval Constructor Gilmore, showed that the "Albany" is capable of a speed in excess of the contract requirements, and that she is thoroughly seaworthy. On the four trials over a measured mile a mean speed was recorded under natural draught of 19.6 knots, or 0.6 knot above the contract. Under forced draught her mean speed was 20.5 knots, with a maximum speed of 20.87 knots, her contract speed under these conditions being 20 knots. Lieutenant-Commander Colwell expressed himself as greatly pleased with the ship, stating that she came fully up to all requirements. A day or two later the vessel was sent out for her endurance trials, which consisted of a continuous run of 6 hours under natural draught. The ship behaved well in a heavy sea, and the results were as follows: Speed per hour, 19.3 knots; horse power, 5624; and consumption of coal per 24 hours, 144 tons. These trials are a case of "a fair field and no favor,"

and that such excellent results, especially in the natural draught endurance trials, should have been recorded, will settle, we trust, for good the question of the speed of these splendid vessels.

Although the results of these speed trials are highly gratifying, they are not phenomenal. In every navy of the world except our own similar speeds are being aimed at and achieved in vessels of this class. In the United States navy, unfortunately, we have gone back a decade and a half in the matter of cruiser speed, the contracts having just been let for the construction of six cruisers of the "Albany" type whose maximum speed is to be only 16½ knots.

The only reason that the gentlemen who are responsible for the design of these ships have given for knocking off 4 knots from the speed, is that two high-powered 20-knot cruisers that they designed ("Raleigh" and "Cincinnati") were failures; to which the obvious reply is that if our failures are to determine the standard of our future efforts, the outlook is decidedly discouraging.

To argue that because the "Raleigh" and "Cincinnati" failed to maintain their designed speed in actual service, therefore the contract speed of future cruisers must be reduced, is a confession of failure which is at strange variance with the traditions of a navy, which in the originality and progressive spirit of its work has been accustomed to lead rather than to follow.

THE ISTHMIAN CANAL.

The problem of constructing a canal across the Isthmus of Panama grows more interesting and certainly more complicated as the days go by. The latest development is that the American attorneys of the French Panama Company state that a company has been formed of several of the leading financiers of this country for the purpose of going ahead and completing the canal at Panama with private capital. It is stated that \$100,000,000 bonds will be issued and that the corporation will increase its capital to \$120,000,000 in order to complete the work. On the other hand, we have the Eyre-Cragin concession, which was obtained about twelve months ago from the Nicaraguan government, for the construction of the Nicaragua Canal. This concession was obtained on behalf of a New York syndicate, which declares that it has the ability and willingness to go ahead and construct a canal with its own capital. Meanwhile the Maritime Canal Company, of Nicaragua, which has done a considerable amount of surveying, and an inconsiderable amount of construction along the Nicaragua route, is endeavoring to enlist government influence in securing a renewal from Nicaragua of its concession, which has lapsed owing to the Company's failure to complete a canal within the specified time.

A fourth influence which is at work is represented by certain of our legislators, who will again attempt to crowd through Congress some measure authorizing the government to build the Nicaragua Canal and to set about it at once, regardless of the advantages or prospects of any other scheme for canal building, either at Nicaragua, Panama or elsewhere. Mr. Hepburn is again at work upon a bill of this character—and this, moreover, in spite of the fact that the President's own commission, which was sent out at a cost of a million dollars to find out the real truth about the situation, and determine on the best location of the canal, has not yet reported.

It seems to us, and it must be evident to every person who uses a little sober judgment on the question, that the obvious course of the government is to await the report of its own commission before taking any steps whatever in the matter. If the American Panama Canal Company is able and willing to take hold of that unfortunate enterprise and push it to completion, well and good. We can conceive of no better solution of the problem.

AMERICAN GOODS IN RUSSIA.

American goods and specially American manufactured articles are making rapid gains in popularity in Russia. This is shown by the increased total of our exports to that country, and also by the warnings which the consular representatives of other nations in Russia are sending to their home governments respecting the popularity of American goods and the success of American merchants in their business methods. The British consul at Kieff reports that while Germany is talked about as Great Britain's greatest rival in the markets of the world, there does not seem to be the same attention paid to the rapidly developing competition of America, and gives many instances, citing the agricultural machinery trade, which is practically controlled by Americans; also steam pumps and machine tools. The British consul at Odessa says that bicycles of English make are held in high esteem, but they are distanced by American machines, as they are supplied 40 per cent cheaper than those of the English make, and consequently undersell them. In 1893 exports from the United States to Russia amounted to \$2,447,414, according to the reports of the Treasury Bureau of Statistics, and in 1899 the value of the exports was \$10,023,783.