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(Illustrated articles are marked with an asterisk.)

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THE COMMAND OF THE SEA.

In his classic work on the influence of sea power in history, Captain Mahan has shown that the command of the sea has been the decisive factor in most of the great wars of the past, and there is no reason to doubt that history will repeat itself in this respect in the event of hostilities between this country and Spain. In the present case, moreover, there will be new factors due to the change from sail to steam power entering into naval warfare which will, we think, render the command of the sea of even greater importance than it was in the days of Nelson. Chief among these is the coaling question—undoubtedly the most vital consideration that confronts the admiral of a modern fleet. In the last century it was possible for a fleet to lay in stores and provisions, extra spars, sails and running gear, sufficient to last for a cruise of many months—to-day we doubt if it would be possible for any navy to gather together a fleet which could keep the sea for twenty-one consecutive days without touching at a coaling station to replenish its bunkers.

The question of coal supply is a serious one at any time, and it can readily be seen that in the event of hostilities between two nations which are separated by three thousand miles of water, like this country and Spain, the question easily becomes first in importance. The navy that elects to place the wide Atlantic between itself and its coaling base will carry on its campaign under an enormous disadvantage. Not only must it maintain a line of coaling ships, but these ships must be convoyed across the water, to which duty a not inconsiderable number of its fighting ships must be assigned. Moreover, to make certain of the transfer of the coal to the fleets, some sort of coaling port must be established, for coaling at sea is both slow and hazardous and only capable of being carried out in fairly smooth water.

As the case now stands, Spain possesses two coaling stations in the West Indies, one at Havana and another at Porto Rico, and as Cuba would presumably be the objective point of both combatants, it is reasonable to expect that Spain would send her fleet to Cuban waters and endeavor to strike a decisive blow in a general fleet engagement. Should she be successful in this, however, she would still be under the necessity of convoying her coal ships across the Atlantic, a task which she could not hope to accomplish successfully in the face of the numerous and powerful auxiliary fleet which we shall soon have at our disposal.

On the other hand, it is quite possible that Spain may choose to place the burden of keeping open a three thousand mile line of communication upon our navy, temporarily surrendering Cuba and Porto Rico, and choosing her battle ground on the eastern side of the Atlantic. If she does this, there is no denying that we should fight at a great disadvantage, and the success of our fleet would be more problematical.

One of our first objects, if we did not rest satisfied with the acquisition of Cuba, would be to secure a base of operations within reach of Spain itself, where coal might be stored and as much refitting as did not involve a visit to the dry-dock carried out. The Canaries would furnish such a base, and it is likely that a collision between the fleets would occur in the vicinity of these islands. If we encountered the full force of the Spanish fleet, it is not to be supposed that our ships, even though victorious, as we think they would be, would come scathless out of the fight. The Spaniards are strong in torpedo boats, and we might even lose a ship or two in the general melee. It is likely, in any case, that the victor in a modern fight will be a ripe subject for the dry-dock and navy yard. If so, this would necessitate part of the victorious fleet limping home for repairs before it could follow up its advantage. This, in itself, would be a perilous trip, for shot-holes at the water line, or a few feet of the outer bottom ripped up by a glancing blow from the ram of a battleship, would not improve the chances of a ship surviving such weather as the San Francisco and the New Orleans encountered on their recent passage.

Of course we should win the struggle; but just how long it would last, or what it would cost us in men and ships, is a question that would be determined by the degree to which a nation driven to bay would prolong the despairing struggle.

RATHER SMALL BUSINESS FOR THE GOVERNMENT.

We are in receipt of a monthly magazine which is carried without charge through the mails of the country, and bears the imprint of the great United States Government Printing Office, at Washington, where it is printed at the public expense. This magazine has about 100 pages of paid advertisements, from soaps, toilet articles and cough medicines to plows and whisky distilleries. Of the magazine itself it is hardly worth while to speak seriously, its sparsely filled reading pages being made up mostly of matter such as is usually furnished in the government consular reports, with an occasional rehash of a subject more capably treated in the public press, all printed in French, Spanish and Portuguese, as well as in English.

As to the origin of this anomalous publication, it may be said that, at a session of a so called International American Conference, held at Washington, in 1890, an association was formed of which an organization bearing the style of "Bureau of American Republics" has since been the representative, for the ostensible purpose of disseminating special information likely to increase commerce between the several American republics. Such a cause is certainly a legitimate and perfectly laudable one. At first the publications of the bureau were in the nature of free handbooks, but their subsequent development into trade directories and a monthly magazine in which advertisements were published for pay, all expenses of publication being paid by the government, has called out an indignant protest from the trade and technical publications of the country, with whose business the government itself is thus brought into a direct and most unfair competition.

Complaints to the State Department and to high government officials having failed to put a stop to this unworthy business, we are glad to learn that bills, designed to terminate this procedure, have been introduced in Congress. These bills make it "unlawful for any person, firm, corporation or association to print upon or attach to the United States flag any business advertisement, and for any department bureau, officer, or employe of the United States government to print upon or attach to any official publication of the United States government, or any publication permitted to circulate through the United States mail under frank, any business advertisement, or to use such publications in any way as advertising mediums."

The obvious propriety of such legislation is hardly open to question, but we doubt whether it goes far enough, for, among the publications of the bureau is a "Commercial Directory," competing equally with the legitimate field of private publishers, and of which a first large quarto volume has appeared. It is announced that, in this directory, "the advance subscribers [$5 each] will appear under the proper headings in the United States section," but "subscribers desiring more than one heading will be accommodated at the rate of $5 for each additional classification."

Of course, it is impossible in any such directory, no matter how voluminous, to include all the names in even the leading departments of business, and, to have the directory of any value, selections of names should be made by competent and unbiased judges; but it would appear, from the announcement of the bureau, that the most insignificant houses or persons may find a place in its pages, and such houses may have their names introduced as many times as they please at the rate of $5 for each insertion. And this directory is to be put forth in annual editions, under the authority of the United States government!

It is surely inconsistent with the objects, aims and traditions of the government of the United States to engage in commercial enterprises in competition with its own citizens. Such a course would lead to the grossest abuses, and there is no more reason why the government should engage in an advertising business than that it should establish manufactories for the production of flour or sugar, or cotton or woolen goods. It is wrong in practice and wrong in principle, and it is to be hoped that the relief sought for in the bill will be promptly accorded by Congress.

NEGOTIABLE PAPER FOR PATENT RIGHTS.

The substantial re-enactment of the "Negotiable Instruments Law," passed at the last session of the New York Legislature (Chap. 612, Laws of 1897), of the practically obsolete statute of 1877 requiring the insertion of the words "Given for a patent right" in negotiable instruments taken therefor, seems unnecessary at the present day and inharmonious with the progressive spirit of the new law, but it serves as a forcible reminder of the notorious patent right swindles which first called legislation of this character into existence. The evil reached its height, and indeed may be said to have had its life, in the Middle and Western States during the period of prosperity and wild speculation which followed the civil war. The most glaring frauds were committed; large sums were paid for rights under void and worthless patents; patent rights for the same territory were sold over and over again; notes were taken to facilitate the sales, immediately discounted, and, by the time the purchaser discovered the deception, were in the hands of bona-fide holders, enforcible against the maker. The courts were powerless to protect the victims of these and other similar impositions, and the State Legislatures were finally appealed to for relief, with the result that in 1868 Ohio passed an act which required any person, before offering for sale a patent right for any county, to submit the patent to the probate judge of the county and make affidavit before him that the patent was in force and that the applicant had the right to sell, and also requiring that any written obligation taken on the sale of such right should bear on its face the words "Given for a patent right." Failure to comply with the law was made an offense.

That this statute in its entirety was of doubtful propriety seems to have been realized, for within a year

the provision requiring the making and filing of proofs was repealed. But the legislation was of the infectious character, and the Ohio statute in substantially its original form was made the law of Indiana and Illinois in 1869, of Minnesota in 1871, and of Nebraska in 1873, Kansas following their example as recently as 1889, while the law as amended in Ohio, requiring only that written obligations given for a patent right should bear such statement on their face, was passed by the legislatures of Vermont in 1870, of Michigan in 1871, of Pennsylvania and Wisconsin in 1872, of New York and Connecticut in 1877, and of Arkansas in 1891.

In the litigation which promptly followed the enactment of these statutes their constitutionality was assailed vigorously, and at first with uniform success. The first decision of importance was rendered in 1870 by the Hon. David Davis, then an associate justice of the Supreme Court of the United States, in *Ex parte* Robinson (2 Bissell 309), on a petition for a writ of *habeas corpus*. The petitioner had been arrested under the Indiana statute for offering a county right for sale without having first filed a copy of the patent and proofs required by the law. The ground of the petition was the invalidity of the statute, and Justice Davis held that the enactment was an attempt to prohibit the sale of patent rights, if the directions were not complied with, and to throw burdens on the owners of such property which Congress had not seen fit to impose upon them; that Congress under the authority given to it by the Constitution had directed the manner in which patents should be assigned and sold; that property in inventions existed by virtue of the laws of Congress and that no State had a right to interfere with its enjoyment or annex conditions to the grant; that a patentee had the right to go into the open market anywhere in the United States and sell his property; that, if this were not so, a State might impose terms which would prohibit any sale, and thus nullify the laws of Congress and destroy the power conferred upon it by the Constitution; and that the law in question attempted to punish by fine and imprisonment an act which the national legislature had authorized, and was therefore void, and the petitioner was discharged.

The Supreme Court of Illinois, in 1873, of Minnesota, in 1876, and of Nebraska, in 1883, following the decision in *Ex parte* Robinson, declared that statutes substantially the same as that of Indiana were void (Hollida v. Hunt, 70 Ill. 109; Crittenden v. White, 23 Minn. 26; Wilch v. Phillips, 14 Brown, Neb. 134); but in 1885 the Supreme Court of Indiana decided that the authority of *Ex parte* Robinson had been overthrown by the Supreme Court of the United States, in 1878, in Patterson v. Kentucky (97 U. S. 501), and overruling its own previous decision (Helm v. First National Bank, 43 Ind. 167), in which the section of the act relating to negotiable instruments was declared void, sustained the section of the statute requiring the filing of proofs (Brechbill, v. Randall, 102 Ind 528), and this decision was followed in the later Indiana cases, New v. Walker (108 Ind. 366) and Sandage v. Studebaker (142 Ind. 148), and also in Kansas (Mason v. McLeod, 57 Kansas 108).

The conflict between these authorities is direct and irreconcilable. The statute has been sustained by the Supreme Courts of Indiana and Kansas, but it has been declared invalid by courts of equal standing in Illinois, Minnesota and Nebraska, as well as by the Federal Court in Indiana. The weight of reason and of authority are decidedly against the validity of the statute. It cannot be denied that a law which requires the owner of a patent right or his agent to appear personally before an official in every county of the State, and make and file with him an affidavit and a copy of his patent before offering to sell a State right, is an onerous restriction upon the enjoyment of the property right secured to him by Congress. Nor can it be properly said that the offering of a patent right for sale honestly and fairly, irrespective of the character of the patent, is *per se* an act so harmful to the welfare of the community as to justify its prevention or regulation by the exercise of the police power of the State. It is true that the Supreme Courts of Indiana and Kansas have decided otherwise, but these decisions are both based upon the erroneous propositions first enunciated in Brechbill v. Randall (supra), that the Supreme Court of the United States, in Patterson v. Kentucky, held that the sale of the incorporeal rights granted to a patentee may be regulated by a State under the proper exercise of its police power, and that the same case overruled *Ex parte* Robinson. What the Supreme Court did hold was that the prohibition of the sale of an illuminating oil, which it was admitted could not possibly be made to conform to the State standard of safety, was a proper exercise of the police power of the State, and the mere fact that the oil was patented did not relieve the patentee from a compliance with the State requirements. The court recognized the difference between the incorporeal right secured by the patent and the right to sell the patented article, and expressly decided that the former "may be secured and protected by national authority against all interference." Instead of overruling *Ex parte* Robinson, that decision was tacitly approved.

Quite as serious is the conflict as to the law requiring the insertion in written obligations of the words, "Given for a patent right," adopted by the States of Vermont, Connecticut, New York, Pennsylvania, Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Kansas, Arkansas and Nebraska. It has been declared unconstitutional by the highest State courts in Indiana (since overruled), Illinois, Michigan, Minnesota and Nebraska and by the United States Circuit Courts in the Southern District of Ohio and in the District of Indiana (Helm v. First National Bank, 43 Ind. 167; Hollida v. Hunt, 70 Ill. 109; Cranson v. Smith, 37 Mich. 309; Crittenden v. White, 23 Minn. 24; Wilch v. Phillips, 14 Brown (Neb.) 134; Woollen v. Banker (U. S. Ct. Ct. Ohio) 2 Flippen 33; Castle v. Hutchinson (U. S. Ct. Ct. Ind.) 25 Fed. Rep. 394); while its validity has been sustained by the courts of last resort in New York, Pennsylvania, Ohio, Indiana, Kansas (Herdic v. Roessler, 109 N. Y. 127; Haskell v. Jones, 86 Pa. St. 173; Shires v. Commonwealth, 120 Pa. St. 368; Tod v. Wick Brothers, 36 Ohio St. 370; New v. Walker, 108 Ind. 366; Sandage v. Studebaker, 142 Ind. 148; McLeod v. Mason, 57 Kansas 108). On this point, while the rulings of the courts are more evenly balanced, it is believed that those against the validity of the law preponderate. The Indiana decision (New v. Palmer), followed in Kansas, held that the enactment of the statute was a proper exercise of the police power resident in the State; but, as pointed out, Patterson v. Kentucky, relied upon as authority for this proposition, does not sustain it. The New York Court of Appeals in Herdic v. Roessler (supra) withheld its approval of the Indiana and Kansas doctrine, and, following the Ohio and Pennsylvania decisions, held that, while a State law which interfered with the exclusive right granted to inventors would be void, the New York statute did not interfere therewith, as it operated only upon the thing taken for the right when that was a negotiable instrument. It is true that primarily it does operate upon the thing taken, but it also operates upon the patentee's chance of disposing of his property, and places and was intended to place a restriction upon the free and unrestricted right to transfer it given to him by Congress. That was the sole object and purpose of the law, which says to the owner that he may not, under pain of fine and imprisonment, sell his property, his incorporeal right, and take therefor a promissory note, entitled to the special protection afforded to negotiable paper by the law merchant. If this be lawful, the State may lawfully place its prohibition upon other forms of contract and other descriptions of consideration, imposing terms "which would result in a prohibition of the sale of this species of property within its borders and nullify the laws of Congress."

Until, however, the validity of these statutes is brought before the United States Supreme Court—if that should ever be—their validity must be regarded as finally established, as far as the State courts of New York, Pennsylvania, Ohio, Indiana and Kansas are concerned. That they will be declared unconstitutional and void, if ever brought before the Supreme Court, is hardly to be doubted. That has been the attitude of every Federal judge who has passed upon the question.

SHALL ARTISTS COPYRIGHT THEIR WORK?

One of our architectural contemporaries, in speaking of the decorations of the new Appellate Court House in New York City, has taken the opportunity to criticise American sculptors and mural painters for copyrighting their works. There is also considerable talk concerning the copyrighting of decorations by artists in the Congressional Library, at Washington, as many think that, as the artists were paid for their works by the United States government, they should lose all control over their productions as soon as they had been paid for.

The journal referred to says that it is considered by the people generally "to be a discreditable piece of sharp practice on the part of the artists, for their work was paid for by the public and from the public treasury," and, to encourage great decorative work among the people, reproductions of these decorations should be disseminated as widely as possible. This contention is a one-sided one, and fails to do the artists justice. We have taken pains to consult some of the most eminent exponents of the arts of painting, sculpture and architecture, and they are unanimous in their opinion that their labors should be protected by copyright.

The artist looks at the question from another point of view than the layman. The money received from royalties on reproductions of their achievements is often inconsiderable and is regarded by the artist as a wholly secondary matter. But what the artists do wish is to keep absolute control of the reproductions of their works. Manufacturing concerns are quick to realize the advantage of having artistic advertising matter, and they seize with avidity any design which suits their fancy, provided it is not copyrighted. No artist cares to see the creatures of his brain affixed to a box of cigars or on bottles of patent medicines, and it is unfortunate that some famous American pictures have been treated in such a way.

Artists wish not only to say who shall reproduce their paintings and statues, but how they shall be reproduced. No one would be better pleased than they if good photographs or photo-engravings of their works could be sold for the most moderate prices, as such sales would tend to popularize their work; but in all cases they must be able to approve of the reproductions before they are put on the market. Unfortunately, most of the photographs of works of American masters have been got out in so large and costly a form that their purchase is limited to those in easy circumstances.

Illustrated newspapers frequently desire to present by the half tone process the work of the painters and sculptors. This is, of course, greatly to the advantage of the artists, provided that the reproductions are adequate, and, the works being copyrighted, enable the artists to select such papers as they wish and to pass on the proofs of the engravings.

In architecture there is the same necessity of having the plans and elevations copyrighted. The architects who are building a large religious edifice in New York copyrighted their drawings, thus preventing a representation of the building which they are constructing being used by a cement firm for advertising purposes. Examples where copyright has been beneficial to artists are almost endless, and we can see no reasonable ground for complaint, if they use the means which the law has put at their disposal for the protection of their artistic property.

OUR SPECIAL NAVY SUPPLEMENT.

The great demand for information regarding our navy which has arisen from the present crisis has brought out the fact that although excellent descriptions of the various ships have appeared from time to time, there is yet wanting a concise, accurate and fully illustrated compendium of the United States navy of the kind which the public is just now demanding. In saying this we are, of course, aware that some excellent histories of the navy have been published; but we think that the very wealth of detail which they contain makes them too bulky and perhaps a little too technical to meet the demand of the hour. On the other hand there are publications which contain excellent illustrations, but suffer from a paucity of information.

In the belief that the right kind of work on the subject to meet the present want has yet to appear, we shall publish in a few days THE SCIENTIFIC AMERICAN SPECIAL NAVY SUPPLEMENT. It will commence with a historical review of the period of reconstruction, 1883 to 1898, and following this will be an article explaining by diagrams the various types of warships and their classification. The bulk of the number will be taken up with the description of the typical ships, commencing with the "first line of battle" in the shape of such vessels as the "Indiana" and "Iowa," and concluding with the torpedo boats. Full tables of the ships, guns, dock yards, etc., will be given at the end of the number, and accompanying it will be a beautifully colored map of Cuba, showing its relation to our coast and other islands.

The text and engravings will not be confined to the exterior of the ships; but the internal arrangements, turrets, engines, magazines, steering gear, etc., will be illustrated and described in a clear and not too technical manner.

ELECTRIC MAIL DELIVERY.

In Geneva a novel system for delivering letters in high apartment houses is to be tried. On the ground floor is arranged a cabinet having as many compartments and boxes as there are floors in the house. When a letter is deposited in any box, it makes a contact which rings a bell on the corresponding floor. The bell can only be stopped by the removal of the letter. The same current that rings the bell opens a valve connected with a water tank in the top of the house. Here are located cylinders attached by cords and pulleys to the letter boxes and so arranged that when they are filled with water they will serve to haul up the letter box and its contents to the proper floor. When the box arrives, the letter is automatically dumped into a stationary receptacle and at the same time the cylinder is discharged of its water. The letter box then descends to the lower floor, the bell stops ringing and it remains in position waiting for the next visit of the postman

To mend broken meerschaum proceed as follows: Rub together casein and waterglass to a smooth paste, and add to the same sufficient magnesia to make a white cement, and use at once, smearing both of the broken surfaces before uniting. Press well together and hold in place for a few moments. The paste sets at once, and only sufficient for immediate needs should be made up. White of egg and magnesia are also recommended. We commend, however, the first process, which we have found reliable.—American Druggist.