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#### OUR GREAT AGRICULTURAL SUPREMACY.

The farmers of the United States are now obtaining from other parts of the world more money for the fiscal year which ends with this month than in any preceding year in the history of the country. In 1892 American exports of agricultural products amounted to \$799,323,212, but this will be surpassed by the record of the year which closes with the present month of June. The preliminary reports of the May exportations which have reached the Bureau of Statistics show that the agricultural exports will exceed \$800,000,000, and the total may reach \$835,000,000

Never before have the exports of the agricultural products reached the \$800,000,000 mark, and never but twice have they passed the \$700,000,000 line, the fortunate years being 1881 and 1892. Compared with the last fiscal year, the increase in exports of agricultural products will be fully \$150,000,000, and compared with that they are exaggerated in many instances, somethe preceding year the increase will be over \$250,000,000, i times drawn from untrustworthy sources, and even on while the total will be nearly fifty per cent in excess of that of the fiscal year 1895.

Naturally the export of breadstuffs takes the most prominent place, as they amount to nearly \$1,0.0,000 for each business day, and the total will be more than \$100,000,000 in excess of the last year's exports of lows: breadstuffs. Of wheat the value of the exports of the nearly fifty per cent and of corn nearly fifty per cent in over last year.

a falling off of about thirty-five per cent.

general prosperity of the country.

chandise alone over imports for eleven months being

price of wheat during last season has doubtless reduced head nets. the usual interior and invisible stocks of wheat in this tion. For this reason large crops this year ought not year.

not fail to have a most important bearing upon the material prosperity of this country.

#### PROPER CARE FOR OUR SOLDIERS.

From various sources are echoed complaints of short- these are vital, and we wish the Secretary for War had comings and indifference regarding the treatment of taken them into account, and, if true, even in part, oldiers, both regulars and volunteers afforded some assurance of speedy reform.

have been matters of criticism, the sites being selected without any regard to fitness, whether for health, for facilities in teaching new recruits their duties, or for general military maneuvers; they are often shadeless, the tents (of improper pattern) pitched in the midst of deep sands, with poor and inadequate water supply. The clothing designed for campaigning upon the northern frontier is still required to be worn under a subtropical sun ; the food is of nauseous and improper character, that threatens a speedy outbreak of camp diarrhœa and scurvy. And last, but not least, the treatment accorded, and the surroundings, are those best calculated to break down the spirit and vitality of the individual, and dissipate any enthusiasm and military ardor that may yet linger.

There seems to be a general and well founded suspicion that the charges are not wholly baseless; but occasion formulated as the result of incomplete knowledge of military affairs and exigences, seems probable. Yet, they have had sufficient influence and power to draw from the Secretary for War an authorized if not wholly personal statement, which is summarized as fol-

From May 14 to June 12 the Subsistence Department fiscal year 1898 will be more than double that of the of the army has forwarded 29,123,945 rations weighing fiscal year 1897, while the increase in flour will be 32,180 tons. The Ordnance Department, working under difficulties—since it was necessary to induce private value. Corn meal, oats and oatmeal and rye also show firms to enter upon manufacture involving sometimes a striking increase. In provisions, by which are meant the installation of new machines, tools and the educabeef, hog and dairy products, the total exports are tion of workmen along special lines,—in the same time likely to reach \$160,000,000-a considerable increase has secured constantly increasing supplies of special stores, until now the receipts practically equal the de-Live beef is gaining greatly in popularity with the mand. All batteries have been equipped with six inforeign customers and the exports have increased ma- stead of four guns as heretofore, and the delivery of terially, while beef, either fresh, canned or salted, not small arm cartridges is approximately, or soon will be, only shows no increase, but in most cases there has 700,000 per day, the field gun ammunition being probeen a falling off. The exportation of beef cattle dur- portionate and all of the latest patterns. Up to June ing the first ten months of the fiscal year amounted to 12, also, 51 steamships have been chartered as trans-379,663, against 310,478 in the corresponding months of ports, four more to serve as water vessels, one for last year, while fresh beef in the same period fell from special signal service duties, besides one tug and three 242,168,034 pounds in 1897 to 227,434,373 pounds in the steam lighters, all of which required material overcorresponding ten months of 1898. Salted beef shows hauling and modification to meet the exigences of special service. The first order for mobilization of volun-Agricultural products are by far the largest factor in teers was on May 13, and in no case has unnecessary the exports of this country, but the exports of the delay been reported; on the contrary, the regiments manufactured products have also increased, and the have been forwarded to their destination with dispatch wonderfully favorable conditions of foreign trade dur- and general freedom from accident, and at a rate that ing the past three years are perhaps not fully appreci- did not, per capita, average more than 1½ cents per ated in their influence on the financial strength and mile, and as regard equipments and stores at one-half the prevalent freight tariff. The regulars were assem-For the year ending with June, 1896, the excess of bled with satisfactory dispatch through the efforts of the merchandise and silver products over imports amount- chief quartermasters of the different military departed to \$133,000,000, and in the following year the balance ments. Altogether, the troops transported, in less than in favor of this country was \$315,000.000. The present one month, consisted of 126 regiments of infantry, 34 year trade is still more favorable, the excess of mer-regiments, battalions or troops of cavalry, 20 batteries of artillery, along with 28,020 horses and mules and 23,nearly \$572,000,000—a truly magnificent credit balance. 141 equipments for the latter: 4,515 wagons and ambu-It is still too early to speak with assurance of the lances, 106,382 blankets, 25,739 canvas coats and trowprobable requirements of Europe during the coming sers, 145,650 hats, 8,125 helmets, 123,128 blouses, 184,485 year, but the outlook is hopeful. Crop prospects in arawers, 130,785 flannel shirts, 324,667 stockings, 192,656 this country are very favorable, the wheat crop promis- shoes, 92,844 leggins, 104,287 ponchos, 24,830 hammocks, ing the largest aggregate yield ever known. The high .81,599 tents of all kinds, 3,820 mosquito bars and 2,000

All this certainly makes a very respectable showing, and other countries, and the world's supplies are now on paper at least, but would seem to have been pre-Scientific American Supplement largely in sight at the principal points of accumula-pared with a view rather to divert attention from the salient features in the charges made than as a reply. to be as depressing to values as they would be if sup- No notice is taken of abuses, real or assumed; the quesplies of old wheat were large, and there is reason to tions of incompetency and neglect on the part of offihope that fair prices will be obtained for a bountiful icials appointed for political or other personal reasons, supply of agricultural products during the coming to the detriment of the service and wronging of competent and experienced individuals, are ignored; not The remarkable showing made by our export trade a word appears regarding the quality and suitability of camp equipage and camp locations, to say nothing of minor shortcomings, that if true could not fail to demoralize any body of troops, let alone our own with their lack of seasoning, suitable training, etc. All and these That abuses do exist and have existed is self-evident; afluences whereby ignorant and incompetent indi-; but that they are or have been avoidable we do not iduals are thrust into positions that, by all right and profess to know. Many, undoubtedly, were (or are) inseparable from measures necessitating a speedy mobilization of regular troops that have scarce any experience in regimental and brigade organizations, or of volunteers that are almost wholly formed of raw material. Neither the issuance of new forms of rations or of new uniforms can be made matters of a few hours, and comparison with European nations, who constantly keep magazines of stores in readiness for a quarter of a milcomfort, no means being provided for securing of water lion of reserves, are not at all pertinent. The United States has never had reserve equipments of clothing or provisions for more than a mere handful of troops, and atigue, no preparations are made for reception, not so the present crisis may teach a lesson in this regard. nuch as a camping site selected—even cavalrymen Further, while that which has passed cannot be corrected, there are no excuses for the future. Officials thus, perforce, left unfed, unwatered, and every way cannot longer shield themselves behind the barrier of incared for, in one instance, at least, for forty-eight lack of specific information or the impossibility of seconsecutive hours. The conditions of the camps also curing supplies in consonance with the demand-this is

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re openly ascribed to political intrigue and monetary ustice, should be filled by skilled and specially trained ubordinates from the regular service.

The statement is made that in matters of transportaion troops have not been treated even with the conideration accorded to "perishable live stock," the conlitions obtaining, at best, being worse than the worst hat could accrue to an emigrant ship. En route they nave been deprived of all the essentials of health and r cooking of food; and at the terminus of the journey, eached perhaps late at night, and after a week of nave been separated from their horses, which were

practically and essentially admitted by the Secretary for War.

#### RELIEF FOR THE PATENT OFFICE.

The "Act for Revising and Perfecting the Classification of Letters Patent and Printed Publications of the Patent Office," as passed by the Senate a few weeks since, was, on June 6, concurred in by the House by a vote of 153 to 58, and has been signed by the President. The complete text of the bill is as follows:

Be it enacted, etc., That for the purpose of determining with more readiness and accuracy the novelty of inventions for which application for letters patent are or may be filed in the United States Patent Office. and to prevent the issuance of letters patent of the United States for inventions which are not new, the Commissioner of Patents is hereby authorized and directed to revise and perfect the classification, by subjects matter, of all letters patent and printed publications in the United States Patent Office which constitute the field of search in the examination as to the novelty of invention for which applications for patents are or may be filed.

SEC. 2. That for the purpose of enabling the Commissioner of Patents to carry out the provisions of this act the Secretary of the Interior is hereby authorized to appoint from time to time, in the manner already provided for by law, such additional number of principal examiners, assistant examiners, first-class clerks, copyists, laborers, assistant messengers, and messenger boys as he may deem necessary : Provided, however, That the whole number of additional employes shall not exceed 3 principal examiners, 2 first assistant examiners, 2 second assistant examiners, 6 third assistant examiners, 5 fourth assistant examiners, 4 first-class clerks, 4 copyists, 6 laborers, 6 assistant messengers, and 6 messenger boys ; that the annual expenses for this additional force shall not exceed the sum of \$62,890.

Notoriously, for many years, the delays incident to securing letters patent have been both wearying and vexatious, to say nothing of the jeopardizing of many interests essential and financial. Eighteen months, even two years, have in some instances been consumed ere the desired papers, and the protection they are supposed to afford, could be secured, and that, too, in the face of the fact that Patent Office employés have long been worked harder, and worked more overtime, than those in any other department of the United States government, and, moreover, have annually turned into the Treasury more money representing actual net profits. Such a deplorable condition of affairs is no reflection upon the conduct of the Patent Office or its Commissioner, but is due to the lack of interest in the matter taken by the members of Congress in the past, and a failure to fully appreciate the great necessity for maintaining the work of the Patent Office at the highest possible standard. As a result. the work of the Patent Office for more than a decade has been going behind in consequence of the increasing business; and the complaints regarding delays-absolutely inevitable under the conditions existing-hourly grew in number and in insistence.

Inasmuch as the Patent Office is more than self supporting - its net profits in 1897 being fully \$252,000--coupled with the fact that it already has lying idle in the Treasury more than \$5,000,000 that by enactment are utterly unavailable for any purposes whatsoever except those of this office, it seems surprising that any combination should be formed among legislators for the purpose of rendering this surplus useless. It must be remembered all receipts of this department are at once turned into the United States Treasury and that the current expenses are obliged to be provided for from the same, by legislative appropriation.

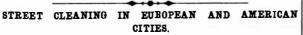
When the Act came before the Lower House on its final passage, the animus of certain members was actively displayed, and objections of the most petty and trivial character formulated. Among the

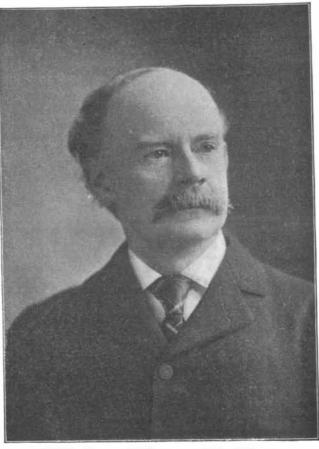
most persistent opponents was Mr. Dockery, of Missouri, who willfully and wantonly ignored all evidence and cities-London, Birmingham, Brussels, Paris, Berlin, facts, and emotionally appealed to the House not to increase the burdens of the people of the United States by class legislation at a time when the general tax rate is required to be advanced in order to carry on a war with Spain; and though while on the floor he was repeatedly corrected and shown that the fund from improved effectiveness or facilities over methods now which the appropriation must come was the property in vogue in one or two cities on this side of the Atlanof the inventors of the country and should not tic, and in many instances the procedures are much be diverted to other uses, the gentleman insisted more crude and clumsy. In the matter of street sprinkupon declaiming regarding a hypothetical outrage ling, however, most foreign cities are superior to our about to be perpetrated on the tax-paying community own, in that it is not done by contract, or farmed out,

businesslike and profitable department will be permitted to conduct its affairs along strict business lines. When Mr. Duell took charge of the office, in February last, there were nearly 10,000 new and nearly 4,000 amended applications awaiting its consideration. The new work on applications dated back to July, 1897, and amended applications back to September, 1897. The Commissioner early directed that the old work be brought and kept up to within fifteen days, and whenever necessary the force was required to remain until five o'clock to accomplish this result. By this means the office has made a gain of 1,200 cases in amended work, but the Commissioner expresses himself as opposed to this unjust although necessary discrimination against his force, which he claims is a force unequaled by that of any other bureau.

We desire that our readers shall understand that persistent efforts have been made by the Commissioner in his desire to advance the interest of the bill. We congratulate him on the success attained, and Congress upon recognizing the urgent needs of the inventors and patentees of the country.

No greater evidence could be advanced of the intelligence and liberal spirit of the present Congress than the attitude it has taken in passing this bill by such a large majority. It is welcome to all classes in the community to feel that the manufacturing and industrial interests of the country as protected by our patent system is being fully upheld.





LATEST PHOTOGRAPH OF COMMISSIONER OF PATENTS CHARLES H. DUELL.

cleaning methods in vogue in the principal Continental Cologne, Munich, Turin, Genoa, Vienna and Buda-Pesth-Ex-Commissioner George E. Waring, Jr., embodies his observations in a detailed report to the mayor of the city of New York. Though many novel features were noted, little was discovered that offered

lead to littering the street, or the accumulation of filth therein, than he would of disregarding the operations of burglars or highwaymen. In cisatlantic cities, the policeman dignifiedly saunters by a crowd busily engaged in littering the street, utterly unconscious, seemingly, that an ordinance is being violated; but on the Continent such act, if by a resident, entails prompt arrest followed by a fine; if by a stranger, he is first required to remove the cause of his offending and is then cautioned against repetition; even if but a tiny scrap of paper has been thrown down, it must be at once recovered, or the full penalty will be exacted. One notable feature observable in Continental cities is that no one expectorates on the footwalks, but when such act is rendered necessary, it is the carriageway or gutter that suffers; and an ordinance to this effect, if enforced, would go a long way toward making the footwalks of American cities more suitable to lady pedestrians.

In Austria and Austria-Hungary were found the best street sprinklers, best snow plows, and best street weeping machines. The two latter were particularly effective, being specially adapted to the work required : each of the former is followed by an individual who carries the sprinkler from side to side as needed, insuring even distribution of the water on all portions of the pavement.

In the matter of disposal of sweepings and garbage, most Continental cities are sadly hampered. In some the refuse is carried far beyond the limits of the municipality by specially provided railway trains, to be dumped in some arid or unobtrusive locality, there to After an extended personal examination of the street be systematically sorted, a part, perhaps, being utilized

as filling for low and marshy areas. The sorting is chiefly performed by women and children, who receive only a mere pittance at most. Some English boroughs have adopted cremation, and however ideal the process may seem, it is not without unpleasant features; aside from odors, the fine dust and ashes that result upon combustion escape from the chimneys of the retorts, are carried to considerable distances, and create a constant annoyance and cause of complaint on the part of residents of the neighborhood; the higher the chimney, the greater the area thus affected. Manifestly, cremation of garbage will not increase in public favor, and it has already been practically abandoned in several American cities where it has been attempted. In Detroit, Michigan, especially, it has entailed a series of lawsuits against the municipality.

The principal thorough fares in London are kept as nearly clean and immaculate as it is possible for them to be made by human device and ingenuity. Boys with brushes and exaggerated iron "dust-pans" are constantly on the alert, and anything and everything is swept up almost as soon as it touches the pavement, to be deposited in close boxes placed at regular intervals along the curbs; and these boxes in turn are replaced by others several times daily, the filled receptacles being carried away by relays of carters.

Ignoring the difference in wages paid to street cleaning employes, the expense entailed in keeping cities clean is not less, and oftentimes considerably greater, abroad than in the United States, accepting New York as a type of the latter; and even when the matter of wages is also computed, the advanced expense here entailed is trifling by comparison.

The ease with which dust, ashes, paper, droppings of cattle and other garbage is disposed of, coupled with the monetary returns accruing to sortage and sales, are no inconsiderable factors in reducing the expenses of street cleaning in New York; the advantages of this city in these directions are practically without a parallel on either hemisphere. But road-making, paving, and especially the preparing of road-beds prior to surfacing, is, as a rule, considerably further advanced in Europe than in the United States. Asphaltum pavements are uniformly better; but those surfaced with wood are decidedly worse, though better cared for. Macadamizing is in its infancy in this country, and

at large. Neither argument, reason nor fact could stay the current of this sophistical tirade, and to the last, all streets and portions of streets are sprinkled unithe representative from Missouri assumed that his position was dictated by economy and the interests of the country in general.

By the courage and insistence of the Commissioner and the friends of the Patent Office in the Senate and House, a victory has been won that is not only commendable per se, but that will prove of far-reaching benefit. The Commissioner expects that all arrearages will be disposed of by January next; also, that a newer, better and more direct and comprehensive system of examination and classification will speedily be inaugurated, whereby definite decisions and comparisons can be given that will relieve the patentee of the burden, so frequently necessitated, of appeal to the courts to establish the rights and status of an invention.

It is greatly to be hoped that the neworder of affairs. once entered upon, will be permitted to exist, and that the Patent Office will no longer be hampered by captious and trivial legislation; that, in fact, a strictly

but undertaken exclusively by the municipality ; hence formly; and, as regards asphalt pavements at least. water is not allowed to stand or accumulate, but the surface is frequently "squeegeed" or dried by means of a rubber scraper.

The most important and suggestive consideration offered by Mr. Waring is that which concerns the relation of the people to the work, and largely, as leading to that, the manner in which the police intervenes to prevent the littering of streets. While the municipal ordinances relating to such are nowhere better than those of New York and other American cities, the vital differences lie in the enforcement thereof.

In Europe all ordinances are enacted with the view of being strictly enforced; in the United States generally, many ordinances merely serve to encumber the statute books, being treated as matters of form unworthy of further consideration, once they have been duly engrossed. Abroad the "guardian of the peace" would no more think of disregarding an act that would

there is much to be learned as regards the preparing of the road-bed prior to surfacing. Stone pavements abroad are much more carefully and thoroughly laid, and the blocks better prepared, being nearly as uniform in size and surfaces as pressed bricks, thereby avoiding unsightly joints which serve to accumulate filth.

The final conclusions of Ex-Commissioner Waring are, that while cisatlantic cities, including New York, afford material opportunities for improvement in street cleaning and road-making, they have little to learn as regards the former from the methods that obtain in Europe.

A UNIQUE feature of nearly all homes and offices in Manila is the use of tiny square panes of translucent oyster shells instead of glass. The windows measure on the average six feet long and four feet wide and contain 260 of these oyster shell panes, which temper the fierce glare of the sun in the building. In a country where many people go blind from the constant sunshine this is a precaution very necessary to be taken.