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A PANIC AT THE PATENT OFFICE.

General Leggett, the Commissioner of Patents, some time ago announced his resignation, to take effect November 1, 1874; whereupon some of the lady clerks, with natural feminine impulse, made it the occasion of presenting to the General a testimonial of esteem from themselves and associate employees.

It is not perhaps strange that the General and his corps of ladies should have overlooked the law which forbids such doings; but that disinterested persons, like the Assistant Commissioner, members of the Board of Appeals, examiners-in-chief, and other legal minds connected with the office, should have been so unobservant seems remarkable.

The provision of the statute is very stringent, and is as follows: "Be it enacted, etc.: That no officer or clerk in the United States Government employ shall at any time solicit contributions of other officials or employees in the Government service for a gift or present to those in a superior official position, nor shall any such officials or clerical superiors receive any gift or present offered or presented to them as the contribution of those in the Government employ receiving a less salary than themselves; nor shall any officer or clerk make any donation as a gift or present to any official superior. Any officer or clerk violating any of the provisions of this bill shall be summarily discharged from the Government employ."

We believe it is not pretended that this statute is unconstitutional, or that for any reason it is to be treated as a dead letter. In refusing, summarily, to discharge the Commissioner of Patents and all the subscribers to this tea party, both the Secretary of the Interior and, through him, the President of the United States, are open to the charge of neglecting their plain duty.

A considerable time has elapsed since the knowledge of the above transgression of the law was made known, but the officers of the government have not as yet dismissed one of the offenders.

It is rumored that they are all to be discharged, and then all immediately reappointed. But this would amount practically to a nullification of the statute. The evident intention of the law was to place the seal of public condemnation upon all such transactions, and wholly to remove from the public service those who should be guilty of them.

In no other way can the observance of law be promoted.

To dismiss and then reappoint would be to trifle openly with the law, a course which would assuredly meet with public condemnation.

There is but one way for the President to deal with this matter, and that is promptly to discharge all the parties involved from the public service, as the law specifies. To dismiss them in a body would be disadvantageous to the public service, and therefore unwise; but it should be done as rapidly as possible. He should begin with the most prominent offenders first. General Leggett, the Commissioner, should be at once dismissed, and a new commissioner appointed. Mr. Thacher's removal should follow, and so on, down, until the law has been entirely vindicated.

The removal of the Commissioner, the Assistant Commissioner, and some of the examiners would be of little personal inconvenience to them, as they can readily set up in patent business and make a living. But the affair will prove more serious to some of the other employees, who are, for the most part, honest, faithful, and deserving; and dismissal will be very inconvenient, especially at the approaching inclement season of the year. We deeply sympathize with them, and for their sakes wish that they could be excused.

Let us hope that the effect of this general change in the personnel of the Patent Office will be a benefit to that institution. Among its officers are many intelligent and valuable persons, whose departure will be a disadvantage to the country. On the other hand there are a number of officials whose ignorance, tardiness, and illiberality towards inventors make their removal greatly to be desired. By an entirely new organization, if intelligent care is taken in the selection of individuals, the Office will be likely to be benefited rather than damaged.

Competent persons who desire employment at the Patent Office may, we think, properly file in their applications. We assume that nothing but a special act of Congress can relieve from dismissal or properly re-instate the present offenders; and if any are to be re-instated, only the very best and ablest of those now in the Office should be reappointed.

The poor material must be eliminated. All who have exhibited indolence or sluggishness in the discharge of duty, all examiners of every grade who have failed to act promptly on their cases, all who have suffered their work to get behind, all who have tried to set up their dictum against the most liberal interpretation of the laws in the grant of patents to inventors: all such persons should be rigidly excluded from the service.

ECONOMY IN EATING.

Like the steam engine, the human organism is a machine for the development and application of power. Like the steam engine, it derives its power from the combustion of organic products. But, unlike the iron mechanism, man has other ends than the performance of work, and there is no one food which will meet his physical requirements, as coal or wood will those of an engine. His fuel is necessarily complex, and, still more, its complexity must be varied time to time to meet the changing demands of the seasons, of age, occupation, and other life conditions.

In choosing his source of mechanical power, the engineer takes into account the relative cost and efficiency of the different sorts of fuel to be had in his locality, and selects that kind, or such a combination of two or more kinds, as will furnish the power he needs at the smallest cost, and with the least wear and tear to his machinery. He will not burn coal where wood is cheaper, nor green wood when he can get dry.

While it is immensely more difficult to make the corresponding selection for the human machine, it is obvious that, since health and happiness, as well as working force, are involved, it is of vastly greater importance that the selection be wisely made. Yet there are multitudes who take, or would take, pride in running a steam engine economically, who not merely give no thought to their own machinery, but rather pride themselves on its apparent capacity to run well under all conditions, or in spite of maltreatment. They "can eat anything"; and so long as their food is savory and they can get their fill, they do not care what its elementary composition may be, or how much unnecessary labor it puts upon their digestive and alimentary organs to dispose of it. Mention economy in eating to them, and they straightway call to mind the pint of beans or pound of oatmeal that ignorant theorists have proclaimed as sufficient for their daily needs, and more or less politely decline to eat by rule. Others, to whom the cost of supplying food for a numerous family is a matter of serious moment, are ignorantly proud of setting as good a table as their neighbors, unconscious that their neighbors have as vague an appreciation of what is "good", under the circumstances, as they themselves have, and that the money they misspend would more than suffice to provide an abundance of food, at once better suited to their needs, more enjoyable, and, in many cases, much more wholesome.

The fact is that the much misused word "economy" is never more severely warped from its true meaning—judicious management—than in its application to domestic matters. To be economical in one's diet is commonly thought to imply the use of cheap food in preference to the costly, to restrict one's self to one dish when appetite would suggest a dozen, to eat vegetables rather than meat: in short, the reduction of the amount, the quality, and the cost of food to the minimum. On the contrary, true economy in eating requires us to select and combine the greatest variety of food so as to furnish the maximum growth or power most enjoyably, with the least waste of substance and the least tax upon the system, in assimilating what is useful and rejecting what is useless. To do this wisely, we need to know not only what the

system requires under the varying conditions of life, but also the chemical constitution of different foods, their dynamic power, and how to combine them so as to develop their highest utility with the smallest functional expenditure. For example, a laboring man requires daily, to sustain his bodily temperature under ordinary conditions, to enable the vital processes of respiration, digestion, and the rest to go on well, and to meet the demands of muscular effort, an amount of power equivalent to about 4,000 foot tuns, or enough to raise a man of average weight about eleven miles, vertically. To maintain these conditions, it is found by experiment that a daily diet furnishing about 300 grains of nitrogen and 4,800 grains of carbon is required.

To obtain these 300 grains of nitrogen from bread, the laborer would have to eat rather more than four pounds, containing nearly twice as much carbon as would be needed. The carbon of about two pounds of the bread would thus be not merely wasted, but worse: the excretory organs would be taxed to get rid of it. To add butter to the bread would only increase the disproportion of carbon. On the other hand, if the laborer undertook to supply the wants of his system with lean beef, he would have to eat six pounds of it to get the requisite amount of carbon; but in six pounds of beef the nitrogen is over a thousand grains in excess of what is needed, and excess of nitrogenous matter in the blood is a fruitful source of disease. The nitrogen of nearly five pounds of beef would thus be wasted.

It appears, therefore, that neither bread nor beef is economical eating alone; but properly mixed, we should have, say: 14,000 grains (2 pounds) of bread, containing 4,300 grains of carbon and 140 grains of nitrogen; and 5,500 grains (about three fourths of a pound) of beef, containing 605 grains of carbon and 165 grains of nitrogen; total 4,805 grains of carbon and 305 grains of nitrogen. There can be no question that a diet of bread and beef would be more enjoyable than either singly. It is demonstrable that it would be cheaper and, at the same time, better suited to the wants of the system: in short, more economical.

In a similar manner, more complex diets can be adjusted, and the scientific correctness of diets, contrived to meet special conditions by long processes of trial, can be brought to mathematical demonstration.

In time our works on dietetics will tell not merely what foods are good and how to prepare them, but what is the dynamic value of each by the ounce or pound, and how they may be most economically combined to meet the varying requirements of youth and age, and the different conditions and callings in life. The researches of Payen, Frankland, Pavy, and a host of others have lately made rapid approaches toward this desirable state of things. For instance, a glance at one of Frankland's tables shows that the working force of a pound of butter oxydized in the body is equal to that of nine pounds of potatoes, or twelve pounds of milk, or over five pounds of lean beef. A pound of oatmeal will furnish as much force as two pounds of bread, or over three pounds of lean veal. A pound of lump sugar has the dynamic power of two pounds of ham or eight pounds of cabbage. Knowing the prices of these substances, their comparative values as sources of power can be easily calculated. Their relative value as food is a more difficult matter to determine, since in that case their relative digestibility and other elements enter to complicate the problem.

An extremely interesting and valuable feature of Pavy's recent work is the calculation of the dynamic values of different dietaries. For instance, Playfair's "subsistence diet," found by taking the mean daily allowance of nitrogenous matter, fat, and carbo-hydrates in the dietaries of London needlewomen, of the convalescents in the Edinburgh Infirmary, of the inmates of several prisons, and of the operatives during the cotton famine in Lancashire in 1862—a diet which barely suffices to sustain life—has a force producing value of 2,453 foot tuns a day, or enough to raise a person of light weight to the height of seven miles. From observations on the carbonic acid excretions of several persons, Dr. Edward Smith found that the power expended daily in maintaining the body's heat is, on the average, enough to raise the body six miles. Professor Haughton calculated the power required to perform the necessary vital functions of respiration, digestion, and the rest, to be, speaking generally, enough to raise the body to the height of one mile. The seven-mile power of the "subsistence diet" would therefore be used up without work or active exercise.

The average diet of adults in full health and with moderate exercise was calculated from the dietaries of the English, French, Prussian, and Austrian soldiery during times of peace. Its dynamic value is 4,021 foot tuns. The average of the dietaries of European and American soldiers during the great wars of recent years gave the diet assigned to active laborers. Its force value is 4,458 foot tuns. The diet of hardworking laborers, determined from the actual amounts of food consumed by railway navvies, hardworked weavers, blacksmiths, and others, is equivalent to 4,849 foot tuns. A similar calculation for the diet of a body of Royal Engineers, actively engaged, gives the high dynamic value of 5,532 foot tuns, or enough each day to lift the eaters over fourteen miles vertically. In food value, this full diet compares with the subsistence diet above mentioned (salts omitted) as follows:

Table comparing Subsistence Diet and Royal Engineers' Diet with columns for Nitrogenous matter, Fat, and Carbo-hydrates.

With these it may be well to contrast the standard diet of Moleschott, which is generally accepted as a fair representation of a model diet, that is, one containing the requisite