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Reduction of British Patent Fees.

An effort is about to be made in England to rescue from Government the large and increasing surplus accruing from the patent fees, after deducting the expenses of the Patent Office. The gross receipt for fees amounts now to about £95,000 (about \$475,000) per annum. The expenses of the Patent Office are not so much as its receipts, into a considerable sum, the profits for last year amounting to £60,000. It is to prevent, if possible, the Treasury from acquiring a vested interest in this surplus that steps are now taken to prevent the diversion of this fund from other than for Patent Office purposes.

The attention of the council of the Society of Arts was recently directed to the subject by Sir Joseph Paxton, in a letter which he addressed to them as one of their vice presidents. He asserted that the Patent Office of England ought to be a national institution in the most comprehensive sense of the word. Such an institution, he said, would become the truest and best endowment of inventive genius. In consequence of his representations, the council appointed a committee of more than 60 members of the society, distinguished as inventors, or interested in the progress of the arts, to consider the subject. This body adopted the following resolutions:

1. That a deputation of patentees and others seek an early interview with the Prime Minister, in order to impress on him the importance of saving the surplus revenue of the Patent Office from absorption into the general public revenue.
2. That it is highly desirable to place the Patent Office on a footing correspondent with the paramount industrial position of the country; and that steps be taken to press upon the Commissioners of Patents, upon the Government and the Legislature, the propriety of having the surplus appropriated to that object.

As the British patent fund is not exclusively the product of British contributions, we claim to have a voice in the disposal of it, and in the name of our inventors, who pay a considerable amount yearly into it, we ask for a reduction of British patent fees.

The British patent fees have been greatly reduced from what they were previous to 1852, but they are still too high. They may be still further reduced one half, and yet pay all the expenses of the Patent Office handsomely. We hope British inventors will begin and advocate this reform and press it vigorously upon Parliament. The English patent laws were made for rich, not for poor inventors, and it is well known that the great majority belong to the latter class. There is not one English journeyman in ten who is able to pay the large patent fees charged for protection. When an English journeyman mechanic invents a useful machine, he has to seek the patronage of a more wealthy person to enable him to secure his invention. He is, therefore, obliged to place himself in the power of another person or lose the benefit of his invention. Such a system is too strongly feudal for the present age, and we call upon Sir Joseph Paxton, who was once a journeyman himself, to devote his energies, first, to the removal of this, the greatest evil connected with the English patent system. We admire the efforts he has made to secure the surplus patent fund from the grasp of the government to save it from being used like the general revenue, but we believe the best and most just way of benefitting inventors, is to reduce the patent fees.

When the subject of "patents" was brought before the late meeting of the British Scientific Association, held in Glasgow, it was refreshing to inventors to hear the sentiments expressed by such distinguished men as Sir David Brewster, Fairbairn, and others, regarding the fees charged inventors in England for patents. The combined opinion of these savans was, that patents ought to be granted to inventors free. They considered that inventions con-

ferred great public benefits upon the country, therefore the public could well afford to grant patents to inventors without charging them for the privilege. We could also advocate the same policy as a measure both wise and politic for our country, but as politicians would always be growling at the necessary appropriations for the Patent Office,—our inventors, we know, would disdain to have it insinuated that they were the least burden upon the country. For this reason, therefore, we advocate moderate patent fees—the lowest possible to pay the necessary expenses of the Patent Office, and no more. And as Judge Mason has recommended a reduction of our patent fees to British subjects, we hope English inventors will also zealously advocate a reduction of theirs for their own benefit and that of our inventors who may desire to secure patents in that country.

Gold and its Uses.—No. 2.

GATHERING GOLD IN CALIFORNIA.—Various plans have been tried for gathering the gold of California, and a correspondent, J. Tavanay, M.D., of the San Francisco Chronicle, states that immense progress has been made since 1850 in securing gold at various diggings. He says:—

"At first the pan, then the rocker was sufficient to enrich many a miner. The tom and the riffle-box followed. After these came the sluice, as more expeditious and simple. The above means are applicable only in rich ground in the best localities; the pan, in particular, becoming useful only where the gold is thick, as, for instance, in the famous Table Mountain, where one needs only to stoop and pick it up. In a short time that active, enterprising, go-ahead spirit, (so peculiar to Americans, and well typified in their poet's motto *excelsior*), which ever urges them forward, devised such means as are now used to level hill and plain, filling up gulches, ravines, &c., and in certain parts upturning and changing the whole aspect of the country. There are means by which many now amass fortunes, where they would have starved had they been riveted to the first methods in use.

Ground sluicing, which has produced immense results in certain places, and more particularly along the American river, is far from being the *ne plus ultra* of washing on a large scale. That which carries the palm at present, where practicable, is effected by means of a hydraulic tube. At Coon Hollow, Auburn Nevada, and a few other such privileged places, mountains have been leveled with the plain by this process. It consists in conducting the water to the top of a hill partly composed of a thick layer of auriferous soil; the water is let down through a solid tube of wood, or through a strong hose of canvas, leather, or caoutchouc, which coils down the side of the hill from the height of 100 or 200 feet, sometimes more; this tube terminates in a nozzle, through which a torrent is shot with the force of gunpowder by the pressure of six or seven atmospheres, produced by the weight of the column of water. Thus, fifty or sixty inches in succession of water can be darted through a small opening of one or two inches, according to the height of the column. The water whistles through the jet, which is directed by one man, and this fluid catapult demolishes and crumbles to pieces avalanches of soil from the hill side, all of which soon becomes a deluge of mud, which finds its way through a large sluice. The largest stones and rocks are got rid of with the hand or by means of levers, (those of six or eight inches diameter are easily carried along by the current,) and the gold is found arrested in its course by riffles and other numerous and simple obstacles placed in the way under a false bottom bored with holes."

EXTRACTING THE GOLD.—Gold is found in exhaustless quantities combined with pyrites and quartz as a matrix, in Virginia, Georgia, California, Australia, and many other parts of the world. Until the gold discoveries of California were made, most of our native gold was obtained by the reduction of the gold from the quartz. The obtaining of gold economically from quartz rocks has incited the inventive genius of many persons during the past seven years, hence there have been a host of quartz crushers and gold extractors invented.

It is believed that when the surface gold

has all been picked up in California and Australia, that the vast range of quartz rocks in these countries will afford fields for obtaining gold by machinery for ages to come. The extraction of gold from its parent rock has therefore recently become an interest of great magnitude. Gold is contained in unequal quantities in quartz. Some rocks are rich, others are poor; but millions upon millions of tons of quartz are believed to contain about eight ounces of gold to the ton. The quartz is first required to be finely subdivided by crushers, to bring it into contact with quicksilver, for amalgamation and extraction. The quicksilver picks up, as it were, the gold from the quartz; the gold is afterwards obtained from the quicksilver by straining the latter through leather and driving it off by heat—the mercury being recovered by distillation. Heat and friction accelerate the dissolving action of quicksilver. One pound of mercury at 212°, after passing through a leather bag, can hold in solution 42 grains of gold, which is upwards of five times as much as it can hold in solution at 60°; hence, if 20 lbs. of mercury were put into a machine for a ton of auriferous quartz, and the mercury heated to 212°, and filtered at that temperature, every pound of mercury which passed through the bag might hold in solution 42 grains of gold, equal to an apparent loss of 1 oz. 1 dwt. gold per ton of quartz. At 90° Fah. 15 grains gold per lb. remain in solution—12 1-2 dwts. gold in 20 lbs. mercury; at 60° only 7-5 grains per lb.=6 1-4 dwts. gold. This difference of solubility of gold in mercury according to the temperature is a matter of great importance in making experiments upon gold quartz ores.

When it is necessary to collect the amalgam from a machine, it should be carefully freed from extraneous matter by a gentle stream of water, after which it may be strained and squeezed either in a leather or canvas bag. The amalgam, now freed from superfluous mercury, should be flattened and put into a cast-iron retort and luted with plaster of Paris, then gradually heated, nearly to redness, and kept at that heat for about an hour. All the mercury that is volatilized from the amalgam is easily collected by making the back of the retort dip about 1-4 in. under the surface of the water of the receiver. The retort being allowed to cool, the gold is taken out. It is possible to drive off the mercury so completely that the gold when melted shall lose only 0-68 per cent. in weight, but not unfrequently the loss in melting is upwards of 13 per cent. A light yellow color, however, is an indication that the gold from the retort still contains much mercury, especially when the fineness is equal to 23 1-2 carats. Some of the quartz miners, instead of distilling off the quicksilver of their amalgam, subject it to the action of nitric acid, but this acid does not separate the gold completely from the mercury; hence this treatment is expensive and useless.

Progress of the Great Fraud.

We have before intimated that an attempt was in progress to subsidize or bribe Congress, and thus obtain the passage of a bill for the extension of the Woodworth Patent. What cannot be done by fair and honorable steps is sought to be accomplished by foul and treacherous means.

It has come out that an enormous fund has been raised for the purpose above specified. The city of Washington, we are told, is placarded with hand bills similar to the following:—

CAN \$300,000 BUY THE UNITED STATES CONGRESS?

MEMBERS OF CONGRESS are respectfully requested to examine "Report No. 155, House of Representatives, July 17th, 1852," by which they will see that the WOODWORTH PLANING MACHINE PATENT is making the American People pay \$9,000,000 a year for the use of this Patent, and it is understood that the above sum of \$300,000 has been appropriated to induce Congress to extend this inquiry for fourteen years from the 27th of December, 1856! American genius is clogged by this monopoly, and the People are publicly plundered. Therefore, said Patent SHOULD NEVER BE EXTENDED!

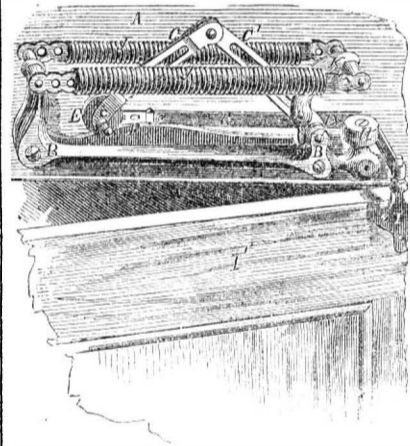
We have received information from private sources which partially confirms the statement made in the placard relative to a large amount of money being pledged to obtain Congressional votes. It is the most gigantic scheme of corruption that has ever, within the annals of this country, been brought to light. Most earnestly do we hope that it may utterly fail; fail it surely

will if our people will but do their duty. Again do we urge our readers to circulate petitions against the extension, obtain signatures as fast as possible, and forward them on to the Representatives of their districts in Washington. We suggest that every individual opposed to the extension should write a private letter to the member in Congress from his locality, expressing his sentiments, and especially warning him against this huge system of bribery. Private citizens have the right, and it is their solemn duty, under such circumstances, thus to address and urge their Representatives.

Recent American Patents.

Weighting Scales.—By James Kelly, of Sag Harbor, N. Y., assigned to John Sherry, of same place.—There is a balancing lever of the usual kind, the article to be weighed being placed at one end, the weight at the other. One of the improvements consists in an ingenious application of a thumb screw for moving the weight, whereby greater accuracy and convenience is obtained; the weight is furnished with a pointer, which moves over a graduated scale. There is also another screw, by turning which a pointer is made to indicate the exact tare. For shop uses, and many other purposes, this invention appears to be invaluable.

Improved Door Spring.—By Prof. Amos Westcott, M.D., of the Dental College, Syracuse, N. Y.—This contrivance seems, at first glance, to be rather more complicated than so small an affair as a door spring ought to be. But we think we can show that all the parts here employed are necessary to the production of a good article. If other door springs appear to be cheaper and more simple, the inventor thinks they will be found to be lacking in several important particulars.



In the engraving A is the lintel of the door to which the contrivance is fastened by means of the screws B. C' are toggle joint levers, one of their ends being pivoted to the frame at D, and the other end terminating with the friction wheel E. This wheel is grooved on its periphery and traverses on a sharp edge E. The corner end of lever C is furnished with a projection, to which one end of the leather strap G is attached; the latter passes around friction wheel H, and fastens to the pintle, I, upon the door. The spiral springs J are attached at one end to the frame of the apparatus, and at the other end to a bracket K; this bracket is attached to the lower end of lever C'. When the door I' is opened, as shown in the cut, the strap, G, pulls upon lever C, causing the wheel, E, to travel up the curve of the edge F. The springs J acting through the bracket K, on lever C', resist the movement of lever C, and become stretched, but collapse again in shutting the door. The curve of the edge F is so grandulated that the pull upon the door will be less when it is wide open than when nearly shut; slamming is thus prevented. The ordinary springs exercise their greatest power when the door is widest open, and thus impart a momentum which closes the door with violence.

The extremities of the springs J J are looped, as seen, so that they may be shortened at pleasure, and act with more force. The end of the strap, G, is also looped for the same purpose. The contrivance may be instantly thrown out of operation by slipping the end of the strap off from the pintle, I. The spring can be arranged so as to allow the door to remain open, at a certain angle, if desired. The contrivance may be placed upon either side of the