

## New Patents Act

THE archives of the Board of Trade, we imagine, could not reveal many such annals of official obstruction as the story of the movement which led to the passing of the new Patents Act. Mr. Levinstein, of Manchester, whose own part in that movement was probably second to none, has shown in his account to the Liverpool chamber of commerce, a charitable leniency towards those whose stupidity so long delayed the realization of that reform, but the facts of the matter ought, for several reasons, to be reviewed from a more critical standpoint. It may be said at once that Mr. Lloyd-George has well deserved all the popularity he has gained from the passage of this measure, though not because he is more deserving of credit than the pioneers who perceived the opportunity and long and strenuously insisted on the need of reform; it is the extraordinary independence which he showed when the matter was brought under his consideration that deserves recognition. Many authorities were against him in the course he took, but he had the courage to question the decision of his predecessors, and he has now the pleasure of seeing their opposition fully condemned by the success of this new act.

As far back as 1881, Mr. Levinstein called attention to the great injury inflicted upon British trade by foreign inventions patented in this country which were worked exclusively abroad, and in 1883 an act was passed, when Mr. Chamberlain was at the Board of Trade, with the intention of providing an adequate safeguard of British interests; but it was framed in such ambiguous language that it was found to be practically useless for the end it was devised to serve. Mr. Levinstein and others again took up the cause, and in 1897 Mr. Ritchie, then president of the Board of Trade, was pressed to consider the matter, but even at that date he did not consider that the Act of 1883 had failed, and refused to take any action in the matter. The Manchester Chamber of Commerce then began its active support of the movement of which it has been the foremost champion ever since, and Mr. Ritchie was appealed to again, with some success. To satisfy him of the uselessness of section 22 of the 1883 Act, by which it had been sought to ensure the working of patents in the United Kingdom, Mr. Levinstein's firm arranged for a test case, by lodging a petition with the Board of Trade for the grant of a certain licence. The hearing of this petition took the form of a trial in the law court; it extended over 11 days, and although the compulsory licence was finally granted, the utter uselessness of the section for all practical purposes was abundantly proved. The total expenditure of the parties concerned amounted to about \$20,000, the expenditure of the Board of Trade being probably not less than \$3,500. As the result of these proceedings Mr. Ritchie was induced to appoint a departmental committee to enquire into the matter, and if so what, amendments are necessary in the provisions of section 22 of the Patents Act of 1883. That committee, however, was chiefly composed of officials, lawyers, and a patent agent, while manufacturers and inventors were conspicuously absent, a deficiency which the Manchester chamber's appeals could not induce Mr. Ritchie to make good. The economic side of the question was deliberately ignored by this committee, who met the suggestion that some plan for the defence of a patent in the event of its not being worked in this country would be preferable to the compulsory granting of licences by the curt remark in their report that "We are not able to accede to this suggestion," and Mr. Levinstein has shown that the committee really misunderstood the object for which the enquiry was sought. To a witness by whom reference was made to the desirability of having as many manufacturers as possible worked in this country, the master of the rolls, a member of the committee, replied, "That it is not very material to our present enquiry." Not satisfied with this departmental committee's report, the chambers of commerce and other bodies approached Mr. Gerald Balfour, but again to no purpose, for his bill of 1902, as far as compulsory working was concerned, was quite valueless. The associated chambers, however, did not lose heart, and in 1906 they passed a resolution which was submitted to Mr. Lloyd-George, and is now embodied in the Patents Act of 1907. It is the provision based on this resolution that has already resulted in the establishment of many foreign manufacturers in this country for the purpose of working their patents, and it is an act by which the chambers of commerce have greatly redeemed their vanishing reputation for efficient public service.

Since the passing of the act, Mr. Lloyd-George has raised high expectations of it by his own enthusiastic way of estimating its probable results. The number of British patents owned by foreigners and not worked in this country was generally understood to be very large, but Mr. Levinstein has given in his address to the Liverpool Chamber of Commerce a more definite basis for such conjectures, which he states as follows:

"Section 27 is retrospective in its application. It includes all patents which were taken out from 1894 to 1904. Putting aside the years 1894 and 1895, as patents taken out in these two years will shortly lapse, there are still remaining the patents granted between 1896 and 1904. The average number of patents granted annually to residents outside the United Kingdom is about 8,000, which would

give a total for these eight years (1896-1904) of 64,000. Allowing that, say 75 per cent. of these have lapsed, or are not worked, their still remain about 16,000 patents to be dealt with. If half of these are already worked in this country, which is a liberal allowance, there are finally left about 8,000 patents to which section 27 applies. I know these figures are rather speculative, and that speculations are somewhat risky, but still they show at least that a very large number of foreign patents, granted in England, must at once come within the province of the new act."

In addition to the foreign concerns, which we have reported to be effecting works in England, viz., two by German syndicates engaged in the chemical industry, and the American Shoe Co., of Boston, and the firm making the Gillette razors, Mr. Levinstein learns that a large foreign electrical engineering company proposes to erect works on the Thames, and a number of other foreign manufacturers are negotiating for the acquisition of suitable sites. Before long Mr. Levinstein expects we shall also see the artificial silk industry fully developed in this country. This is a very profitable business, one German concern paying last year 40 per cent. in dividends. There are, however, a large number of industries which come within the act, among which Mr. Levinstein names the motor industry, electrical engineering, labor saving appliances and machinery, chemicals, etc., all largely depending on patented inventions which will have to be worked in this country. From Commercial Intelligence, London, England.

### THOSE FELLOWS IN MARS

Popular speculations as to the nature of the supposed inhabitants of Mars, which crop up whenever Martian discoveries are announced from Flagstaff Observatory and elsewhere, may here be alluded to in passing, writes Louis Robinson in the Nineteenth Century. Whatever the presumed Martians may be like, it would certainly be impossible for us, if we met one of them, to recognize him as a man and a brother. Beings who can per-

form gigantic labors, such as the digging of "canals" compared with which the Mississippi is a mere gutter, with not more than one-eighth of our atmosphere to breathe meanwhile, must have a chest development which would distort them out of all semblance to humanity; while the low force of gravity in Mars would enable people of average weight to get about on legs not much stouter than those of a collie dog. According to some careful observers, such as Professor Campbell of the Lick Observatory, it is even an open question whether Mars has any more atmosphere than the moon. More than this, certain leading physicists, quoted by Mr. Alfred Russell Wallace, have declared that no oxygen, hydrogen or water could exist on so small a world without being dissipated into space and sucked up by ourselves and the sun. Hence it has been suggested that the "polar snow caps" of Mars may consist of solid carbonic acid gas. From this point of view our Martian neighbors must subsist upon an atmospheric regimen of carbonic acid instead of upon one of air, and hence would be more likely to resemble trees in their physical constitution than the higher animals. Such a notion opens up an inviting field for imaginative writers, who wish to rival Mr. H. G. Wells. Here below we irrigate and cultivate passive and helpless vegetables. There, perhaps, an alert and enterprising vegetable population is watering and fertilizing the soil on its own initiative and for its own private ends.

### A SOLDIER ONE YEAR OLD

The Prince of Asturias, the heir to the Spanish throne, is just one year old. A thanksgiving service was held at the Palace in Madrid, and was attended by the King and Queen of Spain, the Spanish Royal Family, and many dignitaries and high personages. When the procession was formed in the galleries of the Royal apartments to proceed to the chapel the King and all the members of the Royal Family were agreeably surprised to see that the Queen, who intentionally took the last place, bore in her arms a charming little infant soldier attired in recruit's uniform. It was the Prince of Asturias, whom by a delicate attention, which extremely delighted everybody, especially the King, his mother had dressed in the uniform of Infantry Regiment No. 1, known as the King's Regiment. After the service, and in the presence of the King and Queen and all the Royal Family, the Prince of Asturias was enrolled by the Minister of War and the colonel of the King's Regiment as an ordinary private.

## What Fireproof Construction Means

THE word "fireproofing" as generally used is a misnomer, as few building materials will withstand the action of intense heat for any considerable length of time. There is a popular but erroneous impression that several of the materials used in modern building construction are fireproof. Among them are steel, iron, concrete and the clay products. Not all of these materials will resist fire unless used understandingly. Even such a fire resisting material as fire brick is destroyed, as is often the case in smelting furnaces, kilns, etc., etc. There is no structural material used today that is strictly fireproof is the conclusion reached by E. W. Lazell, a prominent chemist, in an article in the fireproofing number of Cement Age, New York.

The best we can do is to secure what is in the highest degree fire-resisting. This distinction is more important than may appear at first thought, for it means that to achieve the highest economy we must provide for a minimum expense in the matter of repairs as well as structural security from the fire-resisting standpoint. For example, steel, marble and granite are non-combustible in the ordinary sense, but a building composed of these materials exclusively would fare sadly in case of fire. It would soon be beyond repair if not a total loss. On the other hand, if the steel frame of such a building were protected by

good fire-resisting materials, the steel would be preserved and the loss on the building by fire greatly reduced. This suggests at once the value of slow heat penetration as well as heat resistance.

The fire-resisting material used should be such that it will not expose the steel by unequal contraction and expansion. Often considerable damage is done to the fire-resisting material by drenching it with cold water while it is hot. Thus the ability of the material to withstand the action of water when hot without breaking away from the steel is important.

A fire-resisting material should possess the following properties: It should be capable of resisting the action of fire in a high degree. It should possess a low thermal conductivity. It should be able when hot to withstand the action of water without breaking or distorting. It should represent economy in construction. Its utility should include adaptability to the structural part of the building as well as the fireproofing. It should be a material whose surface could be easily and cheaply restored after a fire. Its expansion should be such that it will not leave the iron members of the frame exposed. In looking over the list of the so-called fireproofing materials it would seem that concrete most nearly meets the above requirements.

There have been countless instances where walls of brick and stone, set as so many units

in mortar, have gone to pieces under stress of fire. Columns of iron and steel have buckled and collapsed. So-called fireproof coverings, excellent material in themselves judged from a non-combustible standpoint have expanded, broken and fallen away, exposing the metal framework to the destructive influence of fire.

Where these things occur the restoration of the building is expensive and practically necessitates a new structure.

Concrete is an excellent fire-resisting material in itself, and if properly proportioned and placed will not leave the steel exposed. Furthermore, it is economically and easily applied.

Upon the application of water when the material is hot, some surface disintegration takes place, but owing to its low thermal conductivity this disintegration applies only to the surface. The surface can also be restored at a comparatively small cost. Therefore everything considered concrete would seem to be one of the most practical, economical and indestructible fireproofing materials. Its use, however, should be supplemented with fire-resisting doors, window openings, wired glass and such materials as will tend to confine a fire to the room in which it may start, or to save the building from outside fires. All so all stairways and elevator wells, etc., should be enclosed with fire-resisting materials.

## Penny Postage

PENNY post between the United States and the United Kingdom will be an established fact on and after October 1 next, Mr. Henniker Heaton's and other postal reformers' efforts being at last crowned with success, says Lloyds' Weekly.

The reduction in the postal rate from 2½d. to 1d. will entail a loss of £130,000 to the British exchequer, but it is confidently expected that this will be partly recouped by the enormous growth in postal business that will be brought about.

The official announcement was made in the House of Commons on Wednesday by Mr. Sydney Buxton, the Postmaster-General, as follows, in reply to a question by Sir William Holland:

"The question of Anglo-American penny postage has been under the consideration of the Postmaster-General of the United States and myself. I have now received a telegram from Mr. Meyer stating that he is prepared to accept the proposal I made to him for the establishment of a penny postage between the two countries.

"Certain arrangements have to be made before the change comes into force; but on and after October 1 next the rate of letter postage to the United States will be the same as that to the Colonies—a penny per ounce throughout the scale, instead of twopence halfpenny, as at present.

"This reduction in the postal rates between the United Kingdom and the United States, by greatly increasing the freedom of personal and commercial intercourse, will not only further the many interests the two nations have in common, but will also strengthen the mutual good feeling which happily exists between them.

The announcement was received with cheers from all sides.

Mr. Buxton's master stroke is an important step towards the universal penny post desired by Mr. Heaton, M.P., who has repeatedly pointed out that, while Britain sends abroad annually only 2,300,000 lbs. of letters at 2½d. for the half-ounce, no less than 20,000,000 lbs.

of circulars and bookpackets were sent to the same countries at one halfpenny for 2 ozs.

At present a letter is sent to Canada by way of New York, but going to one of our Colonies, only costs 1d. If it were addressed to New York, however, it would cost 2½d. This anomaly will be swept away in October.

Discussing the scheme in a Parliamentary paper issued on Wednesday, the Postmaster-General said that ten years ago the estimated number of letters sent from this country to the United States was eleven millions. Last year it reached twenty millions, an increase in the ten years from 1897 to 1907 of 82 per cent. Similar increases are also shown in the numbers of letters received from the United States addressed to this country.

Throughout the period covered by these statistics the postage has been at the uniform postal union rate of 2½d. per half-ounce, but since October 1 last the scale of weight was increased from the half-ounce to the ounce, and the scale of postage, after the first ounce was reduced to 1½d. per ounce.

On the basis of the numbers of letters despatched to the United States in 1907, it is estimated that the loss to the British Exchequer upon the adoption of penny postage will amount to about £130,000 a year, but as there will be small margin under present conditions between the receipts and expenditure, it is hoped that part of this loss of £130,000 may be recouped by the exceptional growth of correspondence which may be expected to follow the adoption of the penny postage to the United States.

The news was enthusiastically received in Washington on Wednesday. Mr. Meyer, the Postmaster-General, in making the announcement, stated that the reduction was restricted to postal rates between Great Britain and the United States, who had entered into a special union on this subject. The privilege would not for the present be extended to other countries in the Postal Union.

Mr. Meyer said that the United States postal officials had long wanted to bring the penny post about, but various regulations hindered and many details had to be arranged.

### CHANGES OF LEVEL ON THE EARTH'S SURFACE

We are familiar with the idea of great upheavals in past geologic ages, and we know that sudden alterations of level accompany earthquakes and volcanic eruptions. But it is hard to realize that the earth's crust is still adjusting itself and that it is slowly rising and falling all over the globe. Recent measurements show this very clearly, and it is expected that systematic observations of changes of level will now be made regularly in all civilized countries every twenty-five or thirty years. Says a writer in "Cosmos," Paris, March 28:

"The International Geological Congress held at Vienna in 1903 requested the International Association of Academies to decide that precise measurements of level should be taken in various countries. Repeated at long intervals, these should reveal the movements of the earth's surface that may still be taking place. The director-general of leveling, in France, Charles Lallemand, has been entrusted with the publication of a preliminary report on the question. He shows, in the first place, that these movements are undeniable; besides apparent motions due to systematic errors in observation; measurements of high precision made in Switzerland, Germany, and Japan have shown that the surface has changed in elevation by amounts varying from 1 to 50 centimeters (½ inch to 3 feet).

"We know, on the other hand, that the sea-level is not absolutely fixed. At Brest the average level of the Atlantic fell, between 1851 and 1871, at the rate of 2 millimeters (1-12 inch) a year; after 1871 the level ceased to fall, and then rose at the same rate. The movement would seem to be an undulatory one of very long period in the mass of the ocean. These geodesic observations are quite in accord with the geological observations of numerous authors and particularly with those of L. Cayeux.

"The interest of such investigations is undeniable, but because of the complexity and slight amount of earth-movements, there is a great risk that the measurements will be influenced by systematic errors. It seems difficult, save in special cases, to observe with certainty changes of less than 7 centimeters (3 inches). It will be necessary for each country to repeat two or three times a century its measurement of levels along certain properly chosen lines of its fundamental system." Translation made for The Literary Digest.

Lord Grenfell, who is now on the retired list, and has been made a Field-Marshal by the King, is chiefly remembered for the good work he did when organizing the Egyptian Army, of which he was Sirdar for some years, his successor being Lord Kitchener. When the South African war broke out it was a matter of considerable surprise to many good judges that Lord Grenfell was not sent to the front.

As to this, remarks London P. T. O., it is said that one day a short time ago a soldier who held a very important position at the War Office during the early stages of the South African war, was asked why Grenfell was not summoned from Malta and given a command. "My dear chap," was the reply, "the truth of the matter is that he was clean forgotten or he would have been one of the first to be sent out."

## The Queen and a Consumptive Patient

The Queen, accompanied by Princess Victoria, on Tuesday afternoon paid a visit to St. Luke's House, 14 Pembroke square, Bayswater, and spent half an hour with the patients. Her Majesty was attended by the Hon. Charlotte Knollys and the Hon. Sidney Greville, says the London Times of recent date.

The visit was an absolute surprise to all the officials of the institution, of which Her Majesty is the patroness, and also to the poor girl for whose benefit Her Majesty specially made the call. Some days ago Martha Massey, one of the patients in the house, which is for the reception of cases of mortal illness in their latest phases, surreptitiously wrote a letter to the Queen saying how much she would like to see her before Her Majesty took a long trip abroad. The poor girl, in respectful terms that she had been unable to see the Queen whenever she was driving through London or visiting the district of the house owing to her illness. Her only satisfaction was what the nurses told her and what she was able to glean from the newspapers. Would Her Majesty gratify her dying desire by coming to see her before going abroad, because she was afraid she would not be living when Her Majesty returned?

Touched by the sincerity of the letter, Her Majesty decided to visit the writer. She reached the house at 4.45, driving from Bucking-

ham palace in her white motor-car. Arriving at the principal entrance, the Queen inquired, "Is Miss Massey in?" The door was opened by a servant girl who instantly recognized the Queen and for a moment stood astounded. The girl replied to the question in the affirmative, and then invited the Queen into the matron's (Miss B. Brooke-Alder's) room. Her Majesty, who was carrying a bouquet of orchids, lilies-of-the-valley, carnations, and asparagus fern, explained the object of her visit to Miss Brooke-Alder, and was at once conducted to the ward in which Martha Massey was lying. Surprise and joy combined for the moment overcame the patient, but the kindly words of sympathy from Her Majesty soon dispelled her nervousness. Her Majesty thanked the girl for her letter, and expressed the pleasure it afforded her to respond to the invitation. "Miss Massey could not find words to express adequately her heartfelt thanks to the Queen, but the tears in her eyes indicated the fulness of her heart. Her Majesty handed the bouquet to Miss Massey, and told her that it was specially for her and that the flowers were cut from the Palace gardens. The Queen then passed on to other patients and distributed some lovely roses among them. To each patient Her Majesty spoke words of sympathy and encouragement. Before leaving, the Queen passed through two wards, all the beds in which were occupied.

When bidding farewell to the matron in the hall, Her Majesty heard some one coughing. "Who is that coughing?" asked the Queen of the matron. Being informed that it was Miss Massey, Her Majesty ordered her cough lozenges in the motor-car to be brought her. Upon receiving them the Queen immediately retraced her steps to the bedside of the poor girl and placed one of the lozenges in her mouth, and in the kindest tone instructed the girl to allow the lozenge to be absorbed in her mouth. Her Majesty then handed a number of the lozenges to the matron, requesting her to give them to the girl when she was taken with severe fits of coughing. The Queen charmingly smiled upon the helpless patient, and again shook hands with her, and then left the house.

The girl whom the Queen thus honored has had a life of trouble and sorrow. Born in London of parents in poor circumstances, she was called upon at the age of 11 to nurse her mother, a victim of consumption, and to look after younger children of the family. Her father, after the mother's death, led a somewhat irregular life and Martha, when only 14, had to go to work in a factory, earning a few shillings per week. The girl was always frail, and undoubtedly took consumption when nursing her mother. Finally, her father was stricken with consumption, and Martha secured his admission to the same institution where she is now lying. There her parent died, and some time ago Martha herself was admitted.



London. D. especially of forty years membered, was erected memorial is tablet, and inn, Holborn wrote "Pick on the third 1886, to find Poe's fall other very but a parallel found overseas British music as the great literature to reading root task, but the tees of the Sponser, Sh Swift, Pope, lyle, Macauli. This sele universal ce of complain the country Dickens? bert Burns Burke—and, Shelley, Bla where, aske wrathful too. Thus we sides our of ary treasur.

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