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ANOTHER RUNAWAY ELEVATOR.

Another fast running hydraulic elevator in one of the tall New York office buildings recently dropped beyond the working speed, and was brought up by the safety clutches with a jerk that severely shook up the car load of passengers, and in the case of one man caused a dislocation of the knee. Coming so quickly after the accidents of the past few months at the American Tract Society building, this mishap is distinctly unfortunate for the reputation of the hydraulic system of elevators as such—for the elevators at the Bowling Green building, where this accident took place, are of the same type that earned an unenviable notoriety a few months ago, when one of the cars ran away, with results similar to those in the accident of Thursday week. The representative of the company that put in the elevators is reported as saying that the cause of the car running away was that the attendant opened the valve that controls the descent of the car too wide for the full load of passengers that filled the car at the time, and he felicitates the public upon the fact that the safety clutch was so prompt in its action. To judge from the complacency with which the makers seem to regard the accident, one is driven to the conclusion that this type of elevator is liable to run away at not infrequent intervals, and that even if the victim suffers from an occasional shaking up, or a dislocated joint, he must be thankful that a quick-acting clutch saves him from a worse disaster.

As a matter of fact, every time the clutches on an elevator are automatically thrown in, whether they stop the car or not, it is an evidence that the working of the elevator system is at fault. If the speed of the car is to depend upon the nice judgment of the attendant as to the proper relation between the opening of the valve and the load that the car is carrying at the time, the safety of the public certainly hangs upon a very slender thread. If the company's explanation of the accident is correct, the car must have dropped eight stories before it was arrested, or from the thirteenth story to the fifth. It will naturally be asked: What would have been the result had the car begun to drop at the sixth or seventh story? A brake to be thoroughly efficient should be able to check a car before the runaway has traversed one, or, at the outside, two stories. Unless the makers of hydraulic elevators can place the speed of the car under better control than the recent mishaps would indicate, they must be prepared to see this type driven out of the field by the positive control which marks the worm and pinion gear of the electric elevator.

RAPID TRANSIT SCHEME APPROVED BY THE PARK BOARD.

The Park Board of the City of New York has withdrawn its inopportune obstruction to the scheme for providing rapid transit, and this great work is to go forward, as far as the board is concerned, even if its prosecution should involve the destruction of two or three trees at the Battery. The members of the board who have now voted to approve the plans of the tunnel are to be congratulated on the prompt action which they have taken. The motives which led the Board originally to oppose the plans were commendable, for the Battery Park has already been abominably disfigured by the erection of the elevated road, and it should be the first duty of the guardians of this historic ground to see that no further outrage of the kind is permitted. In the present case the removal of the trees would take place in the interests, not of a private corporation, but of the people themselves. It was a case of sacrificing a minor public interest to one of vast proportions, and the Park Board, in retiring from its former position, has evidently taken this view of the case.

Meanwhile the hearing before the Appellate Justices drags wearily along. The engineer for the rapid transit commission has long ago given his testimony and explained in full detail the amended plans and estimates by which he has been able to cut down the cost of the work to less than \$30,000,000, and it must be admitted that the estimate has every indication of being careful, detailed, and conservative. It is based upon the accumulated experience which the large engineering operations of the kind in the past twenty-five years have provided, more particularly in the very city in which the new work is to be done. The plans were amended to meet the objections of cost which the opponents of rapid transit raised against the Broadway scheme, and the route is now laid out beneath the adjoining thoroughfare—Elm Street—recommended by the experts who testified against the first plans. Yet for the past few weeks the hearing has been taken up with a mere reiteration by the engineers of the enemies of rapid transit of the same objections that were urged against the first scheme. Civil engineers whose reputation for professional sincerity is surely worth something to them do not hesitate to make the obviously preposterous assertion that Mr. Parsons' \$30,000,000 tunnel is liable to cost from \$50,000,000 to \$60,000,000. Civil engineering is as exact a profession as any other; and estimates on a tunnel whose floor is but 15 feet below street level can be made with at least as much cer-

tainty as for deep and difficult river foundations. It does not take an engineer to perceive that in the appalling list of contingencies which the expert testimony against the tunnel scheme is detailing with weary iteration, the "wish is father to the thought."

THE SUPPRESSION OF A FRAUDULENT SYSTEM OF PATENT PRACTICE.

Everyone who appreciates the deep interest which is taken by inventors in all that concerns the Patent Office and the general patent business of the country will understand the feeling of relief with which the news of the disbarment of Wedderburn & Company has been received. It has been well understood that the arraignment of this notorious firm was the arraignment not merely of one or more individuals, but of a pernicious system of patent practice which was not only working great harm to the interests of the inventor, but was bringing the whole patent business as such into disrepute.

It remained to be seen whether the high standing of one of the most learned of the professions was to be prostituted by the introduction of such proceedings as characterized the business methods of this firm. The atmosphere is at last cleared, and the profession is relieved by one skillful cut of the knife of an unwholesome growth which was gradually poisoning the entire system of the patent practice.

Had the charges preferred against this firm failed to stand, it would have been disastrous for the great body of inventors at large, for a blow would have been struck at the prestige of the Patent Office from which it would have been slow to recover, and a premium would have been put upon such demoralizing methods as marked the practice of the firm in question. Veracity, honor, fidelity to the interests of the client on the one hand and the interests of the Patent Office on the other, the disposition to make personal interests altogether subservient to those of the client, and, in fact, every quality which should mark and does mark the representative patent practitioner, would have been cheapened in the eyes of the world, and the objectionable methods which have now been condemned would have received widespread advertisement and the appearance of official sanction.

As it is, an additional safeguard has been placed upon the interests of the inventor, and the honor and fair name of one of the most difficult, responsible and easily misunderstood professions has been signally vindicated. That the profession of patent attorney is difficult, is shown by the fact that its duties necessitate a more or less intimate acquaintance with the history and present status of the various arts and sciences the world over; that it is responsible is seen from the fact that the brightest hopes, and what are considered to be the most valuable secrets of the inventor, are intrusted to its keeping and largely depend for their fulfillment upon the fidelity with which the trust is preserved and prosecuted; and that it is misunderstood, is shown by the fact that its recognition is not in any degree commensurate with the knowledge, skill and fidelity which are necessary for the effective discharge of its duties.

The public, however, have not been the only victims, for at least two United States Senators have no doubt innocently been persuaded to aid the scheme by allowing their names to appear as members of the Wedderburn board of award.

The interests of the patent practitioner are insignificant in comparison with the widespread mischief which was being done to the public in the lowering of the whole tone and spirit of the patent business. The methods of the now disbarred firm appealed to the most sordid instincts of the people, and sought to invest the patent system, which is intended for the encouragement of useful inventions, with the features which characterize a reckless game of chance. The public was encouraged to invent, not with the object of improving existing arts, but for the purpose of obtaining monetary rewards and empty and meaningless badges of distinction. The luckless inventor was urged on to enter fields which had already been thoroughly covered, and he was encouraged to apply for patents on devices which were as old as the hills. This trading upon the credulity of the public was worked to such advantage that it grew exceedingly lucrative—a fact which was duly noted by a few other equally unscrupulous but less daring firms who followed with more wary steps along the lines which the pioneers in these extraordinary practices had laid down.

With regard to these smaller firms, whose offense has been only a little less glaring than that of the one in question, it can only be hoped that the strong hand with which Commissioner Butterworth has crushed the chief offender will now be laid upon every firm whose methods are in the least degree questionable. While it may be a difficult matter to prescribe an exact code of ethics for the guidance of those who represent the inventor before the Patent Office, the recent inquiry has shown that there is, at least, a speedy and drastic remedy for such grossly irregular practices as have lately been flaunted before the office.

The field for genuine invention is vast and ever increasing. With every new discovery new avenues are

opened to new lines of invention, but whatever work there may be, must be done along legitimate ways and to fill legitimate wants.

In the decided course which he has taken the Commissioner has had the full sympathy of the public. He has done a great service to the patent interests of this country, a service whose effect will be widespread and permanent.

NEW EASTWARD RECORD FOR THE LINER KAISER WILHELM.

In our last issue we recorded the fact that the westward ocean record from Southampton to New York had been reduced to 5 days 22 hours and 35 minutes, by the new North German Lloyd boat Kaiser Wilhelm der Grosse. In this number we are able to announce that this fine ship captured another record, that from New York to Southampton, on her return trip across the Atlantic. The run from Sandy Hook to the Eddystone lighthouse, fourteen miles south-southwest of Plymouth breakwater, was made in 5 days 15 hours and 10 minutes. If we allow 6 hours for the run from Plymouth to the Needles, it is fair to assume that, if the Kaiser Wilhelm had not called at Plymouth, she would have made the whole distance in about 5 days 21 hours, which is about 13 hours less than the record trip of the St. Louis.

An analysis of the run shows that it was in every way a splendid performance. On five consecutive days the ship covered over 500 knots per day, something that has never before been accomplished on the eastward passage, on which the nautical days are less than twenty-four hours long. The daily runs were as follows in knots: 367, 504, 500, 507, 510, 519, and 55 knots up to the hour, 2:25 P. M., at which she reached the Eddystone lighthouse. The run from the lighthouse to Plymouth consumed one hour, and by 10 o'clock on Wednesday night the mails which had left New York on the previous Thursday were landed in London. The average hourly speed for the whole trip was 21.91 knots, which, considering that stormy weather and head winds were encountered, was a better performance than the 22.01 average of the Lucania, made in fair weather.

In this connection it should be mentioned that the carriage of the mails from New York to London is made by the fastest boat and the fastest long distance train in the world. When it was decided to make Plymouth the first port of call for the North German Lloyd boats the Great Western Railway inaugurated a special tidal train to meet them. This train is made up as soon as the boat is signaled and runs without a stop from Plymouth to London—194 miles—at the rate of 53½ miles per hour. The train is not a mere racing outfit, such as used to be sent to Scotland on the northern lines during the famous competition a few years ago, but is a regularly scheduled train, weighing over 200 tons and carrying a full load of mail, baggage and passengers. The speed, comfort and safety of this combined rail and steamer journey is an eloquent tribute to the engineering genius of these latter years of the nineteenth century.

OPENING OF THE PNEUMATIC POSTAL TUBE SERVICE IN NEW YORK CITY.

Shortly after noon on the 7th instant the first section of the pneumatic postal tube service, which is now being installed in this city, was opened for regular service in the presence of the invited guests of the Tubular Dispatch Company, who are putting in the plant. The completed section runs from the General Post Office through Beekman, William and Stone Streets to the station at the Produce Exchange, a distance of 3,750 feet. There are two tubes, each 8½ inches in diameter, the bends being made of brass and the straight sections of cast iron. The interior surface is smoothly finished off to assist the passage of the carriers. At each station there is a transmitter and a receiver of an improved design, specially constructed for this plant. The air-compressing plant is located at the General Post Office, and a pressure of 6 pounds to the square inch is employed for the present, though the pressure, and consequently the speed, may be increased if desired. The carriers consist of sheet steel cylinders, 24 inches long and weighing about 12 pounds. Each of these can hold about 600 letters, and it is estimated that about 250,000 letters per hour can be carried in each direction when the operators are fully accustomed to the work. When a carrier has been loaded, it is placed in a charging tray and pushed into a section of tube, a little longer than itself, which is then swung over into the line of the main tubing. The air carries it to its destination, where it automatically operates a cushioning device, which reduces its speed just before it falls into the receiving tray.

The ceremony of inaugurating the service was performed by Dr. Chauncey M. Depew, who, acting under the direction of Mr. John E. Milholland, the president of the Tubular Dispatch Company, placed in the carrier a Bible wrapped in the stars and stripes, a copy of the President's inaugural address and other documents. The lever was pulled at 12:16:20 P. M., and at 12:17:50 P. M. it reached the Produce Exchange, 3,750 feet dis-

tant. Here it was opened and inclosures were made, the carrier finally arriving at the Post Office at 12:21 P. M., or 4 minutes and 40 seconds from the time it was sent away.

An experiment was recently made to determine the time taken to send a message over practically the same route as that covered by the postal tubes, by various systems of communication. The test showed that the round trip occupied thirty-three minutes by a messenger boy, thirty-three minutes by a wagon, fifty-six minutes by telegram, and three hours and ten minutes by mail one way.

Dr. Depew, in a characteristic speech, insisted upon the fact that every device that assisted in the development of speed was a direct contribution to the advancement and prosperity of the world. He stated that though the pneumatic delivery system had received its first application on a large scale in London and Paris, it would probably be the New World that would extend the system and show the wide range of its possibilities. He is satisfied that the installation of a complete network of tubes, answering in its scope to the telephone of to-day, would effect a revolution in the business methods of the retail tradesmen, placing them in hourly touch with the wholesale houses, in some cases practically increasing their capital 300 per cent. Second Assistant Postmaster-General Shallenberger designated the postal tube system as the most important commercial enterprise of the past twenty-five years. He stated that, when the system has been completely extended in the metropolis, it will be possible for the Post Office to deliver messages to the limits of Greater New York in less time than by telegram. Moreover, the system makes it possible to expedite the transmission of letters from the outskirts of New York to the outskirts of Chicago, St. Louis or other large cities by from twenty-four to twenty-six hours. The business men of New York and Philadelphia will be able to send a letter and receive an answer between these two cities within the limits of the business hours of one day.

We hope to give an illustrated description of the new plant in an early issue.

THE AMERICAN INSTITUTE FAIR, NEW YORK.

The American Institute, which is now holding its annual fair at the Madison Square Garden, is one of the historical institutions of New York City. For many years the record of its proceedings was largely a record of the progress of the country in the industrial arts, and the winning of its medals was one of the most coveted distinctions in the industrial world. The list of early prize winners contains such names as those of Samuel Colt, Richard M. Hoe, Samuel F. B. Morse, George Steers, and many others only less renowned in the world of art and science. The annual fairs attained a popularity which extended far beyond the limits of New York City, and they came to be looked upon as positive landmarks in the onward march of invention.

From various untoward causes the fortunes of the Institute, after many decades of unbroken success, began to decline, until, in 1892, the annual fair was discontinued. Last year, mainly through the efforts of Mr. Charles Chamberlain, Director of the Institute, the fair was revived again, and a fairly successful exhibition was held during the month of October in Madison Square Garden. This year, under the superintendence of Mr. Alfred Chasseaud, a successful effort has been made to extend the scope of the undertaking, and certain new features, notably a fine art exhibit and an exhibit of fruit and flowers, have been added. Altogether the display, as seen from the gallery of the building, is a marked advance upon that of last year, and gives reason to believe that this commendable institution is rapidly regaining its old time prestige and usefulness.

Near the Madison Avenue entrance to the hall is an exhibit of architectural ironwork by William R. Pitt, of New York, which deserves special mention, both for the durability, the fine finish and the artistic appearance of the material. Some of the designs in composite cast and wrought iron are extremely handsome, and the composite gates, guards and rail and stair work have the finish and beauty of hammered ironwork.

The A. A. Griffing Iron Company are again conspicuous exhibitors at the fair. They show one Bundy hot water heater and one steam heater of the same name, one steam and one hot water La Villa heater, the former with an automatic draught regulator in place. The regulation is effected by means of a diaphragm in a closed drum, upon which the steam acts if the pressure exceeds a certain point. The diaphragm acts by means of levers upon the damper, closing the draught. At the same time it blows a whistle to attract the notice of the attendant. The exhibit also includes a line of Bundy gravity pumps, feed water heaters, steam traps and steam and oil separators.

The grinding of spectacle lenses is illustrated at the stand of Mr. L. Alexander, of New York, who has a large model at work. On the lowest platform of the model are several blocks of crown glass from which the slabs are cut by means of a reciprocating band of steel, the operation being similar to that of sawing marble slabs. The small slabs are then roughly chipped into

circular shape and placed upon the "moulds," which are rotating disks of bronze whose surface is curved to the desired shape of the lens. As the mould rotates, the lens is held stationary and ground with emery to the proper curvature. It is then polished. It takes five hours to grind a lens. The moulds wear rapidly and have to be periodically trued in a special lathe. The spherical lenses are ground from three inches to one hundred and forty-four inches, and the work is done on a variation of three millimeters. The surface of lenses which are used to correct long and short sight is spherical. Up to within the last dozen years this was the only correction that was extensively practiced; but of late years the optician has placed within reach of the general public glasses which correct "astigmatism," a defect due to an oval form of the cornea. This correction is made with a glass which is part of the shell of a cylinder. There is also a prismatic lens for the correction of the defect known as "cross eyed." In some cases the eyesight is affected with all three defects, and a complicated composite glass is used which includes the three forms of lens.

Dana, of New York, has a stand with a collection of the best work of his studio, and on the northern side of the hall is an exhibit of photographic work which is of special interest. We refer to the photographs in color by Edward Bierstadt, of Reade Street, New York. Many beautiful specimens are shown, and they include a variety of subjects. One is struck with the extreme brilliancy of the coloring in the landscapes. So bright are they, indeed, as to give an appearance of overdone artificial coloring. A most interesting case is that which shows the process in detail. The first picture is from a negative taken through a violet blue screen and printed in yellow. Then follows one from a negative made through a green screen and printed in red. No. 3 shows the result from a negative taken through a red screen and printed in blue, and No. 4 shows the effect of photographing through a yellow screen and printing in neutral tint. The combined result is a remarkably exact and clear reproduction of the original painting. It is in the reproduction of paintings, indeed, that the new process is most successful, the results being very fine. In this exhibit may be seen the first photographic portrait ever made. It is a portrait of Miss Draper, of New York, taken by her brother, Prof. Draper, of this city, in 1840.

The readiness with which electricity lends itself to automatic appliances has been noted by an ingenious inventor, who has used it to good effect in an electrical rat trap. The device exhibited at the Fair consists of a narrow passageway of wire netting, in the middle of which is a swinging door containing the bait. When the trap is set, this door is closed. As the rat approaches, it steps on a contact maker which swings the door out of the way, and, as the victim passes on, another contact mechanism causes the door to shut behind him.

The Micrometer Balance Scale Company has an exhibit of scales on which the weight may be determined quickly and with great exactness. The weight end of the scale is provided with a quick acting horizontal screw, upon which is a weighted cylinder. The weight (corresponding to the position of the cylinder) is read off on a horizontal scale in pounds and the ounces are read off on the periphery of the cylinder weight. The scales are shown in many varieties, from the ordinary counter scales of the grocer's store to the fine prescription balances of the druggist.

In these days, when special attention is directed to questions of hygiene, the very complete exhibit of Knight asbestos filters should command attention. The filters are shown in a variety of sizes, from the small concern, suitable to the cottage or small city flat, up to the largest sizes for hotel use. As the filter is a device which is intended to remove only those impurities which are in suspension in the water, it is evident that its efficiency will be directly proportional to the small size of the interstices—the fineness of the mesh, as it were—in the filtering medium. If an impurity is to be removed, the interstices must be smaller than the particles of which the impurity is made up. The Knight asbestos filter makes use of a strainer made of layers of asbestos, the fiber of which has been finely separated, giving it a soft, woolly texture. A pile of this material several feet in thickness is compressed to a thickness of half an inch, and it is then cut into the sizes and shapes required. The simplest form of filter consists of a metallic bucket-shaped vessel with a fine gauze bottom. The asbestos pad is laid upon the gauze and a second wire screen is placed upon the asbestos and pressed down upon it with a thumbscrew. The exhibitor made experiments in which the water put into the filter was dyed a deep color with washing blue, and after filtration came away colorless. Starch was also removed. An examination of Thames water by Professor Atfield, of London, showed that the microbes which it contained were entirely removed by the asbestos pads. We shall give a further notice of the fair in our next issue.

LONDON omnibuses carried 83,277,814 passengers during the first half of 1897 and traveled 12,743,242 miles.