

THE MUSEUM OF PATENT OFFICE MODELS.

BY EDWARD W. BYRN.

A piece of legislation for which the last Congress is responsible, and for which no excuse can be found other than a misapplied effort at economy, is the re-

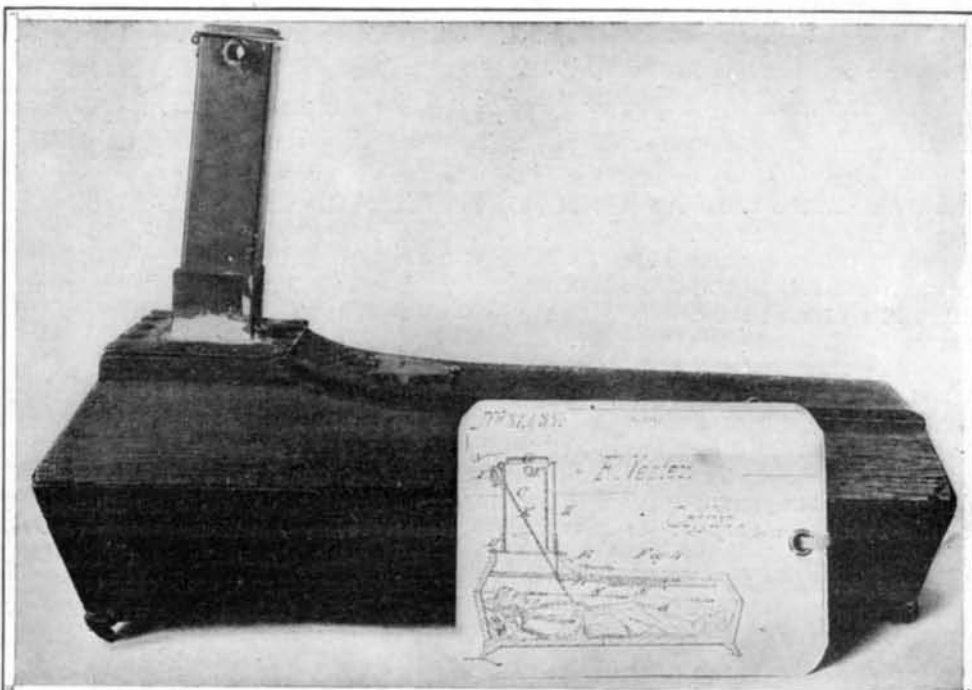
accident or age have become so mutilated as to serve no useful purpose as a record, and these may well be disposed of. There are also about 2,500 models filed as exhibits but not made a part of the record of any patent, and these may be disposed of.

gine patented in 1854 and his induction coil of 1868, Channing & Farmer's fire-alarm telegraph of 1857, Eli Whitney's cotton gin of 1794, the Blanchard lathe of 1820, Thurber's typewriter of 1843, and many others.

In printing, the array and perfection of the models



ONE OF THESE CHAIRS IS PROVIDED WITH A BELLOWS TO BLOW AIR IN YOUR FACE, THE OTHER HAS A FAN TO BRUSH THE FLIES FROM YOUR HEAD.



A MAN COULD NOT BE BURIED ALIVE IN THIS COFFIN. HE COULD BREATHE AND COULD RING A BELL TO CONVINCE PEOPLE HE WAS ALIVE.

duction to \$10,000 of the annual rent paid by the government for the preservation of Patent Office models in the Union Building at Washington. Inasmuch as the rent paid in previous years has been nearly twice the sum appropriated, some curtailment of the museum's expenses was rendered necessary, and the Secretary of the Interior instructed the Commissioner of Patents to ascertain the condition of the models and to adopt some means of disposing of them. The result was the appointment of a committee of Patent Office examiners, who have fully investigated the matter and will soon submit their report.

Pending the action of the committee, a storm of protest has arisen against this disintegration and partial destruction of the exhibit. Voicing this protest most strenuously, the Patent Bar Association has by its representatives appeared before the committee and urged the preservation of the exhibit, arguing that it is practically impossible to establish any standard or guide by which to determine the relative importance of the various models, and that none of the models which form part of a patent should be disposed of if it is in such condition as to be useful as a record. There seems no way of determining which models will be of importance in the future, for no human being can say authoritatively but that a model which seems of the least importance to-day may be of the greatest importance to-morrow. There is a present demand and necessity for the models as record evidence in patent litigation.

There are of course some models which through

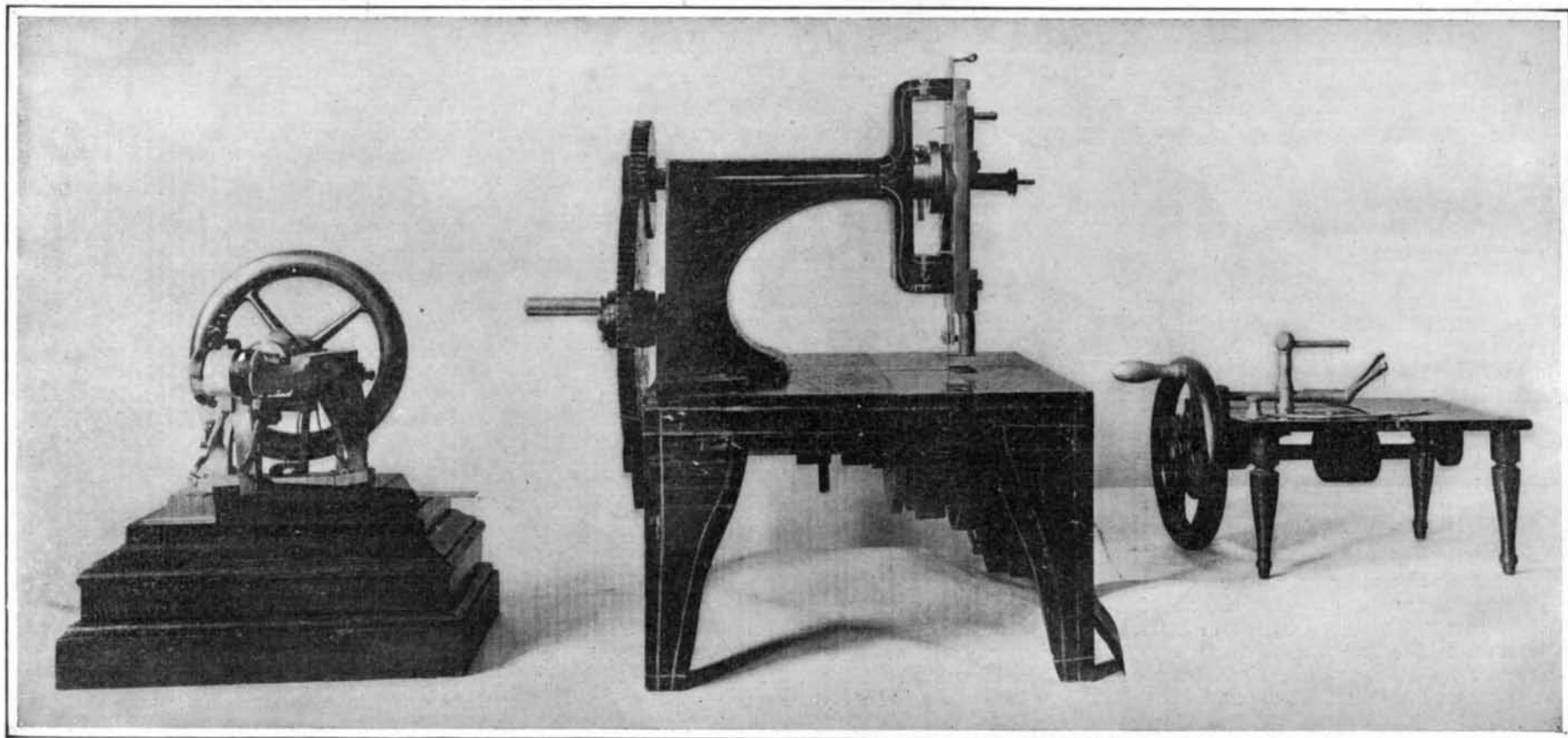
In the early history of the law particularly, in many instances the drawings were sketchy and incomplete, and reliance for the disclosure of details was placed upon the model. They are, therefore, not mere duplicates, but supplemental disclosures. The model, therefore, became an indispensable part of the record of those earlier patents.

The question as to what disposition will be, or should be, made of these models is still an open one. It will be remembered, on the one hand, that this collection of models is not a complete exhibit of all the patents granted. All models prior to 1836 were burned, and only a few have been restored. In the Patent Office fire of 1877 some 86,000 additional models were burned, leaving about 157,000 models. On the other hand, the models remaining and now on exhibition in the Union Building represent some of the most important epochs of progress which have marked the growth of modern civilization, and it is the only exhibit of the kind in existence. Here are to be found the sewing machines of Howe, Wilson, Singer, Grover & Baker, Willcox & Gibbs, and others. The Howe machine in 1846 for the first time placed the eye of the needle in the point instead of the heel, and this, with the four-motion feed of Wilson, gave the first practical success to sewing by machinery. Here also are Morse's telegraph patents, 1832-1840; the Bell telephone patented in 1876, the Edison phonograph patented in 1878, Edison's electric lamp patented in 1880, the House printing telegraph of 1846, the Bain chemical telegraph of 1848, Dr. Page's electro-magnetic en-

in presses and allied arts is particularly fine, the work of Hoe, Bullock, Gordon, and others being presented in beautiful and operative models. In looms and the textile art generally, there are also illustrative models of perfect workmanship. So also in locomotives, cash registers, knitting machines, machines for making needles, nails, and horseshoes, and many other complex machines. The time lock of Savage of 1847, the arc lamp of Collier & Baker of 1858, the electro-magnetic engine of Stimson in 1838, and the old electric motors of Davenport, Neff, Edison, and others are all here.

Many curious and historic inventions are to be found in the collection. Abraham Lincoln's Means for Lifting Vessels over Shoals was patented May 22, 1849, and is represented by a good model; Sonnenberg & Rechter in 1852 patented an electric device for killing whales; Edison, on June 1, 1869, took out his first patent, which was for an electrographic voting machine.

Prominent in the exhibit of models are several thousand grouped together in separate cases, being the inventions of women. One would naturally suppose that these would lie in the sphere of a woman's work, and many of them do. Sally Rosenthal invented a pocket sewing machine, which she could take along with her when visiting, and thus improve each shining hour with both work and gossip. Mary Carpenter invented a machine for sewing straw hats, and is reputed to have made much money out of it. Margaret Knight invented a feeding machine for making paper bags,



The Howe Sewing Machine.

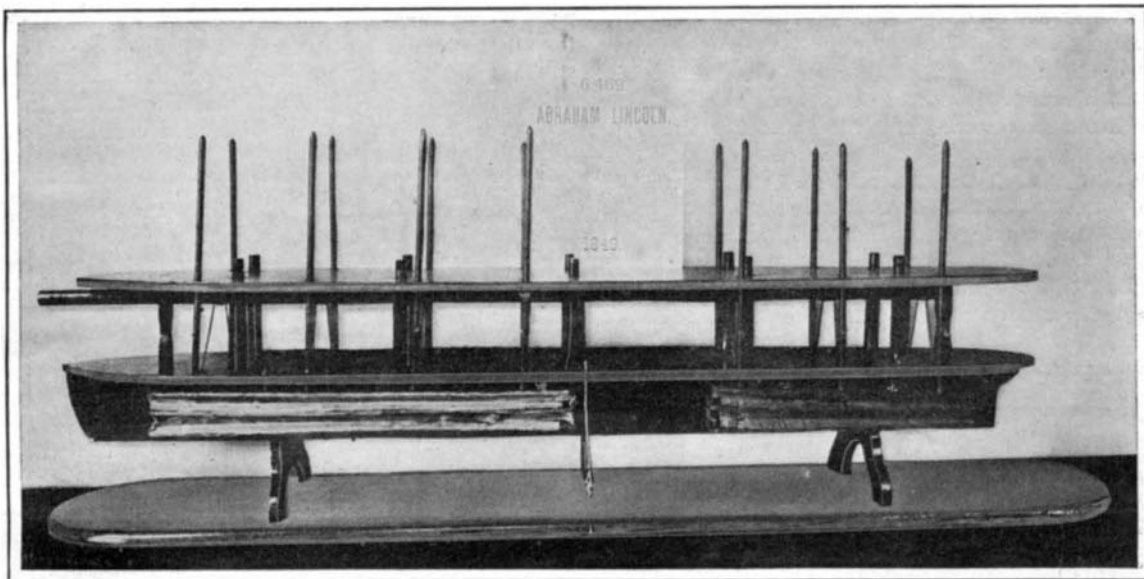
Singer Sewing Machine.

Wilson Sewing Machine.

THREE EPOCH-MAKING IMPROVEMENTS IN SEWING MACHINES.

and is credited with considerable profit therefrom. Frances Dunham was the inventor of a machine for making honeycomb, shrewdly recognizing the assistance this would render the bees. Not all of the women, however, have confined themselves to lines of

so as to illuminate the interior anatomy have all been patented, and many more amusing instances might be found. Many of these are of course not represented by models, but are here mentioned as instances of the humorous side of inventions.



ABRAHAM LINCOLN'S "MEANS OF LIFTING VESSELS OVER SHOALS."

feminine thought. Mary Montgomery, with the memory of the civil war fresh before her, invented in 1864 a very mechanical double-hull construction of war vessel, and Sarah Mather in 1845 devised a submarine telescope, while Mary Woodward in 1849, probably with an eye to the comfort of a bald-headed spouse, invented a fan to be attached to the rocker, so as to keep off the flies as well as fan the occupant.

Prosaic as is the work of mechanical evolution, many curious and amusing lines of thought crop out in the work of the inventor. Two men in 1862 together invented a plow gun, in which the beam of the plow was fashioned as a cannon. One of the inventors was perhaps a farmer and the other a soldier, and the implement in the field was ready for either peace or war. Another in 1887 secured a patent for an aerial car with live eagles for a team. Naturally a working model could not be supplied, and we must take the patentee's word for the operativeness of the invention. A melancholy philosopher in 1880 molded the ashes of the cremated dead into a memorial statue or vase. An industrious man who attempted to follow out Franklin's custom of rising early, in 1855 patented a bedstead adapted to throw the sluggard on the floor at getting-up time. A Beau Brummell in 1896 patented a self-tipping hat which makes a polite salutation. Here, too, a model was dispensed with. A tender-hearted man in late years has patented an eyeglass for chickens, another in 1854 patented a tape-worm trap, which was to be swallowed and the trap then removed. A recent inventor coats the dead body with glass for preserving it, another has an electric device for stopping runaway horses. Another attaches a parachute to a man's head and weights to his feet, so that he may jump out of the window in time of fire and land safely. A lover of feminine beauty has provided a dimple maker. An anti-snororing device is supplied by one whose trials are thus expressed with mute eloquence. An anti-scratching device for chickens was the basis of an application for a patent by a lady in 1863, but was never issued. An illuminated keyhole surrounded by luminous paint which shines at night was the subject of another patent, unexemplified, however, by a model. This enables the unsteady man to find the keyhole. A cheek expander, a hair parter, and an electric lamp to be swallowed

Yet these exceptional lines of thought do not all represent absurd or ridiculous vagaries, as most of them are useful, and many of them make valuable contributions to the sum total of knowledge.

Experiments Upon Dogs.

Under the heading "Reconstituent Effects of Raw Meat," L'Illustration (Paris) has the following:

"To determine the reconstituent effects of raw meat Dr. Charles Richet fed differently from August 10, 1905, to February 1, 1906, six groups of four dogs and

meat, group five with raw meat, group six with the mash, group seven with lactated cheese. In the first five series, aside from accidental deaths, the dogs remained in excellent health; in the fifth, they supported extremely well the alternations of fasting and feeding. The four subjects of the sixth series died successively the 35th, the 36th, the 60th, and the 83d day. Finally, of the three dogs of the last group two died on the 71st and the 175th day.

"The result would seem to be that meat is indispensable for the repair of muscle weakened by starvation. Moreover, raw meat should be in this respect very superior to cooked meat. As for the dogs subjected to the fasts, the average of the differences between the gains and the losses in weight at the end of each alternation was a loss of 1.7 for the dogs fed on cooked meat, 0.2 for raw meat, and 4.5 for mash."

Cars Which Had Perfect Scores in the Glidden Tour.

The cars which lost no points whatever in the contest for the Glidden and Deming trophies are given below:

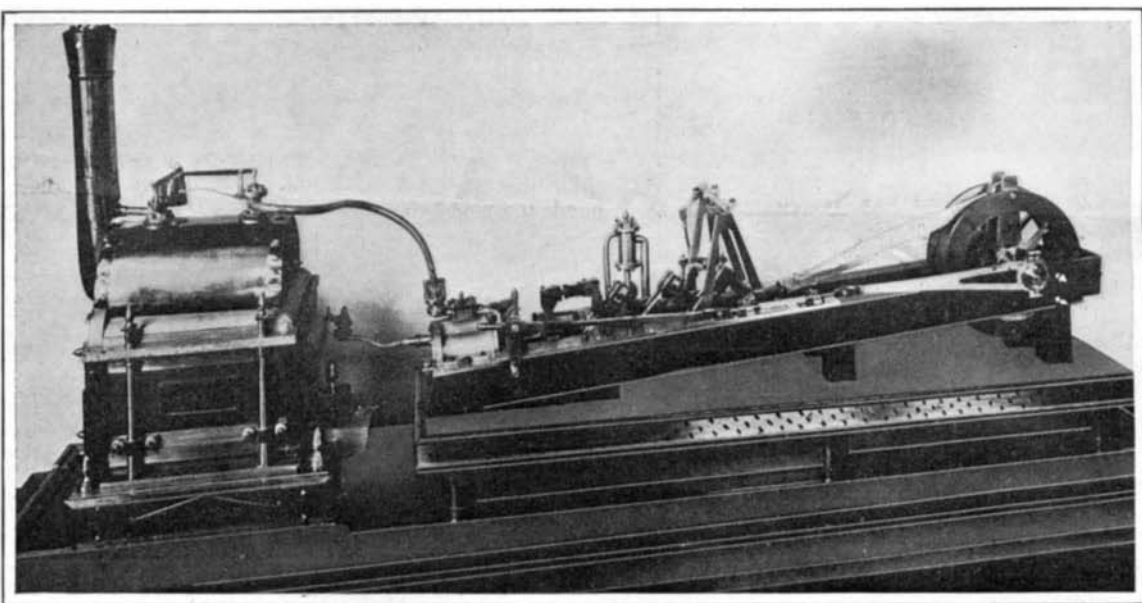
FINAL SCORE, GLIDDEN TOURING CONTEST.

P. P. Pierce, Buffalo, Pierce, 45 horse-power; A. E. Hughes, Philadelphia, Pierce, 45 horse-power; P. S. Flinn, Pittsburg, Pierce, 32 horse-power; G. M. Davis, Buffalo, Thomas, 50 horse-power; L. J. Petre, Cleveland, Stearns, 40 horse-power; George Soules, Toledo, Pope-Toledo, 40 horse-power W. C. Walker, Hartford, Pope-Hartford, 25 horse-power; W. E. Wright, Springfield, Knox, 40 horse-power; C. F. Barrett, Hartford, Columbia, 28 horse-power; Ernest Keeler, Lansing, Oldsmobile, 30 horse-power; C. Burman, Cleveland, Peerless, 45 horse-power; F. E. Wing, Boston, Marmon, 30 horse-power; G. G. Buse, Buffalo, Packard, 24 horse-power.

FINAL SCORES IN THE DEMING CUP CONTEST.

C. W. Kelsey, Tarrytown, Maxwell, 36 horse-power; A. A. Post, New York, White, 18 horse-power.

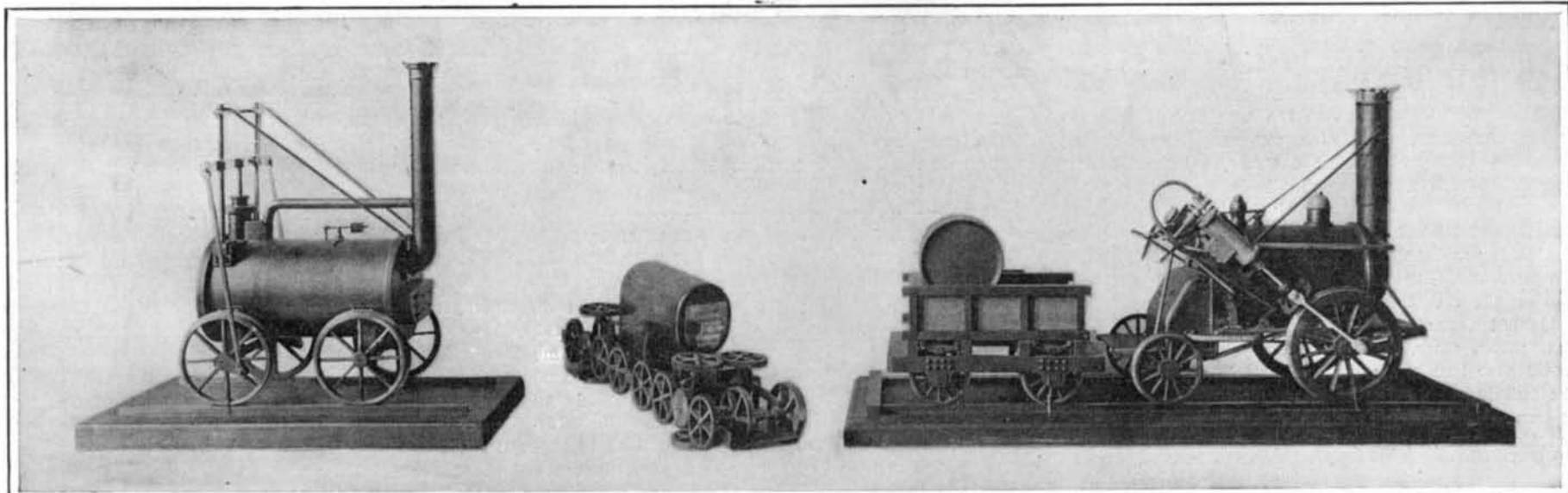
The United States Bureau of Labor has issued a bulletin in which the rates of wages paid in America,



A LAZY-TONGS FOR A CONNECTING ROD GIVES A STROKE TEN TIMES AS LONG AT THE CRANK AS IN THE CYLINDER.

one group of three. The first group received alternately cooked horse-meat and a boiled mash composed of rice, milk, and sugar; the second received, by turns, cooked meat and raw meat; the third, cooked meat and lactated cheese (Gruyère cheese cooked with milk). The alternations were of five days. The other groups were subjected to fasts of five consecutive days, then fed during five days—group four with cooked

Great Britain, and Germany, from 1890 to 1903 are compared. The figures cover thirteen of the most important branches of labor, and show that the British employer pays nearly 50 per cent more for his labor than does the German, while the difference as against the American employer is 191 per cent. At the same time it is shown that the German worker is increasing his rate of wages toward the British standard.



Trevethick's Engine (1804).

Whetstone's Geared Locomotive (1861).

Stephenson's "Rocket" Locomotive of 1829.

THREE INTERESTING PATENT OFFICE MODELS.

The Danger to Greenwich Observatory.

BY CHARLES STIRRUP.

The welfare of Greenwich Observatory is a matter of international interest and importance, even if for no other reason than that the famous institution overlooking the Thames is accepted by the whole world as a standard meridian. In scientific circles in particular much concern is being felt for the observatory, for its usefulness, its very existence even, is threatened by a huge electric power house which has lately been erected half a mile away due north by the London County Council. The case is set out at considerable length in the London Times by Prof. H. H. Turner, of the University Observatory, Oxford, who was formerly on the Greenwich staff and is now a member of the Board of Visitors. He says that "the disturbance caused by the hot air and smoke from all the chimneys (of the power house) cannot fail to be serious, though it is at present impossible to estimate it quantitatively. But there is another source of disturbance of an alarming kind, of which direct evidence has already been obtained. In spite of various precautions taken, the engines of the generating station are so powerful that they shake the observatory. The delicate observations for radii, which furnish the reference points for Greenwich time and for terrestrial longitudes, indicate a state of constant vibration while the engines are running, which will be greatly increased if the full proposals of the London County Council are carried out. By the invitation of the Astronomer Royal I paid a special visit to Greenwich, . . . and was able to compare for myself the state of matters during the running of the engines and after they had stopped. The observations left no room for doubt as to the seriousness of the disturbance." The clash of interests brought about has naturally given rise to a number of suggestions on the part of laymen which, also naturally, are more or less impracticable. The issues at stake, as Prof. Turner puts it, are not properly understood by those who are unfamiliar with astronomical work of the kind which has made Greenwich famous. He goes on to say:

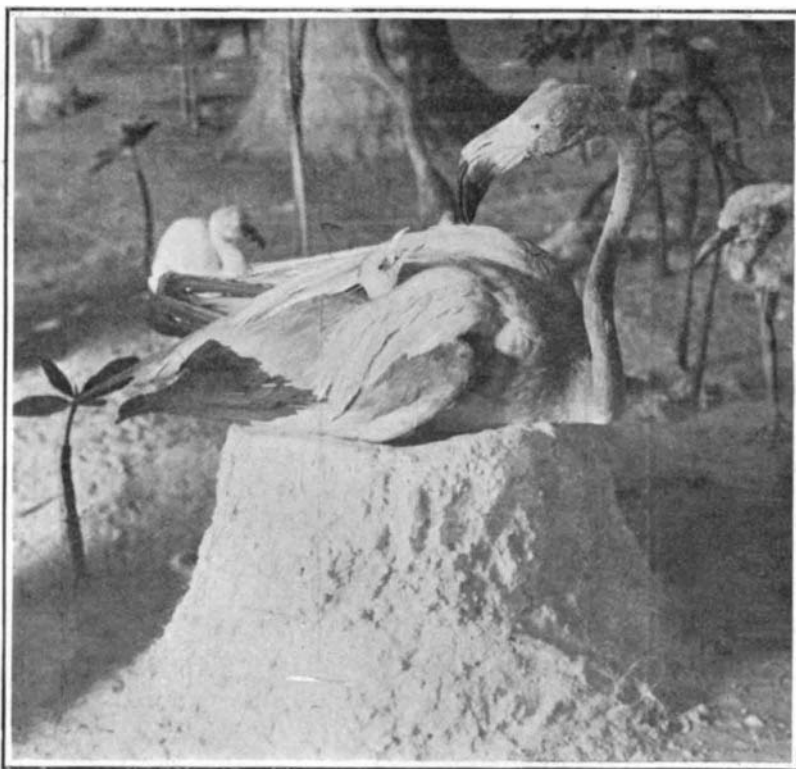
"The mischief that arises from tampering with a standard is even greater *in posse* than *in esse*. But it is, at the same time, very difficult to state concisely. I have been often asked whether it would not be better to move the observatory away from Greenwich, and it is almost impossible to state the objections in a manner commensurate with their importance. Suppose one were asked whether the pictures in the National Gallery could not be replaced by a set of well-made copies, it would be very difficult to state the objections in adequate language. One might lose one's temper and retain general sympathy; but a person who happened to be ignorant of art, and unwilling to accept public opinion, would not be convinced. There is a similar difficulty in explaining to those unfamiliar with science the impossibility of copying a standard—say the standard of length—and the consequent necessity of guarding it with the greatest care; and unfortunately in this case one cannot to the same extent take refuge in public support, since there are not so many who are sufficiently acquainted with the countless small details which make up the argument. To explain the issues involved in moving Greenwich Observatory is more difficult still; it could, no doubt, be done with time and patience, but to have to do it in the witness box under cross-examination might well make the stoutest heart quail. Is it unreasonable to ask those who have not time to acquire the necessary preliminary knowledge of fundamental astronomy to accept the views of those who spend their lives in such work and have no conceivable personal interest at stake?"

Quite apart from the question of utility, there is the sentimental objection to the transference of the observatory from Greenwich to some other place. Greenwich Observatory would then no longer exist, and we have to remember that it is by far the most famous institution of astronomical observation in the world. Established in 1675 for the advancement of navigation and nautical astronomy, it stood for one hundred and fifty years absolutely without a rival. During the eighteenth century it was at Greenwich only that there were systematic observations of the sun, moon, stars, and planets, and astronomers the world over had to work from material supplied from the building at the top of the hill in Greenwich Park. It was at Greenwich that the aberration of light, the nutation of the earth's axis, and other famous discoveries were made and from Greenwich has been issued every year since 1767 that almost incalculably valuable compilation known as the "Nautical Almanac." At Rome, in October, 1883, the Geodetic Congress

recommended the international unification of the hour and longitude with Greenwich, and just twelve months later forty delegates assembled at Washington agreed to the Royal Observatory being the prime meridian, the respective representatives of France and Brazil only abstaining. Greenwich Observatory belongs not merely to England, but to the world.

The Deutsch Aeronautic Prize.

The rules for the Henri Deutsch Cup, which is the leading aeronautic event of the season, have been decided upon at a recent meeting of the Sportive Commission of the Aero Club of France, and were presented by the special committee which was charged with the affair. According to the regulation, the Henri Deutsch Aeronautic Cup, which is a work of art having the value of \$2,000, is to be awarded to the first aeronaut mounted on an airship or aviator who shall have made the circuit including St. Germain, Senlis, Meaux, Melun, St. Germain, in the region of Paris, without taking on supplies, in the direction and order which he may desire. The length of the circuit passing through the above localities is about 120 miles. The descent is not indispensable at the terminal point of the circuit, and it suffices to have closed the circuit above mentioned. As to the date of the start, the competitor is free to choose it, within the eight months of each year from March 1 to October 31. The trip is to be made between sunrise and sunset. At the end of eight months the competitor who has not been distanced is to return the cup to M. Henri Deutsch, and will receive in exchange the sum of \$4,000 in cash. To have the cup change hands, the speed made by the second comer must be 10 per cent over that of his



American Flamingo Brooding and Feeding Young, an Example of Modern Taxidermy.

predecessor. The competitor who shall become the third holder of the cup under these conditions, will keep it definitely as his own property, outside of the prize of \$4,000 which he will receive like his two predecessors. The rules are now fixed in the general lines, and only a few details remain to be decided upon. It is considered that the cup will have a great influence in promoting the question of airships and aeroplanes in France. Another prize which has recently been announced relates to an international course of airships which is to be held at Ostend Beach, one of the leading summer resorts on the Continent, during the season. The details of the event are not as yet made public, but it is stated that most of the leading aeronauts have promised to enter the event. A prize of \$10,000, which is one of the largest ever offered, is to be awarded by M. Georges Marquet, the manager of the Casino. Further details of this event will be given shortly.

Another crate of submerged coal was taken up from No. 2 basin in Portsmouth dockyard and is to be tested. It will be remembered that on May 16, 1903, the Admiralty ordered several crates to be filled with coal, each holding two tons, and all were lowered to the bottom of the basin on that day. At the same time several heaps of coal of similar description were placed on the coaling island and covered up, the object being to ascertain whether submerged coal retains its calorific properties better than that not submitted to this process. The crates of coal have been left submerged for various periods, and all previous tests have been in favor of the sea water process. The crate taken up last week had been submerged for three years.

THE MODERN TAXIDERMIST AND HIS ART.

BY B. S. BOWDISH.

Taxidermy is an art, and a science as well, and the present generation has revolutionized its methods and the ideals. The general idea of taxidermy has always been to preserve examples of wild life. Formerly the method was to place an awkwardly-mounted bird on a polished wooden pedestal or perch, and both bird and mount might have been carved from one piece of wood, for all the semblance of life. Sometimes one or more stiff specimens were placed in a case with an equally stiff and unnatural-looking collection of dried grasses. To-day the great aim of scientific taxidermy is to take a slice out of the wild life itself and place it in the museum, where for generations to come the people of the future as well as those of the present may see creatures of other portions of the globe, or such as may in their day have become extinct, apparently in life and enjoying their own chosen environments.

The American Museum of Natural History, of New York city, has been a pioneer in this, the new taxidermy. During the period when the late Jeness Richardson was chief of the taxidermy department, these group cases showing the home life of a pair or more of birds of some species began to appear.

At that time the late Mrs. Mogridge was introducing her methods of accessory work, which beautifully supplemented the fine skill in lifelike mounting of specimens with very perfect reproduction of natural environment in every detail. One of the early cases of this style was a group of little blue herons, with their nests, eggs, and young, in a mangrove. These nests were taken in the mangrove swamps of Florida by Mr. Richardson, packed, and brought North. In addition, the bushes in which they were found were collected, cut in sections, numbered, and brought home with the nests. The result was that the materials that made up the scene in the Florida swamp were transported into the New York museum, and there accurately reproduced the same scene to the smallest detail.

Since Mr. Richardson's time these methods of reproduction of the home life of natural groups of wild birds have been elaborated and developed. Mr. Frank M. Chapman, Assistant Curator of Birds and Mammals of the Museum, has the supervision of this work. For the past few years an attempt has been made to obtain material for cases of such birds as were getting scarce and liable to become extinct, or of groups whose natural habitat made them inaccessible to the observation of the general public. With this end in view, Mr. Chapman has made summer excursions to the haunts and breeding grounds of such birds, and there has gathered as exhaustive series of photographs as possible, showing the details of their home life, in addition to specimens and other material for cases and very complete observations on conditions and habits. These have contributed to the public knowledge, not only by means of the object lessons that the cases afforded, but by illustrated lectures and magazine articles as well, for which the photographs furnished illustrations.

Had such a course seemed feasible to the museum scientists of a generation ago, several species of birds which have since become extinct, and of which we now know very little, might be represented in accurate group cases in the museums illustrating their habits and environments, while our libraries would give us facts where now we have little more than conjectures.

In the summer of 1904 Mr. Chapman secured the material, photographs, and studies for one of the most remarkable groups that has ever been presented to a nature-loving public. Ever since the American flamingo had been known, there had been an element of mystery about the life of this striking bird. Eggs had found their way into the stocks of dealers, and from there into our boyish collections; rumors came to us that the birds built adobe homes which they straddled, with their long legs dangling awkwardly on either side. The flamingoes are exceedingly shy and retiring birds, and had often defied the efforts of the gunner to secure them, yet Mr. Chapman succeeded in erecting a blind, right in their very midst, making an elaborate series of photographs and a very complete study of the birds, natural and at ease in their homes. He exploded the notion that the flamingoes, while incubating, straddled the nest, his photographs showing the birds sitting on top of their nests with their long legs doubled under them in a perfectly normal manner. The tops of the nests may measure nearly a foot in diameter, while the bird's legs are placed only about three inches apart, hence such a position as that formerly ascribed to them is readily seen to be incongruous.

Almost at arm's length Mr. Chapman observed the