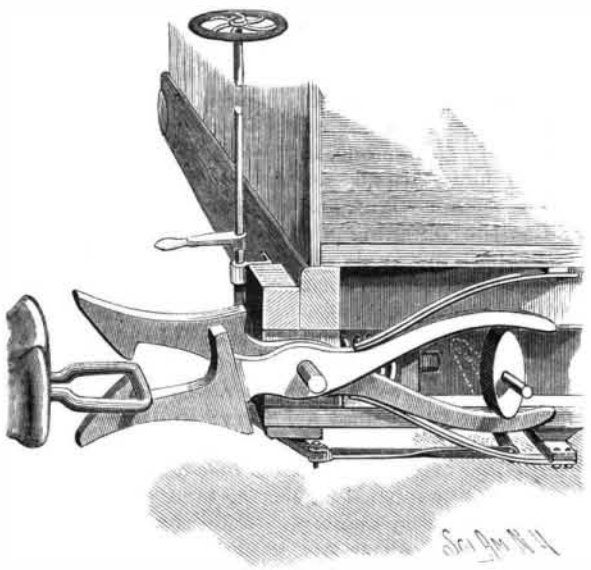
AN IMPROVED CAR COUPLING.

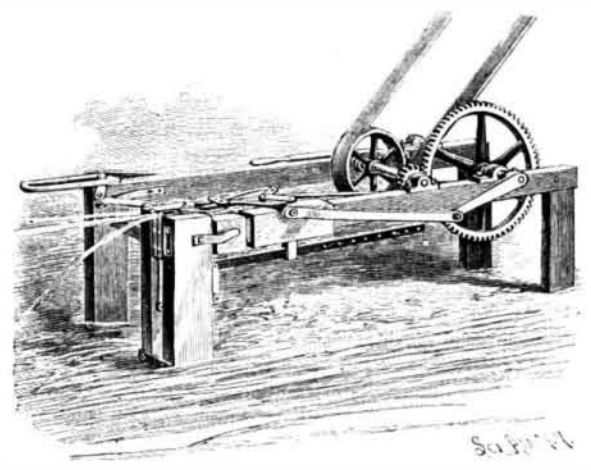
The device shown in the illustration is designed to act automatically in coupling cars, and afford ready means of uncoupling them from the tops or sides of the cars, thereby avoiding danger to the train men.



ARMSTRONG, BIGELOW & OSBORN'S CAR COUPLING.

The drawhead proper consists of two similar crossed sections, their outer ends having projecting jaws and latch hooks, and their inner ends having curved limbs, while the sections are pivoted on a transverse bolt in sliding blocks. The latter have slots to accommodate a bolt carrying a spiral spring on each side, and interior coils are preferably employed therewith in connection with the buffer plates. The springs in the sliding blocks are designed to hold the coupling sections normally projected a sufficient distance to permit free action of the latching portion of the drawhead. In order to hold the coupling sections in closed position, two curved plate springs, suitably connected with the car body, are made to bear on the top and bottom rearwardly extending curved limbs of the coupling sections. To spread the jaws and release the coupling, a cam block is supported between the limbs on a transverse shaft, there being on one side of such block a crank arm, to one end of which a connecting bar is loosely secured. The forward end of the latter bar engages a horizontal crank arm on the lower end of an upright shaft extending above the top of the car, where there is a hand wheel, by operating which the cam block is turned to spread the inner limbs of the coupler sections, and thus uncouple the cars. A lever is placed on the upright shaft, within convenient reach from the ground, whereby the uncoupling may be readily effected from the side of the car. The illustration shows also how this coupling may be employed in connection with a link and pin, a T-shaped link being then employed, which is gripped by the latch jaws, the other end of the link being adapted for attachment to the common drawhead.

For further information relative to this invention address Messrs. Armstrong & Bigelow, No. 110 Whitelsey Street, Ashland, Wis.



CURTISS' HOOP SHAVING MACHINE.

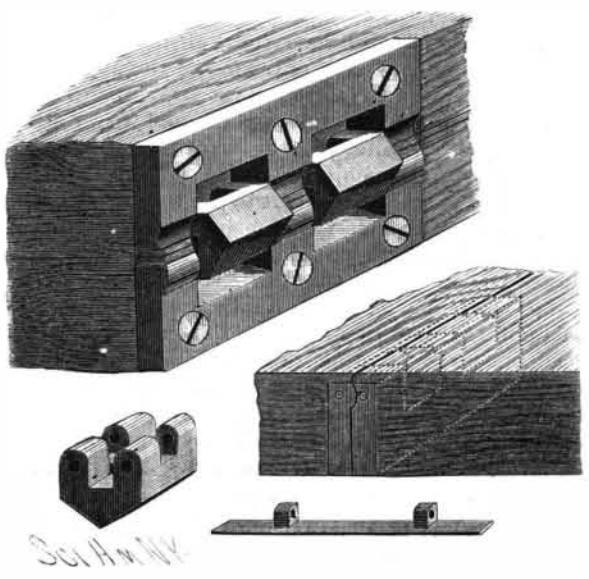
AN IMPROVED HOOP SHAVING MACHINE.

The illustration represents a machine adapted to shave and bevel all kinds of wooden hoops. It has been patented by Mr. William P. Curtiss, of New London, Ohio. The pulley supplying the power is loosely mounted, and has a clutch section adapted to engage a similar section of a clutch splined to the shaft, whereby the machine can be started or stopped as required, the shaft being connected by suitable gearing to the shaft which operates the working parts of the machine. One side bar of the frame has a carriage made in two parts, connected together on the inside by a slotted link, the carriage having tongs attached at the pivot of their jaws to one part, and by their arms to the other part through a toggle joint, the pivot of which is attached to a bar of the carriage connected with the pitman extending to the crank of the operating shaft. To the inside of this leg of the frame is pivoted the lower end of a post which is connected at its upper end with one end of a horizontally extending toggle joint, the other end of which is pivoted to a spring attached to the other side of the frame, and also projects beyond such pivot to a pivot in a slot of a slide on the frame, this slide being connected by a pitman with a crank on the other end of the operating shaft. To the top of the first leg and post are attached the shaving knives, and in proximity therewith are arranged springs to guide the hoop and a strip to prevent it from getting out of place, there being attached to the front of the leg a vertically moving slide carrying a plate to which are attached beveling knives. The end of the hoop strip being inserted between the shaving knives, the revolution of the operating shaft starts the inner end of the two-part carriage to straighten the toggle and close its jaws upon the hoop strip, the continued motion drawing the hoop its entire length between the knives and shaving it throughout. When the hoop is nearly shaved, a clip on the carriage strikes a pin whereby the beveling knives are raised to taper and cut off the hoop, the point at which this is effected being readily regulated.

AN IMPROVED HINGE.

The hinge shown in the illustration, which has been patented by Mr. McGuire Slane, is mainly designed to be used on pianos and fine furniture, including cabinet ware of different kinds, although adapted likewise for a general variety of work. It is a hinge which may readily be used either as an invisible or concealed one from the outside, or as a flush hinge, not requiring to be set deep in the wood. To make the hinge a convertible, invisible, and flush one, each leaf section is provided with an inner longitudinal cover having lugs on its inner surface, as shown in one of the small views, these lugs being arranged to be intermediate of the arms of the leaves, and to receive between them and the arms the links or yokes, shown in another small view, that unite the two joint pins of the hinge. With this arrangement the joint portion of the hinge is fully covered on the outside by the longitudinal covering strips, so that when the hinge is a flush one no joints in transverse arrangement to the joint pins will be seen. When the hinge is used as an invisible or concealed one, the recesses to receive it are not made through ones, but stop short of the outside surfaces, leaving a covering piece of wood over the longitudinal marginal portion of the hinge on which the joint pins are arranged.

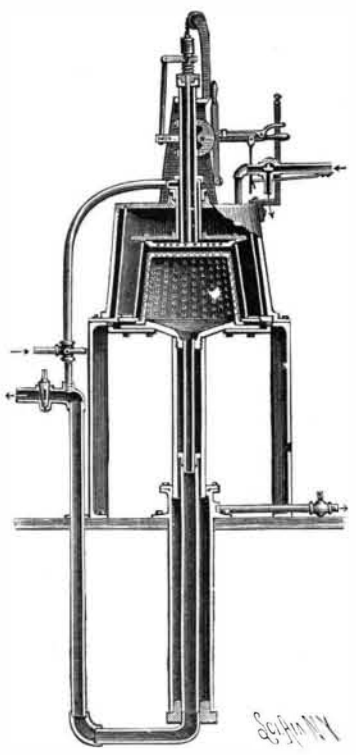
For further information relative to this invention address the Invisible Hinge Co., No. 818 Chapel Street, New Haven, Conn.



SLANE'S HINGE.

A MACHINE FOR MAKING ARTICLES FROM PULP.

The illustration represents a machine for making pails or tubs and like articles from pulp, in which suction is employed to draw the fiber into the mould, and to extract the water from it, while steam, compressed air, or other fluid under pressure is employed to press and form the pulp into its required shape within the mould. It is a patented invention of Mr. Charles M. Starr, of Edwardsburg, Mich. The outer chamber, into which the compressing fluid is introduced to effect the moulding, is in the form of a frusto-conical hood, its lower base flange secured to the top of two or more uprights from the floor, and there being held within it a conical perforated sheet metal distributer for the compressed air or other fluid under pressure. The inner perforated frustum of the mould has a perforated and flexible sheet metal cover or gauze applied to its sides only, and an outer cover of woven cloth, while a rubber bag is arranged at a suitable distance around such inner frustum, such bag being suitably secured below, and at its top secured to the under side of a hollow and perforated cap or die part, which serves to form the bottom of the pail. Centrally beneath the frustum is the cylinder of the hydraulic device and its elongated tubular piston for raising the frustum into its moulding position within the outer chamber, communication being established by pipes through the tubular piston with the interior of the frustum at its base. An air pipe leads to a short vertical tube at the top, whereby suction is produced in the mould by means of a pump, and within this tube is an upright sliding tube or hollow shaft through which the pulp is supplied under pressure, being admitted under control of a hand lever to the mould. When the mould is full, and the die cap lifted by the pressure below it, the supply of pulp is automatically shut off. When charging the mould with pulp, the pressure to act upon the pulp in the mould is preferably only admitted gradually, that the pulp may be more regularly and perfectly compacted, and this is effected by means of a clockwork escapement mechanism applied to a cock in the pipe which conducts the compressed air or other pressure medium to the mould.



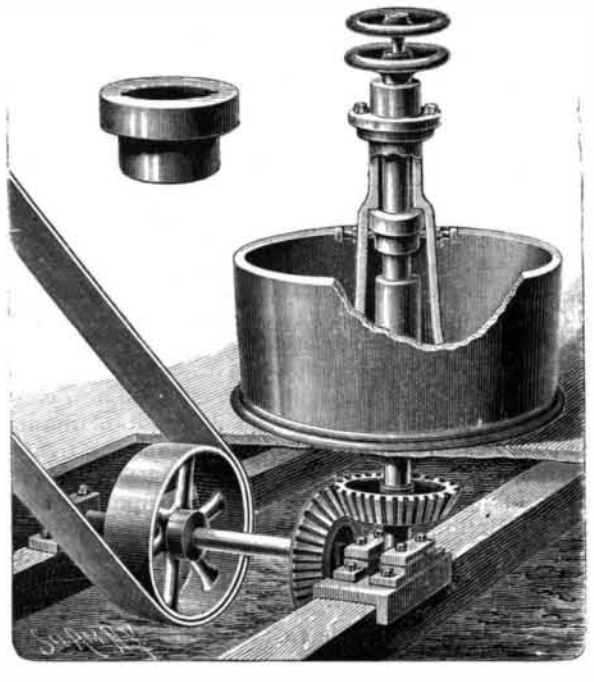
STARR'S PULP PRESS.

Water Courses—Rights of Owner of Land on which is a Spring.

The purchaser of land on which is a spring acquires as to the spring the rights of a riparian owner only. He can use it for any necessary and proper purpose incident to the land itself and essential to its enjoyment, but cannot divert the flow of it on the land of another for any purposes without answering in damages. Lord vs. Meadville Water Co., S. C. Pa. 20 Pittsb. Leg. Jour., 413.

AN IMPROVED COLLAR FOR GRINDING PANS.

The illustration represents an improvement in mining machinery of that class in which a muller is rotated in a pan by a driver mounted on a central power shaft, such as pan amalgamators, settlers, crushers, pulverizers, etc., the improvement consisting in the novel collar, shown in the small view, encircling the shaft carried by the driver. It is a patented invention of Mr. Theodore A. Washburn, of Gold Hill, Nevada. Above the power gearing and shafting, after the usual plan, is the pan with muller and cone center, around which is the driver extending up to the driver cap, the central driver shaft being feathered in the driver, and there being adjusting screws at the top. The collar lies within the driver, and has a flange on its periphery. It is featherwayed on the driver shaft, so that it will slide up and down as the shoes and dies wear, and through the driver passes three seven-eighths inch steel set screws, with jam nuts, under the flange of the collar, so that the collar will move up and down with the driver, thereby preventing the driver and muller from swinging out of their proper course. The collar, being a separate piece, can be readily renewed when necessary.



WASHBURN'S ADJUSTABLE COLLAR FOR PAN DRIVERS.

Untidiness and Ruin in Shops.

Whether it is that untidiness leads to ruin or that a manufacturer who is losing money has not the moral stamina to keep things in trim, thrifty shape is a hard matter to determine, but true it is that untidiness in the shop and office and ruin are such close friends that they are ordinarily seen together, and the sight of one suggests the other. We have often seen men of rare industry, judged by their hustling manner, who would spend much time each day looking for tools they had forgotten where they left, stumbling over piles of stray castings left under the lathe or piled on or under the bench, or pawing those castings over for a piece somewhere in this pile or that, when it ought to be in a place by itself, going from tool to tool or bench to bench to find or borrow a drill or wrench or hammer or block, when there should be just one place to find the desired article. And when the articles are found, he never thinks of returning them to their proper place. In fact, there will be no "proper place" for tools in such a shop, and the next man who wants them will go on the same hunting expedition about the shop. Such a shop will always have black and dirty walls and ceiling, with windows splattered with dirt and decorated with cobwebs, notwithstanding that the light is so bad that careful work is rendered impossible or tedious of accomplishment, when a few pence worth of lime and a brush would whiten the walls and ceiling, and greatly improve the light, and so expedite and improve the work. Money and time are lost and ruin invited by a neglect of these things.

But the greatest loss experienced by this deplorable and needless state of things is in the *morale* of the shop. Workmen compelled to work in a dingy, ill-kept, and ill-lighted shop will suffer loss of ingenuity, loss of ambition, loss of self-respect and respect for their employer and his interests. If they are forced to work at disadvantage the stimulus to activity and ingenuity suffers a gradual decay, and no one will pretend to deny that this decadence on the part of the workman is not a direct money loss to the proprietor.

Tidy workshops stimulate manliness and ingenuity on the part of workmen, and right here may be found the profit on the year's business, or if neglected the year's losses. There are plenty of establishments, east as well as west, which, by a careful attention to these matters—which they regard, in fact, as non-essential—could easily increase the efficiency of their workmen 10 per cent, and that per cent would determine the difference between a profit and a loss.—*The Pottery Gazette.*

An English Mummy.

A tomb has recently been opened in Canterbury Cathedral, for the purpose of discovering which of the archbishops it is whose body it contains. This is known to be one of three: Theobald, who died in 1139; Hubert Walter, who died in 1204; and Stephen Langton, who died about 1227. The investigation has not settled the point in dispute to the entire satisfaction of everybody; but the Society of Antiquaries in London have decided that the evidence is in favor of the body found in the tomb being that of Hubert Walter, who died in 1204, or nearly seven hundred years ago. The body found in the tomb, though it has been lying there nearly or quite seven hundred years, was in an extremely offensive condition; the smell arising from it was quite sickening, and unmistakably that of corrupt humanity. A number of articles of great antiquarian interest were found in the tomb and removed to the cathedral library. Most of them were in an excellent state of preservation. They were a silver chalice and paten as good as new, the archbishop's pastoral staff, a gold ring with large emerald having a curious device, silk boots ornamented with gold thread and garnets, a yellow silk miter, and embroidered stole.

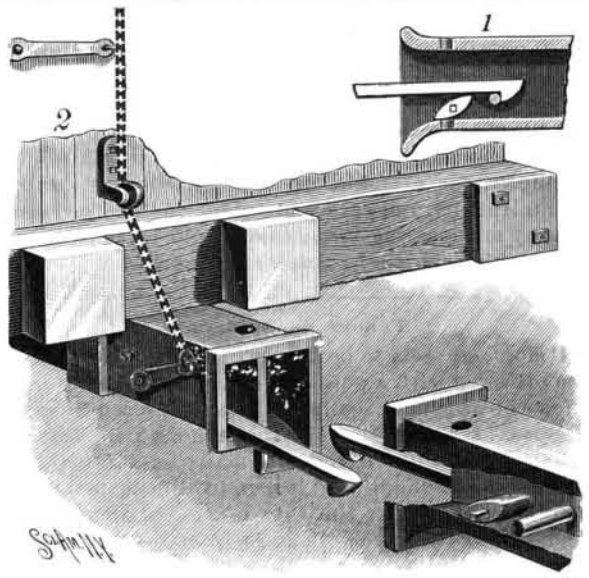
It appears to be easier to identify the remains of a distinguished personage of Egypt, who died four thousand years ago, than that of an English prelate dead for only seven hundred years. It might not be a bad idea to engrave upon the interior of the sarcophagus the name of the deceased.

British Patents in 1889.

According to the report of the Comptroller-General of the Patent Office for the past year, which has just been issued, the number of applications for patents in 1889 was 21,008, as against 19,103 in 1888; so that in the single year the number increased by nearly 10 per cent. The number of applications from the United Kingdom was as follows: England and Wales, 14,598; Scotland, 1,030; Ireland, 362; Channel Islands, 22; Isle of Man, 7—or a total of 16,019. The total number from British colonies and possessions was 343, of which Canada takes the largest number—100. For Europe there were 2,729 applications, of which Germany sent 1,336 and France 667; from Asia, 26; from Africa, 15; from America 1,875, of which the United States sent 1,857; and the Sandwich Islands, 1. The balance sheet shows that the receipts from fees amounted to £151,794; while the sale of publications brought £6,278. The total receipts (including the fees received for designs and trade marks) amounted to £172,820; the expenses to £79,286. The surplus for the year was £93,534.

AN IMPROVED CAR COUPLING.

The accompanying illustration represents a device designed to automatically couple cars, and with which they may be disconnected from the side or roof, while affording means of connecting cars by a link and pin attachment in case of accident to the improved device. The drawhead cavity is divided by a partition wall, and the hook bar is pivoted in the smaller compartment, on a transverse bolt which passes through both compartments. The lower wall of the drawhead at its front end has a downwardly and outwardly curved lip, producing a guiding incline for the entry of the hook bar of a similar coupling. In front of the bolt on



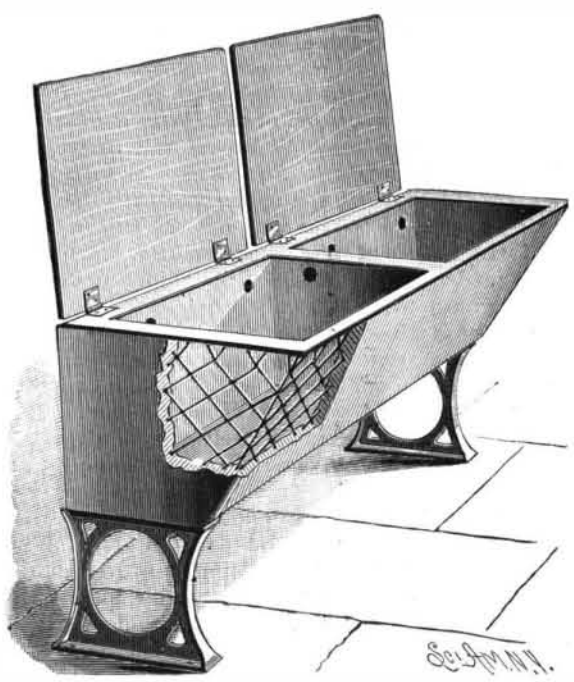
WILLIAMS & EDELSTON'S CAR COUPLING.

which the hook bar is pivoted, and nearer the bottom wall of the drawhead cavity, is journaled a rock bar, adapted to engage and vibrate the tripping blocks, as shown in the small view, one of these blocks being located in each of the compartments, whereby a limited oscillation of the rock bar will simultaneously elevate both of the tripping blocks sufficiently to release the hook bars of the engaged couplings. On the projecting end of the rock bar, at one side of the drawhead, is a rock arm having a chain connection with a depending pull bar supported near the roof of the car by sliding engagement with a bracket plate, there being also connected to this chain a horizontal lever pivoted on the end of the car, whereby the rock bar may be vibrated from either the top or the side of the car. The drawhead is vertically perforated near its front end to receive a coupling pin, thus providing means for the use of the ordinary link and pin coupling.

For further information relative to this invention address the patentees, Messrs. John J. A. Williams, No. 132 Fourth Street, and George J. Edelston, No. 617 Canal Street, New Orleans, La.

IMPROVED CEMENT SINKS, WASHTUBS, ETC.

The invention herewith illustrated, patented by Mr. John Moore, provides a novel manner of making washtubs, sinks, and other vessels of cement in combination with metal strips and woven wires, the wires being embedded in the cement to give strength and durability to the whole structure. The metal skeleton or frame consists of a continuous metal cap strip, which forms an outside protector to the rim or top of the vessel to keep the cement from being chipped. The cap strip is preferably made of a flat strip of pliable metal bent or doubled under on its opposite edges to give additional strength and present a good edge finish. The wire netting embedded within the cement is permanently soldered or fastened to the cap strip at the upper portions of the wires on opposite sides of the vessel, the wires being united below or at the bottom of the frame by doubling or twisting them around one another, or otherwise, the entire frame being thus compactly held together for the running of the cement about the wires.



MOORE'S CEMENT SINKS, WASHTUBS ETC.

For further particulars relating to this invention address the Union Granite Co., Guttenburg P. O., Union Township, Hudson County, N. J.

Furniture Beetles.

In the entomological part of the forty-first annual report of the trustees of the New York State Museum of Natural History, lately published, reference is made to the statements which have been advanced as to the long imprisonment of beetles within furniture. The writer suggests that when such cases occur the conditions may bring about a lethargic state, in which respiration and accompanying phenomena are almost or entirely suspended through the complete exclusion of air (a hermetic sealing) by the rubbing, oiling, varnishing, or other polishing which the furniture has undergone. As an instance of prolonged vitality, he quotes an extract from the third report on the insects of New York, by Dr. Fitch. In this passage Dr. Fitch says:

"In 1786, a son of General Israel Putnam, residing in Williamstown, Mass., had a table made from one of his apple trees. Many years afterward the gnawing of an insect was heard in one of the leaves of this table, which noise continued for a year or two, when a large long-horned beetle made its exit therefrom. Subsequently, the same noise was heard again, and another insect, and afterward a third, all of the same kind, issued from this table leaf—the first one coming out twenty, and the last one twenty-eight, years after the tree was cut down."

The evidence before Dr. Fitch convinced him that the insect was the longicorn beetle *Cerasphorus balteatus*, now known as *Chion cinctus* (Drury).—*Nature.*

An Old University.

The celebration of the six hundredth anniversary of the foundation of the University of Montpellier has been, according to *Nature*, most successful. All the great technical schools of Paris and the French provinces were represented, and deputations from many foreign universities were present. The proceedings began on May 22, when there was a great reception in the university hall. M. Chancel, the rector, welcomed the guests, and Professor Tedenat sketched the history of the university and its most celebrated professors. On the following day M. Carnot arrived. The delegates of foreign universities, followed by those of the great French schools, marched from the University to the Prefecture to be presented to the President of the republic, and if we may judge from a description by a correspondent of the *Times*, the procession must have been a remarkably interesting spectacle, the French and foreign professors being in robes of the most varied colors. The pavement and balconies along the route were crowded by men, women, and children. After the ceremony at the Prefecture the company proceeded to a park overlooking the town, commanding a view of the Cevennes on one side and the Mediterranean on the other. Several speeches were delivered under an awning. The rector of the university thanked the president for having honored the celebration by his presence. M. Croset gave a history of the university, and dwelt on the great trade of Montpellier in the middle ages, and its relations with the Arabs and Jews. Its most flourishing period, he said, was from the twelfth to the fourteenth century, and Petrarch spoke of it as a kind of ideal university. It made special progress in studies based on the observation of nature. The delegate of Bologna, the most ancient university represented, thanked M. Carnot for his reception of the foreign delegates. M. Bourgeois, Minister of Education, in a much applauded speech, said the government recognized the justice of the desire expressed by Montpellier and the other great schools to resume the name of university and the privileges associated therewith, and the question would shortly be discussed in the Chamber. We may specially note that the later proceedings included the presentation of an address by French men of science to Prof. Helmholtz, who represented the University of Berlin.

Automatic Photographing Machines.

A curious development of the "nickel (or penny) in the slot machine" has appeared in England. It is proposed to erect automatic photographing machines, corresponding in a general way to the other machines of this class for weighing, selling candy, etc., with which the public is now familiar. In the photographic machines a penny is placed in a slot, the person stands in front of a lens for about five seconds, being notified by the ringing of a bell when to cease posing. By the mechanism the plate is developed and fixed, and in forty-five seconds the photo is passed out to the purchaser. A second slot for halfpennies delivers a frame when one coin is dropped into it. It is claimed that the profit on each photograph is over one halfpenny. The chemicals used are a secret, and it is largely owing to their low cost that the figures given can be realized