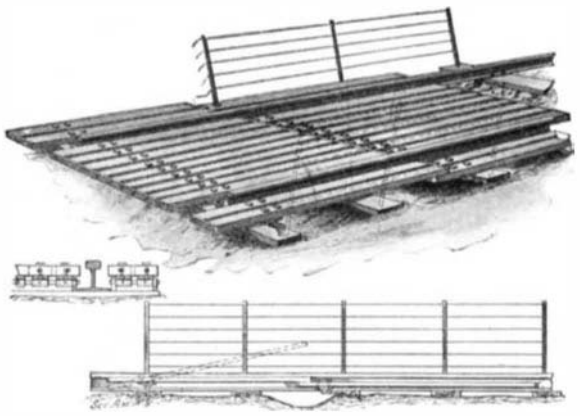
Patent Department

CATTLE GUARD FOR RAILWAY CROSSINGS.

A patent has just been granted to Mr. S. H. Summerscales, of Winnipeg, Canada (Box 737), on a cattle guard for preventing cattle from straying onto railroads from public crossings. The cattle guard is so

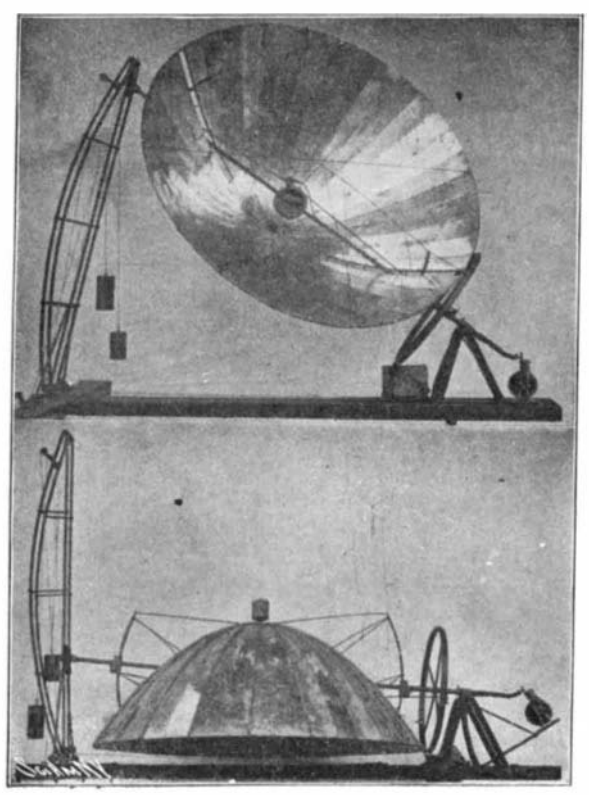


CATTLE GUARD FOR RAILWAY CROSSINGS.

arranged as to frighten the cattle away from the crossings, and thus effectually prevent their passage over them. The arrangement is clearly indicated in the accompanying illustration. At each side of the crossing is a series of hinged platforms, each series comprising a central platform between the rails and two outer platforms, one at each side of the track. These are separately hinged near their forward ends to one of the ties by means of rods passing through brackets on the platforms and supported in eyebolts in the ties. The rear ends of these platforms rest on the forward ends of another and a lower series of platforms. The latter are also hinged near their forward ends, but all on a single rod, and they are so connected as to swing together as a single platform. In operation, when an animal strays from the crossing and steps on the forward end of one of the platforms, the other end will fly up in front of it, and tend to frighten it away. But if this is not effective, and the animal proceeds past the hinge, the weight imposed on the forward end of the lower series of platforms will cause them all to rise in front of the animal, and thus effectually scare it off. A fence along each side of the railway prevents the animal from straying onto the track without first passing onto the hinged platforms.

SOLAR MOTOR.

A solar motor which has recently been invented by Dr. E. P. Brown, of Cottonwood Falls, Kans., is illustrated in the accompanying engraving. The apparatus embodies some very useful improvements over solar motors as heretofore constructed. The large reflector may, in time of storm, be reversed and lowered as indicated in one of the figures, when it will present much less resistance to the wind, and thus escape injury or destruction. The invention also comprises other improvements, as will appear from the description of the

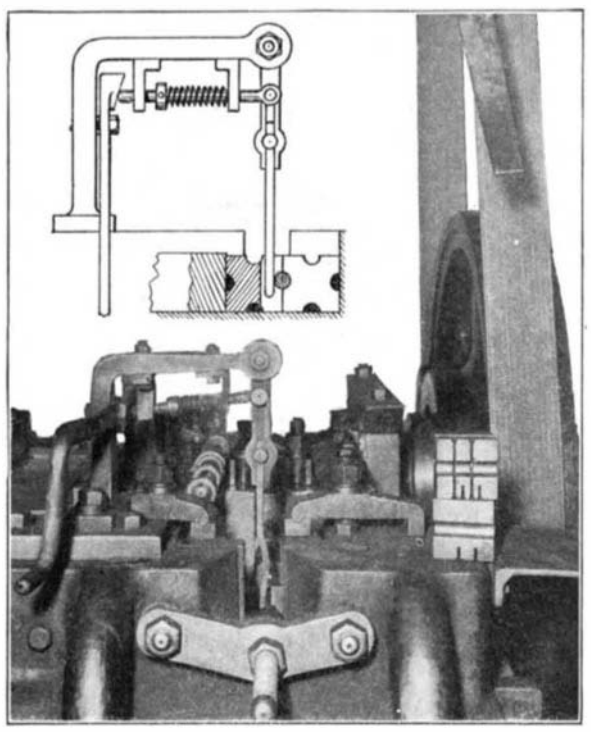


SOLAR MOTOR.

construction. Pivotally mounted at the left end of the base frame is a tower formed with two guide rails, on which a slide block is adapted to travel. The block is raised or lowered to the desired position by means of a rope attached thereto, which passes over a sheave wheel at the top of the tower, and is wound up on a drum at the base. The block supports one end of a tubular shaft, which at the opposite end is supported in a swivel bearing carried on a bracket fastened to the base frame. The reflector is mounted on this shaft by means of a pair of segmental racks, secured to the reflector and adapted to mesh with suitable gearing carried in blocks on the shaft. The shaft at the center opens into a spherical boiler at the focus of the reflector. Steam generated in the boiler is conducted by a pipe passing through the tubular shaft to an engine shown at the extreme right in the engraving. The tubular shaft carries a sprocket wheel, which has chain connection with gearing operated by a clock mechanism on the base frame. The clock train is driven by a weight suspended from the pulley at the top of the tower, and at intervals of two minutes it releases the reflector, which thereupon is rotated through a small angle by a second weight similarly hung. By this means the reflector is made to always bear the proper relation to the sun, so as to focus the sun's rays on the boiler. The vertical movement or inclination of the reflector is attained by operating the gearing which meshes with the segmental racks on the reflector.

ATTACHMENT FOR BOLT-HEADING MACHINES.

A useful attachment for bolt-heading or upsetting machines is shown in the accompanying engraving. It is a device for holding the metal blank in place until

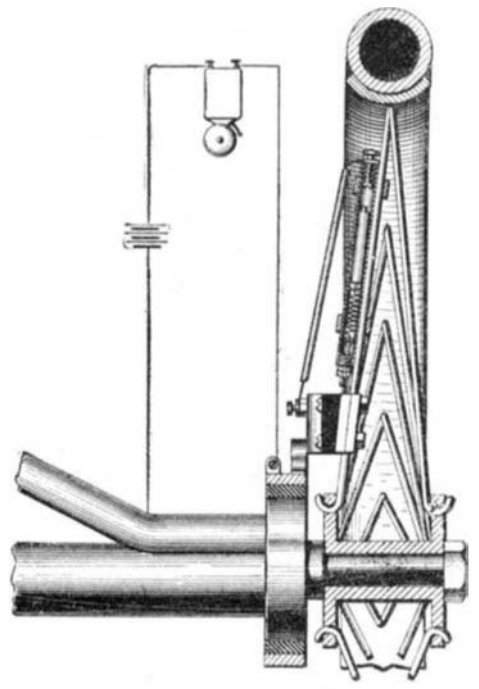


ATTACHMENT FOR BOLT-HEADING MACHINES.

the movable die is moved up to the work, thus permitting the operation to be much more rapidly performed than usual. The attachment comprises a bracket secured to the bed-plate of the machine, and which carries a supporting bar suspended over the dies. Secured to this bar is a finger adapted, when in operation, to hold the work in a fixed die. Mounted in hangers on the main bracket is a spring-pressed rod, which at its outer end is pivotally connected to the supporting bar. A lever mounted on the main bracket carries at its upper end an inclined or cam surface, which bears against the spring-pressed rod. In operation the blank on which the head is to be formed is placed from the front in the channel of the fixed die, and then the cam lever is operated either by hand or foot power to move the spring-pressed rod, so that it will swing the finger into engagement with the work. While so held, the movable die is closed by the machine, and then the heading and upsetting operation is done. As the movable die moves toward the fixed die, a slot in the former will receive the lower portion of the finger. After the operation on the blank, the movable die moves back, enabling the work to drop out, which, of course, relieves the pressure from the finger upon releasing the cam lever. Any length of bolt or rivet may be formed in a machine provided with this device by employing an adjustable abutment in the form of a screw, with the inner end passing into the die to engage with the end of the work. It will be evident that with this attachment work may not only be turned out rapidly, but there will be no waste material, as all short pieces can be used up in short work. Mr. Joseph Skelton, 413 King Street, West Melbourne, Australia, is the inventor of this attachment.

ODDITIES IN INVENTION.

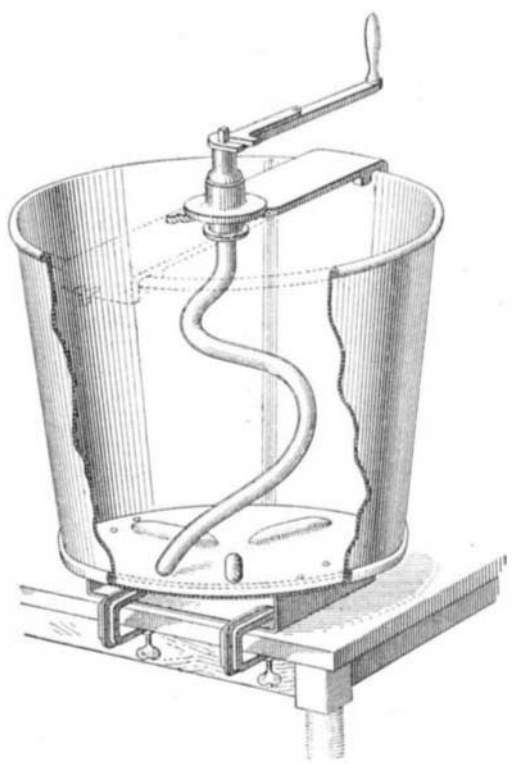
SPEED-INDICATING ALARM.—A device has just been invented for notifying an automobilist, by the ringing of a bell, when his vehicle is exceeding a pre-deter-



SPEED-INDICATING ALARM.

mined speed limit, such, for instance, as the maximum limit fixed by law. It consists of a tube secured to the wheel of the vehicle and carrying a sliding weight therein, normally held against the inner end of the tube by a coil spring. When the wheel is in motion, the weight is thrown outward by centrifugal action, a distance varying with the speed of the wheel. When the speed limit is reached, the weight is thrown far enough to engage and make electrical contact with a screw held in an insulating block in the outer end of the tube. This screw connects with a contact piece on the wheel which, at each revolution, engages a stationary contact on the vehicle frame. The circuit is thus completed to an electric bell, or an electric lamp if desired, to draw the attention of the automobilist. The tension of the spring may be adjusted to provide for any speed limit desired.

BREAD MIXER AND KNEADER.—A Connecticut inventor has just received a patent on the improved bread kneader which we illustrate herewith. It comprises a vessel, formed with a clamp-receiving socket underneath its bottom, by which it may be permanently secured to a table or the like. At the top of the vessel is a detachable crosspiece, in which the operating crank of the machine is journaled. Depending from this crank is the beater, composed of a rod, bent to the form indicated. When the beater revolves through the mass of dough in the vessel, the dough is rolled over and over by the beater. If, however, the dough is too stiff to stick to the bottom of the vessel, it will be carried round and round without any rolling action. To prevent this the inventor has formed a number of fin-

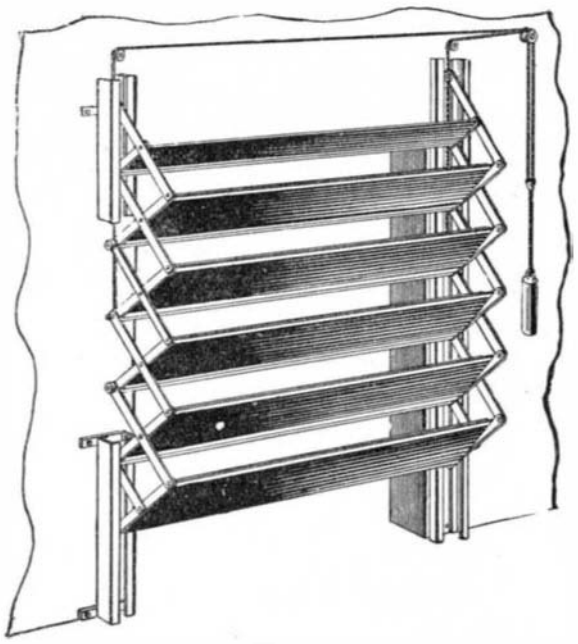


BREAD AND DOUGH MIXER.

gers in the bottom of the vessel, which impede sliding movement of the dough, and insure being rolled by the beater.

FOLDING DOOR.—The accompanying illustration shows an improved folding door, which operates somewhat on the lazy-tongs principle. It comprises a series

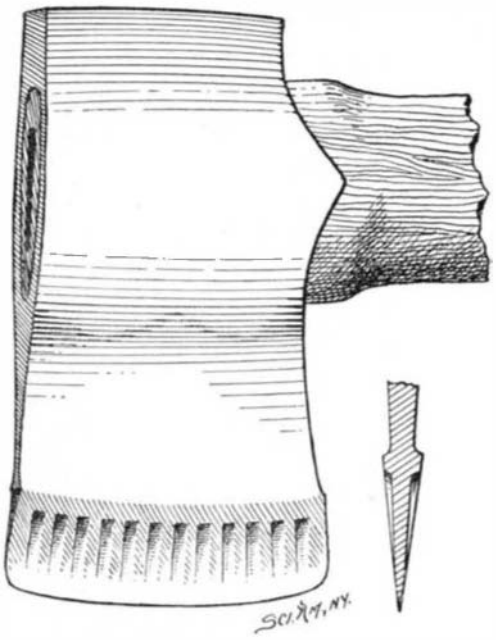
of door sections, which are secured at their outer ends to a series of bars joined to form lazy-tongs. The upper members of the lazy-tongs are pivoted on fixed pins, and the inner joints of the lazy-tongs carry rollers, which engage grooves in the vertical guide pieces



FOLDING DOOR.

provided at each side of the door frame. The guide pieces at one side are broken away, in the illustration, to show detail. A counterweight is secured to a couple of cords, which pass over pulleys at the top of the door frame and are attached to opposite sides of the folding door near the center. The travel of the counterweight, it will be evident, amounts to one-half of the travel of the lowest door section, due to the multiplying motion of the lazy-tongs. A person may thus, by a short pull on the counterweight, raise the door to its full open position.

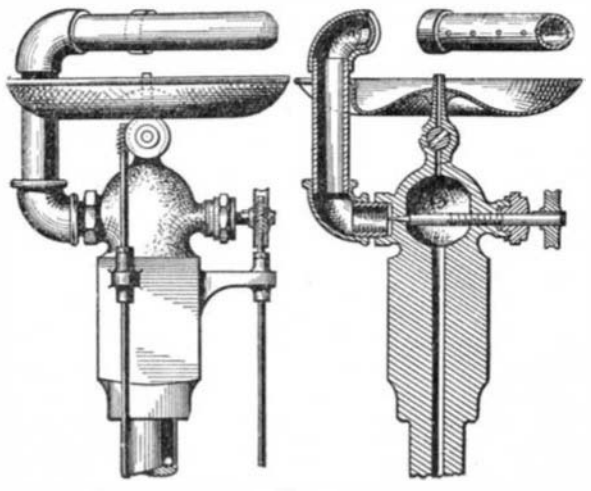
AX HEAD.—A Pennsylvanian has recently devised a new type of ax head adapted to reduce friction between the ax and the wood, by reducing the bearing surface



NOVEL AX-HEAD.

of the ax to a minimum. A series of grooves or recesses are cut in the face of the ax close to the cutting edge and back of these grooves the face is hollowed out as indicated in the accompanying illustration.

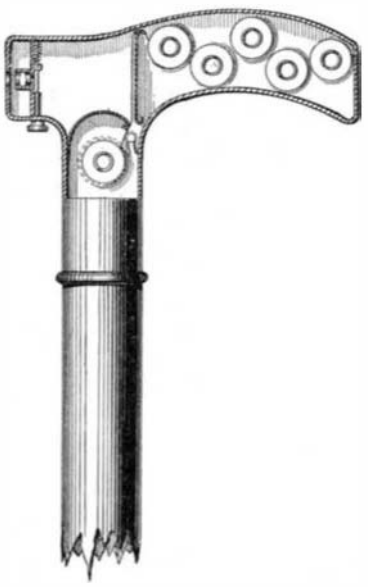
FLASH-LAMP.—We show herewith a convenient type of flash-lamp arranged for producing light by the burning of chemicals. From the sectional view it will be seen that the lamp comprises a burner head,



FLASH LAMP.

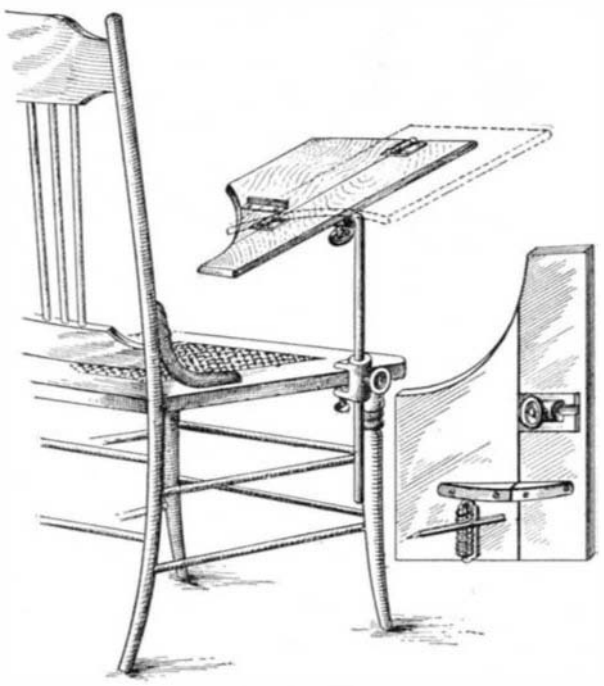
consisting of a central chamber provided with two valved ports, one leading up to a nozzle which projects centrally through a pan at the top of the lamp, and the other to a coil of pipe lying above this pan. The coil is provided with a series of openings on its underside, through which the chemicals may pass out onto the pan. In operation the chemicals, which are supplied to the central chamber of the lamp, may, by proper manipulation of the valves, be permitted to pass up either through the nozzle, or through the coil, where they will be ignited. In the latter case a ring of flame will be produced above the pan. For the purpose of adjusting the valves when the lamp is supported above the reach of the hand, operating rods are provided which have worm gear connections with the valve stems.

CANE-HANDLE CAMERA.—A German inventor has recently produced a magazine camera, which is contained within the handle of a cane. Cane-handle cameras were invented a dozen or more years ago, and were designed especially for travelers. However, they proved impracticable, owing to the fact that but a small supply of plates or films could be carried at a time in the cane. The camera illustrated uses rolls of films, a number of which may be stored in the hollow crook of the handle. The film passes from its roller in the magazine over a plate, which guides it in the focal plane for exposure, and thence it is taken up on the receiving spool in a chamber below. When the entire film has been exposed upon the receiving spool, the side face of the cane handle is removed. The exposed film roll is then taken out, and a new one moved to position for use immediately back of the guide plate.



CANE-HANDLE CAMERA.

BOOK-SUPPORT.—The number of patents on book-supports does not seem to diminish. We show herewith one of the latest inventions in this line. It comprises



BOOK-SUPPORT.

two leaves, hinged together, one of which is secured to an adjustable standard. The other leaf carries a stop piece, against which a book may be supported. When desired, the occupant of the chair may push his book or writing material on to the relatively stationary leaf, and then fold over the movable leaf thereon, so that his work will always be handy when the occupant resumes his seat. The book-stop on the movable leaf causes a space to be formed between the leaves when the book-support is folded. The book-support is provided with the usual vertical and angle adjusting devices, and is secured to the chair by a clamp.

Brief Notes Concerning Patents.

Charles Cranston, of Brooklyn, the inventor of the first under-cutting paper machine used in the United States, died recently at his home in Brooklyn. He was also the inventor of numerous other features of paper machinery, and for thirty years has been the head of a machine plant at Williamsburg. During the war of the rebellion, he was closely associated with President Lincoln and for some time was the chief engineer of the President's yacht. He entertained such pronounced views on the subject of slavery that he narrowly escaped lynching at the hands of a mob during the excitement following the John Brown raids.

Steel fishing rods have been brought to such a state of perfection that they are now being sold extensively in the place of those of bamboo. It is said that they are handier to carry and are better balanced and can be weighted to suit the most fastidious taste. These rods are made of the finest tempered steel tubing, japanned. The eyelets are of German silver wired to the rod. The handle is of cork, the same as used on the wooden rods, but the joints are much superior to those of the bamboo, as the smaller section sinks three inches into the larger one, which makes it practically impossible for the rod to become disjointed when bent in use. It is said that the steel rod is much more sensitive than the wooden one and that every movement of the fish can be felt by the angler.

A patent has been recently issued to A. B. Hunkins, of Winona, Minn., for an improvement in the manner of printing the name and address on newspapers which are to be sent through the mail. The device is to be attached to the perfecting press, and the name and address of the subscriber is printed at the same time that the paper is impressed. The printing wheel by which the impression is made is moved intermittently instead of continuously, as does the cylinder of a press. The new invention makes use of the linotypes made by the typesetting machines which are in general use in all parts of this country. It automatically takes one of these bars of metal from the storage galleys, inserts it in the printing wheel, and after the printing operation is completed, returns the line to the galley. It requires the attention of but one operator, who sets the galleys on the machine and removes them after use. The capacity of this machine is 24,000 separate addresses per hour.

All of the electrocutions which have taken place in the State of New York have been under the active management of Electrician E. F. Davis, who installed the chair and who owns the patents covering the device. These functions have been absolutely dependent on the gentleman's presence; and as the time for one of these affairs approached, there was always a fear that Mr. Davis would fail to be present. He has officiated at the electrocution of over seventy murderers. Two years ago the Legislature of the State appropriated $10,000 with which to purchase the machine and the patent rights, but at that time the inventor refused to sell. Since then, however, Mr. Davis has reconsidered, under the persuasion of Superintendent Collins, and has agreed to accept the sum. The last appropriation having gone by default, it is now necessary to make a new one, and the next session of the Legislature will be asked to do this.

The tower portion of the Madison Square Garden is being remodeled at a cost of $10,000, for the purpose of affording increased laboratory facilities for Cooper Hewitt, son of the late Abram S. Hewitt and the inventor of the system of electric lighting which bears his name. Mr. Hewitt has had his workshops in the tower of the Garden for some time, and it was there that the Cooper Hewitt lamp was developed. The inventor now occupies the first, sixth, and seventh floors, and the improvements which have begun will give him the use of the remaining part of the tower. The alterations call for the entire remodeling of the tower. Additional floors will be put in, and the windows, which are now entirely ornamental, will be supplied with plate glass. The spiral staircase leading to the observation floor will be changed, and fireproof partitions will be erected. The Cooper Hewitt lamp is now largely used for the illumination of photographic studios and shop windows.

For years the planter and the spinner have been united in the hope that some one would invent a "roller" gin that would do the work, while ginners of cotton have recently been eager to get hold of some power capable of making a commercial or "compressed" bale in the ginhouse. It is universally admitted that the saw-gin is almost, if not quite, as barbaric a despoiler in the separation of the cotton fiber from the seed as is the "compress" in forming the bale that is now bought and sold on the exchanges and shipped to the factories of the world. It is contended that the saw-gin actually wastes or destroys over 6 per cent of all the cotton raised in the Southern States. That meant this year the destruction of at least $50,000,000 worth of property belonging to the farmers of the South. Again, it is claimed that by maltreatment and rough handling the saw-gin deprives the cotton fiber of 40 per cent of its tensile strength. Mr. Edward Atkinson says that under present conditions fully 75 per cent of the fiber's initial strength is destroyed.—Thomas Grasty in Southern Farm Magazine.