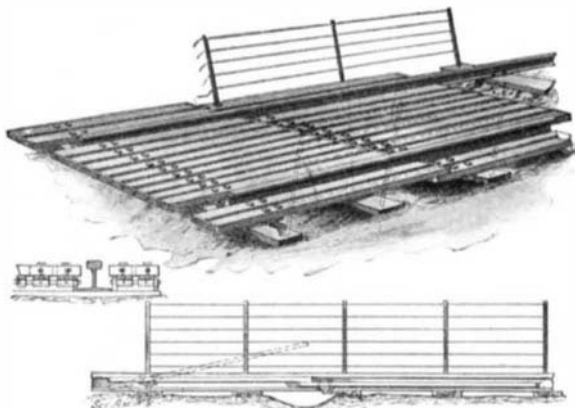




**CATTLE GUARD FOR RAILWAY CROSSINGS.**

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

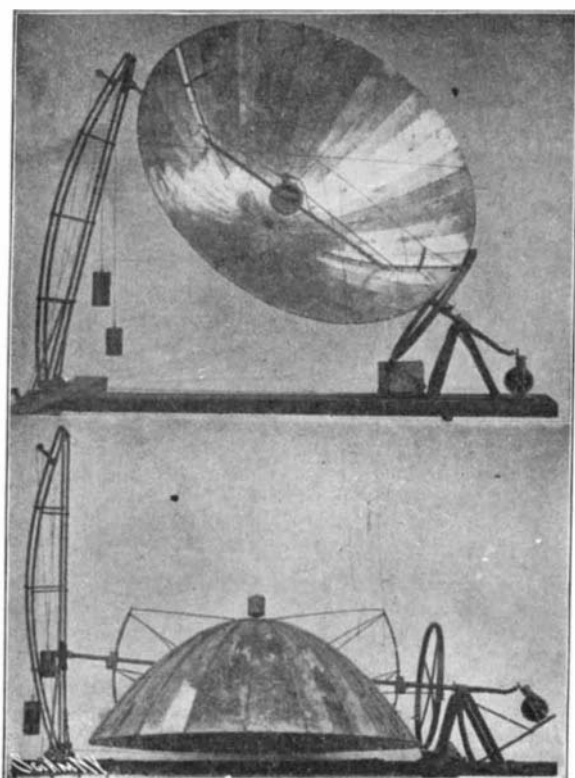


**CATTLE GUARD FOR RAILWAY CROSSINGS.**

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

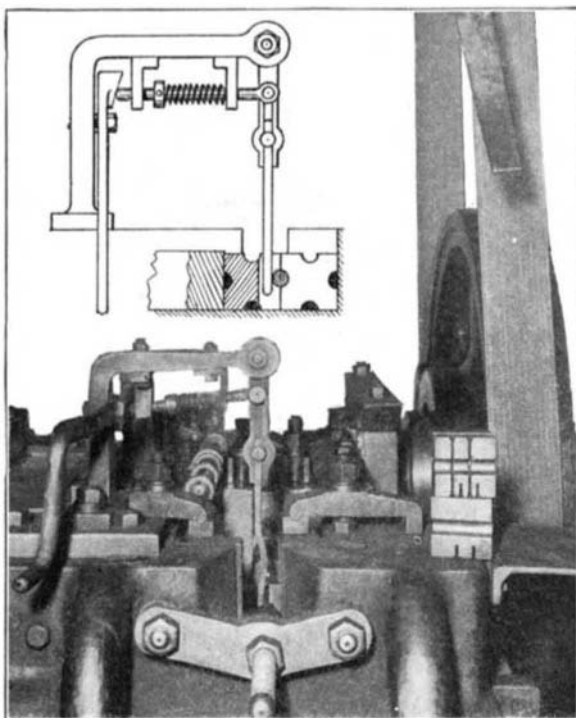


**SOLAR MOTOR.**

construction. Pivotaly 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

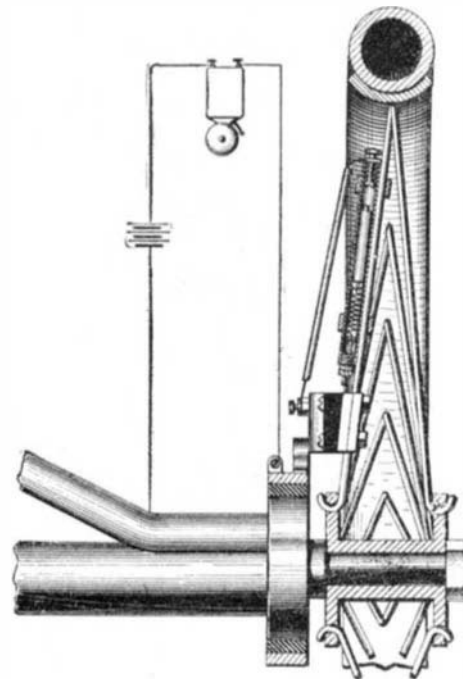


**ATTACHMENT FOR BOLT-HEADING MACHINES.**

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 Shelton, 413 King Street, West Melbourne, Australia, is the inventor of this attachment.

**ODDITIES IN INVENTION.**

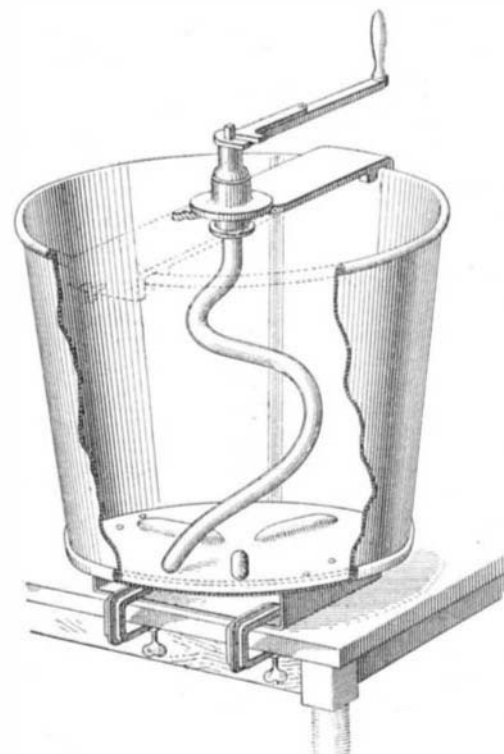
**SPEED-INDICATING ALARM.**—A device has just been invented for notifying an automobilist, by the ringing of a bell, when his vehicle is exceeding a pre-deter-



**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