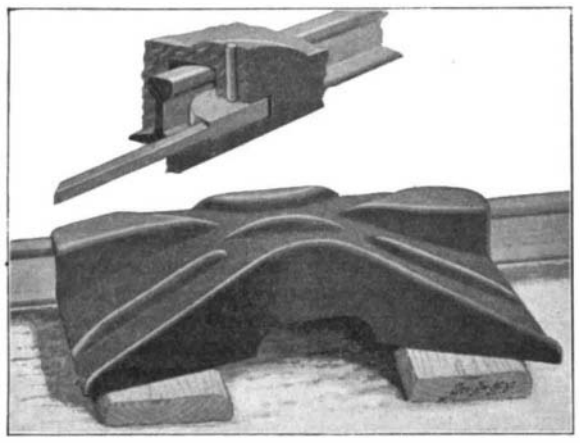
Patent Department

CAR REPLACER.

The accompanying engraving illustrates a car replacer which, while comparatively light, has nevertheless a strong construction and furthermore embodies convenient means for securing it to a rail. Mr. John H. Fowler, of Somerset, Ky., who is the inventor of this simple device, has had practical experience in railway

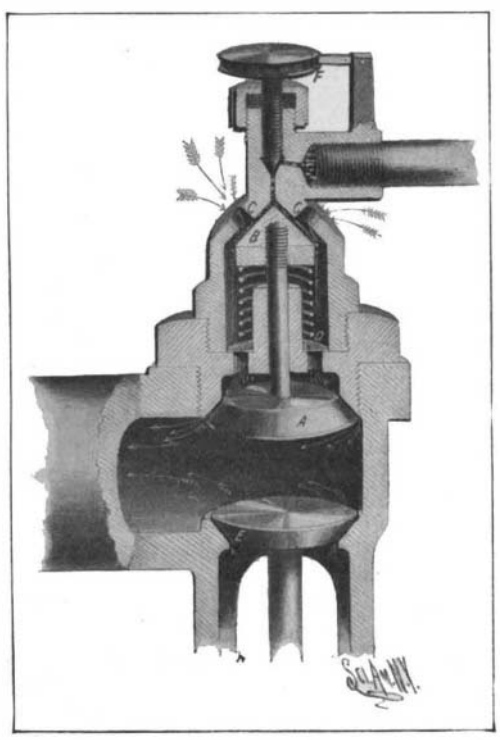


CAR REPLACER.

matters and has made careful study of the business of replacing derailed locomotives and cars. The replacer comprises a platform which is sloped downward from its center in both directions, forming inclined planes which will lead the wheels up to their proper positions on the track. At the outer side the platform is provided with a rib which is curved inward or toward the rail. At the opposite side is a box-like portion adapted to fit over the rail. A locking lever is hinged to the outer wall of the box portion. This lever is provided with an eccentric head for tightly clamping against the rail web. The inclined planes are divided by ribs which guide the car or locomotive wheels in toward the rails. At the top of the incline is a deflecting block. This directs the wheel flange through a groove in the box-like portion to the inner side of the rail, while the wheel is guided to the tread of the rail. The replacer may obviously be placed on either side of the rail and may be made of any desired length or of any desired width so as to replace a wheel from different distances from the rails. The device is preferably made of stamped steel and can thus be made very light and yet have the requisite strength.

MIXING VALVE FOR EXPLOSION-ENGINES.

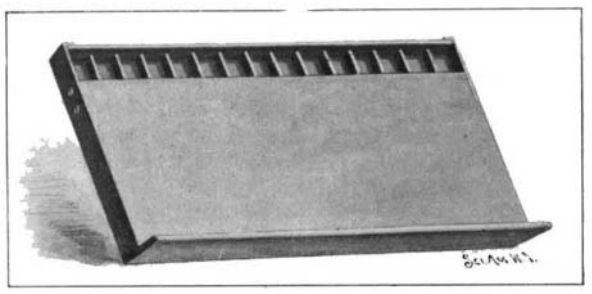
Mr. Maurice Pivert, of 1714 Saratoga Street, New Orleans, La., is the inventor of an improved form of mixing valve for explosion-engines of the four-cycle type. The valve provides a perfect mixture of the air and the gasoline vapor, insuring a powerful and regular explosion of the mixture in the working chamber of the engine. A vertical section of this valve is shown in the accompanying illustration, and its operation is as follows: When the piston in the cylinder of the engine is on the suction-stroke, the valve *A* opens inwardly, drawing down the valve *B* against the tension of a spring. This permits gasoline to pass through a supply pipe into the chamber *D*. On account of the conical shape of the valve *B* the gasoline which is admitted at the apex spreads and flows downward evenly over the sides of the cone. At the same time air is sucked in through the openings *C* and coming immediately in contact with the gasoline is thoroughly mixed therewith. This mixture passes down through a screen in the bottom of the valve chamber *D* and thence passes out into the working chamber and cylinder of the engine, as indicated by the arrows. On the return or compression stroke of the piston the explosive mixture in the cylinder is compressed and finally ignited to send the piston down on the power stroke, and when the piston returns the valve *E* is opened to cause exhaust of the products of combustion from the working chamber to the exhaust chamber. On the next downward stroke of the piston the suction period sets in and the above-described operation is then repeated. When the piston reaches the end of the suction stroke the valves *A* and *B* move immediately to their seats by the action of the coil spring and remain closed until the next suction period sets in. The flow of gasoline into the mixing chamber is regulated by the feed valve *F* which is held against accidental movement by a spring entering notches in the head of the valve.



MIXING VALVE FOR EXPLOSION-ENGINES.

TRANSFERABLE JOB BANK.

A simple form of bank for use of job printers is shown in the accompanying illustration. It consists of a flat, longitudinal slab provided with a rib at its lower end, after the manner of an ordinary type-case. At the upper end is a longitudinal groove divided transversely by means of thin reglets into compartments or boxes. It will be observed that the compartments thus formed are sunken flush with the surface of the slab. This constitutes a great advantage in the invention; for job printers dislike to be annoyed by a multitude of loose receptacles resting upon the surface of the object at which they are at work. In use the bank being placed upon the rack or upon the lower case, as desired, a job galley is laid upon the slab with its lower edge resting against the rib. The printer now places the job form upon the slab and proceeds to apply his leads, slugs, furniture, ornaments, etc., in

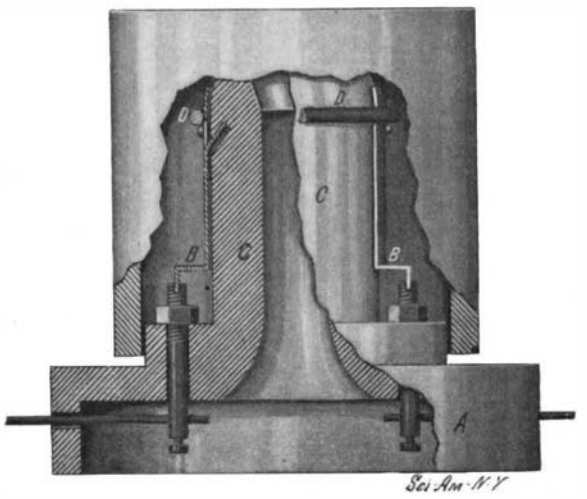


TRANSFERABLE JOB BANK.

the usual manner. The countersunk compartments are used for containing spaces, quads, dashes, ornaments, and such other standard articles as are constantly needed in job printer's work. The contents of the compartments may be changed from time to time according to the nature of the work. As the job-bank may have substantially the proportions of a type-case, and being transferable, it can of course be substituted for a lower case, or it can be used in connection with an upper case for containing materials not used quite so frequently. The many uses to which the boxes can be put will be readily apparent to all printers and these, coupled with the extreme simplicity and cheapness of the device, render the invention particularly valuable. The inventor of this improved job bank is Mr. Guy M. Green, 866 21st Street, Oakland, Cal.

FUSE PLUG.

We illustrate herewith an improved form of fuse plug for electric circuits invented by Mr. Sidney Rothschild, of 205 West 116th Street, New York, N. Y. The device can be very cheaply made and may be easily repaired in case the plug burns out. The parts are arranged so as to insure a secure connection between the ends of the circuit wires to be joined. The casing *A* of the fuse plug is made of porcelain or other suitable non-conducting material, and is formed at the bottom with a depending flange. The conducting wire terminals extend through the flange from opposite sides and are secured inside the casing to bolts held loosely in openings in the casing. These bolts are slotted at their upper ends to receive the contact plates *B*. The plates are preferably made of spring metal and extend on opposite sides of the post *C* projecting vertically from the casing. V-shaped tongues are struck up from these plates and enter recesses in the post, the arrangement being such that when the nuts on the bolts are screwed down the tongues will be pressed up into firm engagement with the walls of the recesses, thus securely holding the plates. The electric circuit is completed between the plates by a fuse in the shape of a ring *D* of lead or other metal having a low melting point. This ring may be kept from slipping down too far on the plates by lugs projecting therefrom. The cover of the fuse plug is made of porcelain and has the shape of an inverted cup with a central lug which fits into a corresponding recess in the upper end of the post *C*, thus holding the cover in proper position to securely encase the fuse ring. In

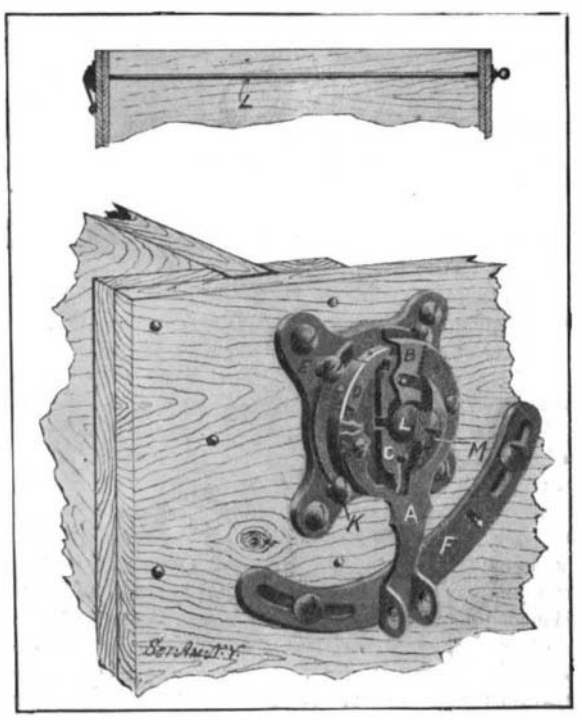


IMPROVED FORM OF FUSE PLUG.

case the fuse ring burns out, it is only necessary to remove the cover and slip a new ring over the contact plates.

SIDEBOARD-ROD FASTENING.

The sideboard-rod of a wagon, it will be recalled, is the rod which braces the sides of the wagon body against the endboard. This rod, which must be removed to permit free access to the rear of the wagon, is usually secured by a nut, which can be operated only by the use of a wrench. Mr. S. S. Bolton, of Scottville, Mich., has invented a new form of fastening which is illustrated herewith. By simply swinging the finger-piece *A*, this rod may be instantly released or secured. The device, though it may at first sight appear rather complicated, is, nevertheless, quite simple, and we are assured can be very cheaply made. The finger-piece, it will be observed, projects from a cap which covers, and is fastened to, the cup-piece *B*. The heads of the screws *K* overlap the base flange of this cup-piece and secure it to the base-plate *E* without preventing it from rotary movement with the cap and finger-piece *A*. Within the cup *B* are two grippers *C* having pins thereon which project through slots in the face of the cup. These slots are so shaped that on movement of the finger-piece to the left, the grippers will close on to the projecting end of the side-board-rod *L*. This is further assisted by the cams *D*, secured to the sides of the cup and acting on the outer ends of the grippers. The end of the rod *L* is threaded and fits a corresponding thread in the grippers. The grippers are held in the locked position illustrated by a lug on the finger-piece *A*, which snaps into a socket in the quadrant *F*; a similar socket is provided at the right for holding the parts in the open position. It will be observed that the quadrant is provided with slots at each end, through which the fastening screws are passed. This permits adjustment of the quadrant, whereby the position of the locking socket may be accurately fixed. At the center of the cap *A* is an opening through which the rod *L* may project if too long; otherwise this opening is closed by a screw *N*.



SIDEBOARD-ROD FASTENING.