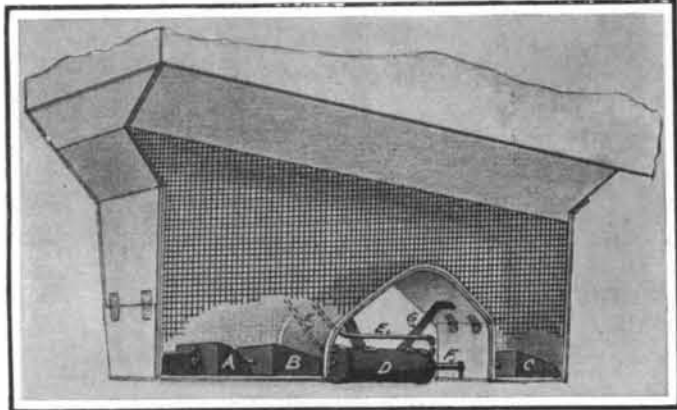




**SELF-CLEANING ASHPANS FOR LOCOMOTIVES.**

A patent has been recently granted on an ashpan for locomotives, which is provided with novel means for cleaning out the ashes. Our illustration shows a

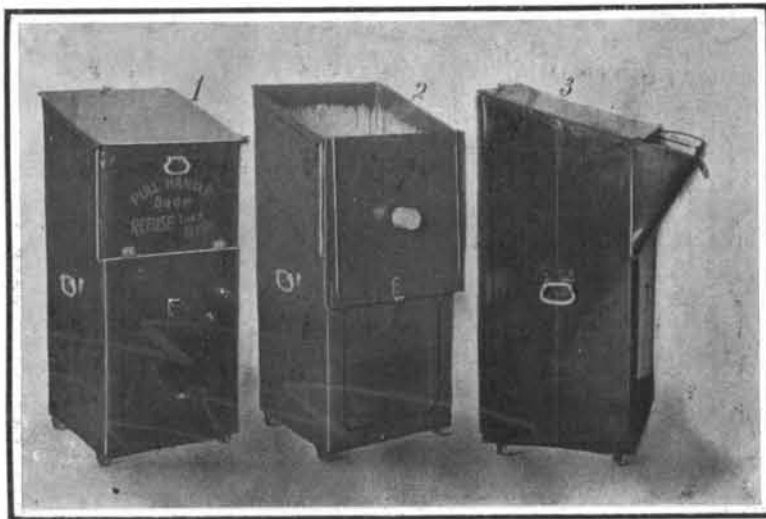


**SELF-CLEANING ASHPANS FOR LOCOMOTIVES.**

locomotive ashpan fitted with the improved apparatus, and partly broken away to show the details. There are, in reality, two ashpans, one placed before the other, and each provided with hoes attached to a piston, which may be operated to hoe the ashes out of the pans. The forward pan is provided with two hoes, A and B, while the rear pan has but one, C. Between the two ashpans is a cylinder, D, which is fed with steam through two pipes E, that enter at opposite ends of the cylinder. The piston in the cylinder is provided with a rod F at each end, to which the hoes are attached. The cylinder D is supported between the pans by means of a pair of brackets G. The forward end of each pan is provided with an outlet, normally closed by a damper. The rear of each pan is also provided with an opening, through which the ashes may be discharged, and the rear ends of the hoes B and C are of such form as to enter and close these openings, when they are forced back to the position shown in the illustration. When the hoes are moved forward, the dampers above referred to are opened by means of forwardly-projecting blades on the hoes A and C. The bottom plate of the forward ashpan is also provided with a discharge opening, which is intermittently opened and closed as the hoe A passes over it. The steam pipe E leads up to a three-way valve, located at the boiler head in a convenient position for operation by either the engineer or the fireman, who may by this means reciprocate the hoes in the ashpan, and thus cause the discharge of the ashes. The inventor of this improved locomotive ashpan is Mr. James S. Downing of 185 Cooper Street, Atlanta, Ga.

**SANITARY REFUSE RECEPTACLE.**

The ordinary refuse receptacles used in public places are merely open cans in which garbage, ashes, or other waste material is placed. The fact that these cans are open is a serious objection, because it permits the breeding of germs which may be infectious. Furthermore, it is a temptation to throw lighted matches or cigar or cigarette stumps into the can, and set fire to the contents. To obviate these difficulties, a new type of refuse receptacle has recently been devised, which is illustrated in the accompanying engraving. It is so arranged that the opening through which the refuse is introduced automatically closes; and in addition to this, the can is provided with a receiver for disinfecting material, which will keep the contents in as nearly a sanitary condition as possible. Fig. 1

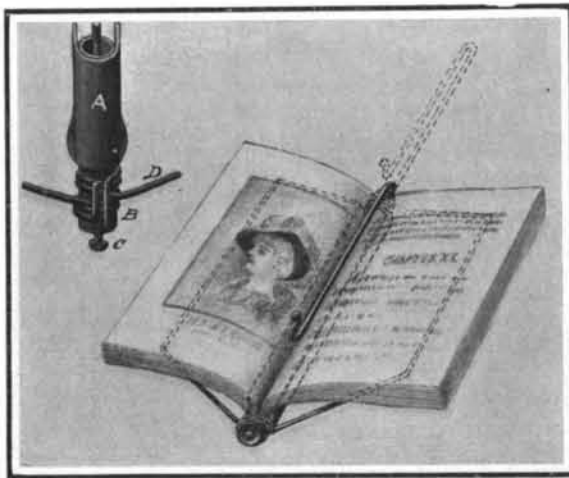


**SANITARY REFUSE RECEPTACLE.**

shows the receptacle closed. The top or lid of the receptacle may be swung open, as indicated in Fig. 2, to permit of dumping the contents of the can. The cup of disinfecting material will be observed at the center of this lid. Fig. 3 shows the receptacle, with the inlet door open to permit of introducing refuse. A spring is attached to the door at the inside, and serves to draw the door shut as soon as it is released. When the top of the can is open, as in Fig. 2, the lid is fastened to a catch at the front of the receptacle, and this prevents the inlet door from being swung open while the receptacle is being inverted to remove the contents. The inventor of this refuse receptacle is Mr. Vincent Azzara, 24 Washington Street, Morristown, N. J.

**CONVENIENT BOOK HOLDER.**

Pictured in the accompanying engraving is a holder for magazines and other books, designed to hold the book open at any desired point and support the book at each side. The cover supports of the holder are adjustable to support the book either fully open or closed, or to support the separated portions of the book in an intermediate position. The construction of the device is shown in the fragmentary detail view. It consists of a spring clip or gripping device A, in the form of a relatively long trough-like member of sheet metal, which grips the bound edge of the magazine or book. Within the clip is a tube B, which extends beyond the ends of the clip A. At the upper end of the tube B a plug is fitted to snugly engage a rod C. This rod is provided with a head at the lower end, as shown in the detail view, which is adapted to contact with the inner end of the plug, and prevent the rod from being withdrawn entirely from the tube B. The rod C is bent upon itself into a U form, while the outer extremity is turned up to prevent it from digging into the book. The cover supports D consist of wire wings



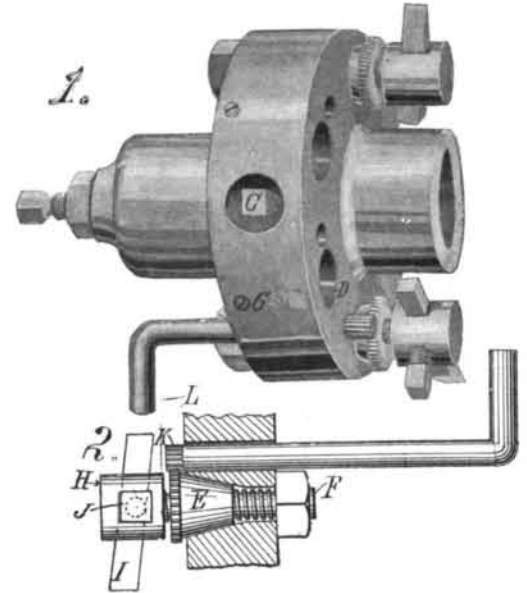
**CONVENIENT BOOK HOLDER.**

hinged to the extremities of the tube B. A wire clip is bent over the hinged ends of the wings, and acts as a stop to prevent them from being opened too far. In application the clip A is passed endwise over the bound edge of the book, and the wings are slightly separated, to admit the book between them. The book is opened to the desired point, moving the wings outwardly on their hinges, and then the rod C is withdrawn from its tube, to the position shown by dotted lines slipped over the open book, and pressed back to its normal position, as indicated by full lines. In this position the two portions of the book are pressed against the wings, and the book may be conveniently held with one hand, by grasping the clip A, which serves as a handle. The hinges of the wings are sufficiently stiff to hold them in any position in which they are set. Mr. Albert F. Stone, Jr., of Callahan, Cal., is the inventor of this improved book holder.

**IMPROVED CUTTER HEAD.**

The cutter head which is illustrated in the accompanying engraving is so designed that the cutting tools may be readily attached or detached at will, and may be adjusted as desired, without removing them from the cutter head. The body of the device, which is indicated at A, consists of a cylindrical barrel having substantially the form of a cup, with a flange formed thereon. The driving spindle is adapted to enter the barrel, and the cutter head is adjusted thereon by turning the end screw. A set screw C serves to hold the cutter head to the shaft. A series of conical

apertures D are formed in the flange. They are adapted to receive the split nuts E, through which the screws F are threaded. The screws F are prevented from turning by means of set screws G, which enter keyways therein; but by means of nuts on the end of the screws, the conical nuts E may be snugly seated in the openings D. The upper end of each

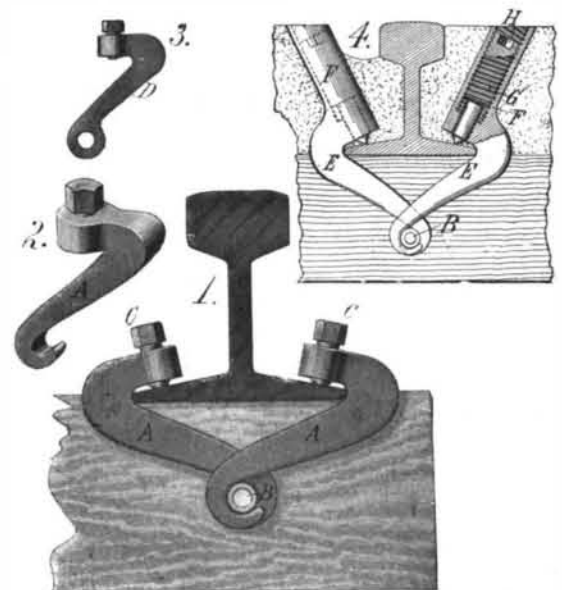


**IMPROVED CUTTER HEAD.**

screw F is provided with a tool holder H, adapted to receive a tool or bit I, which is held in place by means of a set screw J. Each conical nut is formed with teeth at its outer end adapted to engage a pinion K on the end of the key L. By inserting this key through the apertures from the rear of the cutter, the bits may be adjusted at will, without removing the cutter head, and then the screws F are made fast by tightening up the nuts at the rear. The bits may be cut from air-hardening steel of any shape. The inventor of this cutter head is Mr. John F. Stedman of Newberg, Ore.

**RAIL FASTENER.**

The usual method of fastening a rail to the ties, has this disadvantage, that the base flange of the rail acts like the claws of a hammer under a nail head, to pry the spike out of the wood. A better construction would seem to be one in which the axis of the spike lay at right angles to the pull of the rail base. With a view to providing such a construction, a new type of rail fastener has just been invented, which is shown in the accompanying engraving. The fasteners may be applied or removed without the use of a hammer, and are adjustable to compensate for shrinkage in the ties. Fig. 1 shows a cross section of a rail fastened to a tie by means of two of the improved rail fasteners A. The rail fasteners, as indicated in Fig. 2, are formed with hooks at the lower end, adapted to engage a pipe B, preferably of cast metal, which is fitted into a hole in the tie. The upper end of each fastener is provided with a threaded aperture, in which a bolt C is fitted. The bolt is adapted to be screwed down on the base flange of the rail. Fig. 3 shows a slightly modified form of the fastener. For street railways a different construction is required, as indicated in Fig. 4. Here the fasteners E are formed with threaded sleeves F. Screw plugs G are adapted to be screwed into the sleeves F, so as to bring their lower points into contact with the base flange of the rail. The rail and fasteners are imbedded in concrete, or the street paving material, with only the upper ends of the sleeves exposed. It is merely necessary to tighten the screw plugs G once in a while by inserting a key wrench in the sockets H. The inventor of this rail fastener is Mr. George Dorffel, Fruitvale, Cal.



**RAIL FASTENER.**