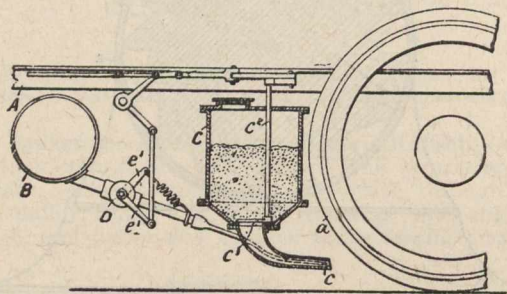


British Houses of Parliament.

## GREAT BRITAIN.

**Sanding-Wheels.**—L. De Silva, London, and A. L. Radford, Uxbridge.—7,068.—1906.—This invention relates to means for ejecting sand, grit, or other matter on to the wheels of motor or like vehicles. The invention is particularly adapted for use on motor and like road vehicles, the object being to provide means whereby, at the will of the

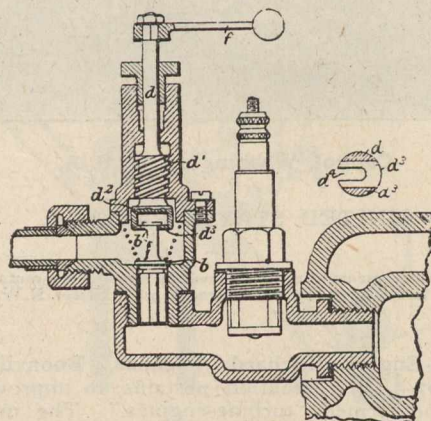


7,068.

driver, a blast of sand or grit may be directed on to the wheels, thereby enabling them to obtain a grip on the road when the same is in a greasy condition, and also to safeguard against side slip by the adherence of the sand on the wheel. According to this invention, it is proposed to utilize the waste or exhaust gases from the engine for this purpose. A represents the chassis, and B the exhaust-box. C is a sand-box which may be located in front of the driving wheels *a*, and is provided with two chutes *c* for directing the sand to the desired points. The contents of the sand-box are restrained from escaping by means of a slide *c*<sup>1</sup> in the bottom thereof, said slide being actuated by the driver through the intervention of a rod *c*<sup>2</sup>. D is a valve on the outlet pipe from the exhaust-box B, said valve being adapted normally to permit the gases to escape direct to the atmosphere, but being provided with a by-pass having two branches, which extend towards, and project into, the sand chutes *c* in front of each driving-wheel. The exhaust gases from the engine are normally allowed to pass into and out of the silencer. Means are provided, such as a valve controlled by levers *e*<sup>1</sup>, *e*<sup>2</sup>, whereby, when it is desired to direct the exhaust to the sand-boxes, the outlet through the silencer is partly, or entirely, closed, and the gases, or a portion thereof, forced to escape through the by-pass simultaneously with the withdrawal of the slide *c*<sup>1</sup> of the sand-box, so that as the sand falls or is drawn out the exhaust gases project it with considerable force on to the wheel. The slide and exhaust-valve may be operated by a common actuating member under the control of the driver.

**Starting Internal-Combustion Engines.**—The Wolseley Tool and Motor-Car Company, Limited, and A. A. Remington, Birmingham.—2,099.—This invention has for its object to facilitate the starting of multiple-cylinder internal combustion engines; and, broadly described, consists in temporarily utilizing one or more of the motor cylinders as a pump or pumps, driving such pump or pumps by the other motor cylinder or cylinders, to charge, under pressure, combustible mixture, which passes into the cylinder, or each cylinder, which is utilized as a pump, behind the piston thereof during one stroke, into a reservoir on the return stroke, and utilizing combustible mixture thus stored within the reservoir for re-starting the engine pistons after the next stop. The reservoir may be charged in this manner up to very nearly the maximum pressure of the working compression in the combustion chambers. Each cylinder is provided with a valve-box between itself and the reservoir, within which is seated a valve *b*. Any one of the cylinders, or any pair thereof, may be utilized as a pump or pumps, to pump combustible mixture into the reservoir, being driven for such purpose by the other cylinders. Each check-valve *b*, when used as a pump-valve, is pressed against its seat simply by a spring, against the force of which it is moved back by the pressure of the mixture caused by the forcing stroke of the pump, and allows mixture to pass into the reservoir, closing again at the end of the forcing stroke and preventing the return of mixture from the reservoir. When the reservoir has become

sufficiently charged, the valve is securely fastened down to prevent any risk of firing the contents of the reservoir while the cylinder is working as a motor; and this is conveniently provided for by forming, upon an enlarged portion of the valve-spindle *d*, a quick-threaded screw *d*<sup>1</sup> which is screwed through a corresponding portion of the valve-box, whereby the spindle may be screwed down upon the end of the valve-stalk *b*, by turning an arm *f*, which is fixed to the spindle, through a moderate angular distance. The spindle *d* is shown to be sufficiently raised to allow the valve to be lifted by mixture which is compressed within the corresponding cylinder. To utilize within a cylinder, the compressed mix-

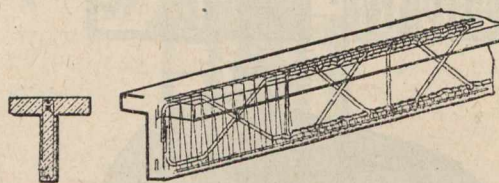


2,099.

ture in the reservoir, for the purpose of starting the engine, the valve *b* of such cylinder is lifted by means of the spindle *d*, for which purpose the head of the spindle is formed with distance-pieces *d*<sup>2</sup> which pass across the edge of a cap forming the outer end of the valve-stalk *b*<sup>1</sup>, and join into a plate *d*<sup>3</sup>, in which is formed an open-ended slot *d*<sup>4</sup>, into which the valve-stalk *b*<sup>1</sup> is passed with the cap over the plate *d*<sup>3</sup>, whereby, if the spindle *d* is screwed outwards sufficiently, it draws the valve *b* away from its seat. Sufficient distance is allowed, as shown, between the portion of the head of the spindle *d* from which the distance-pieces *d*<sup>2</sup> project, and the plate *d*<sup>3</sup>, to provide for the automatic lift of the valve when acting as a pump-valve, the spindle being then in the intermediate position shown. The valve *b* is guided within its box by a fluted portion, which is a sliding fit within a cylindrical portion of the box.

**Armoured Concrete Structures.**—Lavanchy.—26,364.—

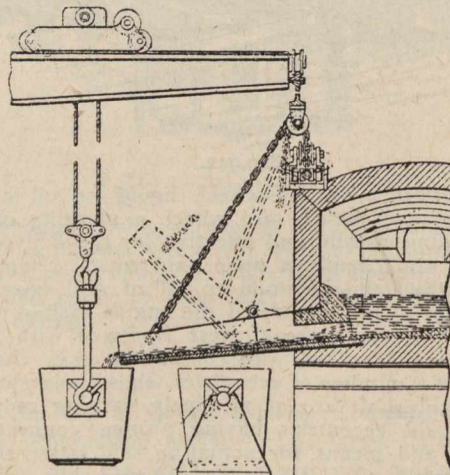
The structure is characterized by a beam of T-shaped section, the metallic armouring of which consists of horizontal top and bottom rods crossing at their ends, and having



26,364.

notches or holes to engage with intermediate rods, the horizontal portions being formed of an iron wire wound as a rectangular spiral.

**Drain: Means for Tapping or Discharging Open-hearth and Like Furnaces.**—19,616.—The improvements consist in a sectional pouring spout formed of two or more sections, one or more of said sections being hinged in turn to the succeeding



19,616.

section, means being provided for swinging said hinged section out of the way of the succeeding section to permit the metal to flow from said succeeding section.