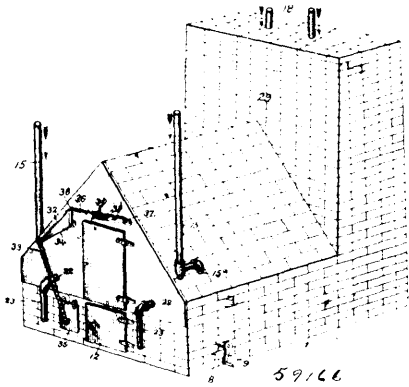


*Claim.* A shutter or blind fastener, comprising a threaded sleeve provided at one end with an integral collar having a projecting slotted stop-lip, said sleeve being formed of two semi-cylindrical sections provided with inwardly projecting lugs, a transverse pin or bolt extending through said lugs and sides of the sections and uniting the same, a fastener consisting of a shank pivoted to said bolt, and provided at each end with a locking-head, and a pawl or latch pivoted to and operating in the slot of said locking-lip and adapted to engage the inner head of the fastener to hold it locked, substantially as described.

**No. 59,166. Heating System. (Système de chauffage.)**



Harvey Kinney Ernsberger, Norwalk, Ohio, U.S.A., 1st March, 1898; 6 years. (Filed 15th February, 1898.)

*Claim.*—1st. The combination with a heat-generating device having a grate, of an arched series of water-circulating pipes arranged within the fire-box and extending longitudinally thereof, the terminal pipes of said series being located contiguous to the plane of the grate, whereby the pipes are arranged at the top and sides of the fire-box, and the rear ends thereof being upturned in a common plane to pass into the flue of the heat-generating device, and being connected terminally by suitable conductors, the conductors at the front ends of the pipes being arched, substantially as specified. 2nd. The combination with a heat-generating device, of a series of parallel closely-spaced water-circulating pipes communicating with each other at their extremities and extending through the fire-box to form the arched top thereof, a hollow water-back arranged above and contiguous to the series of water-circulating pipes, and outflow and return pipes communicating with both the circulating pipes and the water-back at opposite ends thereof, substantially as specified. 3rd. The combination with a furnace having a fire-box provided with an arched top, of an arched series of parallel terminally connected water-circulating pipes, arranged longitudinally in and near the top of the fire-box, to form the sides and top of the fire-box, a hollow water-back arranged above the water-circulating pipes and conforming with the series of water-circulating pipes to the top of the fire-box, said water-back having a sheet-metal inner or lower side whereby heat is readily communicated to the contents thereof, and outflow and return pipes communicating with opposite ends of the water-circulating pipes and with the water-back at contiguous points, substantially as specified. 4th. A furnace having a fire-box including a grate, water-circulating pipes arranged in the fire-box and communicating with outflow and return pipes, said water-circulating pipes being arranged in an inverted V-shaped series, with the downwardly deflected sides of the series arranged contiguous to the plane of the grate, tubular perforated burners arranged at opposite sides of the fire-box adjacent to the line of intersection of the series of water-circulating pipes with the plane of the grate, said burner-tubes being mounted for partial rotation, whereby they may be turned to project flame toward the fuel on the grate or toward the water-circulating pipes, and supply-pipes communicating with the burners, substantially as specified.

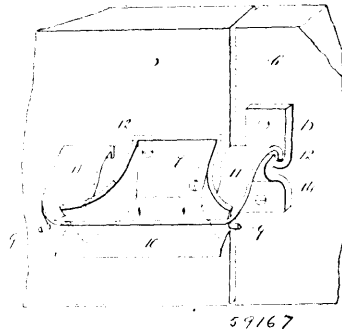
**No. 59,167. Fastening Device for Doors.**

(Arrête-porte)

William Bainbridge Brooker, Bootle, County of Lancaster, England, 1st March, 1898; 6 years. (Filed 17th February, 1898.)

*Claim.*—1st. A fastening device, comprising a horizontal latch which is loosely supported, and which is adapted to be turned forwardly and backwardly, said latch being provided with a hook which is adapted to engage with a catch, substantially as shown and described. 2nd. A fastening device, comprising a latch and a catch, said latch being supported in a horizontal position and adapted to be turned forwardly and backwardly, and provided at one end with an angular arm and a catch with which said arm is adapted to engage, substantially as shown and described. 3rd. A fastening device, comprising a latch and a catch, said latch being suitably supported in a horizontal position, and adapted to be turned forwardly and backwardly, and

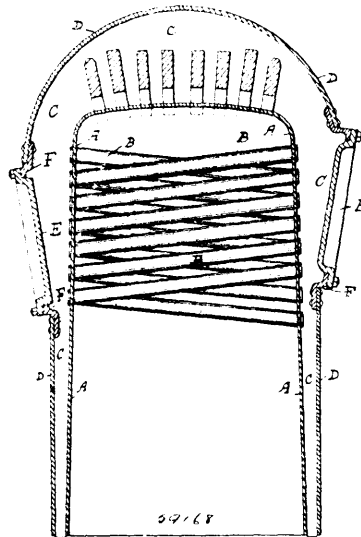
being also provided at each end with a backwardly curved arm, and a catch with which one of said arms is adapted to engage, said catch



being adapted to be secured to a door post or frame, substantially as shown and described.

**No. 59,168. Locomotive Boiler.**

(Chaudière de locomotive.)



Dugald Drummond, South Bank Lodge, Surbiton, County of Surrey, England, 1st March, 1898; 6 years. (Filed 18th February, 1898.)

*Claim.*—1st. A locomotive boiler, having water tubes extending across its fire-box in inclined sets secured in the side walls thereof and serving to promote circulation of water and to provide additional heating surface, substantially as described. 2nd. In a locomotive boiler the arrangement in combination with water tubes extending across the fire-box of removable doors secured in the outer shell of the side walls thereof and serving to provide access to the tubes, substantially as described.

**No. 59,169. Steam Engine Exhaust and Draft Device.**

(Appareil d'évacuation et de tirage pour machines à vapeur.)

Leogora A. Blubaugh, San Fernando, and William Clarke Simpson, Redlands, both of California, U.S.A., 1st March, 1898; 6 years. (Filed 18th February, 1898.)

*Claim.*—1st. In a steam-engine, the combination of a tubular valve and valve-stem having the top thereof arranged opening from the stacker-box up through the valve into the smoke-stack, such valve being arranged to reciprocate to increase or decrease the size of the exhaust-passage, and suitable means for reciprocating such valve. 2nd. In a steam-engine, the combination with a smoke-stack and a stacker-box of a conical steam-jet-spreading valve-plug centrally arranged with relation to the smoke-stack, an exhaust stand-pipe extending from the stacker-box, a discharge-mouth on the stand-pipe, the inner wall of which discharge-mouth flares from the inner wall of the stand-pipe at an angle corresponding to that of the inverted cone of the valve-plug and arranged wholly below the smoke-stack so that an extension of the flaring mouth would contact with the lower end of the inside of the wall of the smoke-stack, the internal diameter of said flaring mouth being less at the bottom and