ing heated in one mass, substantially as and for the purpose shown and described. 2nd. In a gas generator, the introduction of steam at top of the fuel, instead of below, substantially as shown and specified.

No. 23,329. Governor for Steam Engines.

(*Gouverneur pour Machines à Vapeur.*)

Marshall R. Goding, Portland, Me., U.S., 3rd February, 1886; 5 years.

Claim.—1st. In a centrifugal governor, the valve stem composed of the parts L, D, E, and O, made and applied substantially as set forth, and operated as described, to open or close, more or less, the valve of said governor by a duplex movement, directly through the rise and fall of the centrifugal parts or balls K, and indirectly through the changing automatically of the length of the stem while the governor is in motion, all being substantially as shown and specified. 2nd. In a centrifugal speed governor, the longitudinal adjustable parts L, D, of the valve stem L, D, E, O, in combination with the set screw e, whereby the valve stem may be so adjusted as to maintain a required speed under varying conditions of load on the engine, substantially as described and shown. 3rd. The combination of the clutch D, internally screw-threaded as described, and arranged to operate with the gears J and H, engaging with the driving gear I, as represented, with the valve stem, separate parts L, and E, arranged with, and screwed, as shown into said clutch, such part E being movable only vertically and fixed to the part O, and such part L being arranged with the spindle M_1 of the balls K, and connected as described with the levers of such balls, all being essentially and to operate in manner and for the objects as specified. 4th. The combination of the stop F, fixed to the rod O, and adapted to slide on the post P, extending upward from the frame base b_1 with the speed regulator, substantially as described, consisting of the frame A, rod O, screw-threaded tube E, internally screw-threaded clutch D, screw-threaded rod L, tubular spindle M_1, shaft B, gears H, I and J, ring C, weighted lever R and the spool or connection U, arranged and to operate, substantially as set forth.

No. 23,330. Button Fastener Setting Machine. (*Machine à Assujétir les Queues des Boutons.*)

The American Button Fastener Company, New Britain, Ct. (Assignee of Francis H. Richards, Springfield, Mass.), U. S., 3rd February, 1886; 5 years.

Claim.—1st. In a button fastener setting machine, a setting die having a fixed position therein, a presser slide, substantially as described, adapted to hold leather or fabric against said die, and having a driver channel, substantially as described, and a lateral opening through which button fasteners may be introduced into said channel above a driver, a magazine extending into said lateral opening, and adapted to deliver button fasteners one at a time into said channel above a driver, and a driver adapted to drive said fasteners through said channel and said leather or fabric against said die, in combination, substantially as set forth. 2nd. In a button fastener setting machine, a setting die having a fixed position therein, a movable presser-slide, substantially as described, adapted to hold leather or fabric against said die, and having a driver channel and a lateral opening to receive the end of a magazine, and a passage for a driver channel cover, a fixed magazine extending into said opening, and a driver channel cover adapted to close the variable portion of said lateral opening which is above said magazine, in combination substantially as described. 3rd. In a button fastener setting machine, the die E, the slide S, substantially as described, having channel D_3, the magazine M and the driver D, in combination substantially as described. 4th. In a button-fastener setting machine, the combination of the die E, the slide S, having channel D_3, the magazine M, the driver D, and lever L provided with connecting gearing, substantially as described, and the stop S_5, substantially as set forth. 5th. In a button-fastener setting machine, the combination of the die E, the slide S, having channel D_3, the magazine M, the driver D, and lever L, provided with connecting gearing, substantially as described, and stop S_6, substantially as specified. 6th. In a button-fastener setting machine, the combination of the die E, the slide S, having channel D_3, the magazine M, the driver D, and lever L, provided with connecting gearing, substantially as described, the stop S_5 and stop S_6, substantially as set forth. 7th. In a button-fastener setting machine, a frame adapted to carry the die E and slide S, the die E, the slide S, the spring S_2 adapted to press said slide against said die, the driver D, and the stop S_3 on said slide, whereby said driver may act to force the same away from said die through a distance determined by the position of said stop, in combination, substantially as described. 8th. In a button-fastener setting machine, slide S, having stop S_3, spring S^2, Driver D, rod T, connecting mechanism, substantially as described, intermediate to said rod and driver, and spring B_4, in combination, substantially as set forth. 9th. In a button-fastener setting machine, slide S, having stop S_3, spring S_2, driver D, rod T, connecting mechanism, substantially as described, intermediate to said rod and driver, spring B_4, stop S_5 and stop S_6, in combination substantially as set forth. 10th. The magazine M, having the spiral section M_5, substantially as and for the purpose described. 11th. A button-fastener magazine, consisting of a rod having a straight groove M_4 and a spiral groove M_6, in combination with a case inclosing said spiral groove, substantially as described. 12th. A button-fastener magazine, consisting of a rod having groove M_4, and having spiral groove M_5 inclosed by a case, in combination with a follower adapted to invert the fasteners by pushing them from said groove M_4 through said spiral groove, substantially as described. 13th. In combination, a magazine having groove M_4 and magazine lock M_3, substantially as and for the purpose described. 14th. In combination, magazine M, having groove M_4, magazine lock M_3 and follower N, having tongue N_3 and projection N_4, substantially as and for the purpose described. 15th. In combination, magazine M, having groove M_4, magazine lock M_3 and follower N, having tongue N_3 and catch N_5, substantially as described. 16th. In combination, magazine M, having groove M_4 and stop N_2, magazine lock M_3 and follower N, having tongue N_3, projection N_4 and catch N_5, substantially as described. 17th. In combination, a part, as A_2, having formed therein the setting die E, and provided with the lip J, and a spring having the similar lip J_2, substantially as and for the purpose described. 18th. Slide S, having mortise H, and groove G, magazine M, having tongue T_3 and cover C, having tongue T_2 and groove G_2, in combination, substantially as described.

No. 23,331. Manufacturing Iron and Steel.

(*Fabrication du Fer et de l'Acier.*)

Benjamin Bayliss, Jr., Boltzhoover, Penn, U. S., 3rd February, 1886; 5 years.

Claim.—1st. In the manufacture of crude iron into iron of higher grade, or steel, the process herein described, which consists in introducing fuel to the converter through a suitable inlet, when the annular tuyer chamber is at the bottom, then inverting the vessel, subsequently admitting an air-blast, maintaining this conductor until the pressure of the flame inside exceeds that of the atmospheric air surrounding the said inlet, cutting off the air-blast, then inverting the vessel to allow the automatic exit of the fuel through the same aperture to yield the entire space for the metal, reversing the angle of the vessel, charging the liquid metal, with or without the addition of heated scrap iron, again admitting the air blast, again inverting the vessel, so that the metal comes in contact with the tuyeres, maintaining this condition until the color of the flame evidences the completion of the blowing operation, charging any desired alloy, again admitting the air blast, inverting the vessel several times to secure perfect commixture, finally inclining the vessel, and discharging the mass therefrom, so that in its course to the pig-bed, or casting-molds it shall travel perpendicular paths, for the purpose specified. 2nd. The sections A, C, provided both with flanges at their respective ends, in combination with the section B, having flanges on both ends, projecting in either direction from the shell, for the purpose set forth. 3rd. The section B, lined, so as to form a central contracted area, as shown, having flanges a, a, a_1, a_1, for the purpose set forth, and provided with rim d_2 and recess e, in combination with the section A, having air-chamber b_2. 4th. The section C, having mouth g_1, surrounded by wall g_2, from which lugs h, h, project, and flanges a, a, in combination with the runner I and sections A, B. 5th. The chamber F, composed of counter-part halves, having projection f_1 fitting in groove f_2 formed by two annular collars around the trunnions, in combination with the section B having annular rim d_2 sliding in groove d_1 in the chamber F and pipe G. 6th. The runner I, with lugs h_1, h_2, and perpendicular outlet i_1, in combination with connections h_2, h_2, and lugs h, h. 7th. The section A, having flanges a_1 both ends, and provided with annular tuyere chambers b_2, in combination with the section B, having flanges at both ends projecting in either direction beyond the shell, having a contracted central area, and trunnions d, d radiating from its surface section C, having flanges at either end, and a mouth g_1 and standards D, D, forming bearings for the trunnions. 8th. The standards D, D, constituting bearings for the converter, in combination with the section B having flanges a, a, a_1, a_1 on both ends projecting beyond the shell in either direction, provided with trunnions d, d, on one of which are two annular collars, forming a groove f_2 between them and the end of the other serving, for the reception of rotary motion from suitable mechanical media, chamber F, pipe G, passages e, e_1 and chamber b_2, the whole co-operating in the manner shown and for the purpose specified.

NO. 23,332. Covering for Feed Rolls of Machinery. (*Enveloppe des Rouleaux d'Alimentation de Machinerie.*)

Samuel Bergstresser, Philadelphia, Penn., U. S., 3rd February, 1886; 5 years.

Claim.—1st. The within described covering for feed rolls of machinery, said covering consisting of a filled tubular fabric, having a paint or filling compound applied to the outer face, as set forth. 2nd. A feed roll for machinery, having applied to the core or body of the same, a covering, consisting of a filled tubular fabric with a paint or filling composition on the surface, as set forth.

No. 23,333. Apapartus for Manufacturing Flexible Roofing Material. (*Appareil de Fabrication du Matériel à Toiture Flexible.*)

Longley L. Sagendorph, Cincinnati, Ohio, U.S., 3rd February 1886; 5 years.

Claim.—1st. The combination of the tank, guide B, and roller E, located at or near the foot of the guide B, substantially as and for the purposes specified. 2nd. The combination of the tank, guide B, rollers E, and H, substantially as and for the purposes specified. 3rd. An apparatus for removing the surplus of composition, consisting of two lips, one fixed and the other removable, the working edges of said lips being opposite one another, substantially as and for the purposes specified. 4th. The tank A, provided with guide B, rollers E and H, arms D and F, and scrapers M and R, substantially as and for the purposes set forth. 5th. The guard box B, located in the tank, substantially as and for the purposes set forth. 6th. The improved apparatus for preparing flexible materials, consisting of the tank, A, constructed substantially as described, and drying apparatus separated from said tank and consisting of series of racks Q, substantially as and for the purposes described. 7th. The guard box B, provided with lip, and located in the front end of the tank, substantially as and for the purposes specified. 8th. The guard box B, and the depressing rollers and their supporting arms, and guides, substantially as and for the purposes described. 9th. In the tank, the combination of guard box B and roller E, and arms D, and guide ways, substantially as and for the purposes specified. 10th. The roller E and arms D sliding in guideways C, and provided with handle, and a setting device, for securing the roller at any desired height, located at the front portion of the tank, substan-