a passage *b* leading therefrom into the rear end of said chamber, the downwardly and rearwardly inclined reservoir *l* having an inlet passage *l* leading into the bottom of the chamber *c*, and an air passage *a* also leading into the smoke chamber from said reservoir above the passage *l*.

No. 29,466. Mechanism for Driving Machinery. (*Mécanisme de commande des machines.*)

Abel Klomstiver and B. S. Van Tuyl, Petrolea, Ont., 7th July, 1888; 5 years.

Claim.—1st. The regulation of the admission of steam to the engine by the driven machine, as and for the purposes set forth. 2nd The swinging frame B, bracket A, coupling rod shaft E, tension pulley C, belt D and pulley F, in combination with the upright c_1, notched regulating bar c_2, lever c_3, slide d_1 and set screw d_2, as and for the purpose set forth. 3rd. A bracket A, secured to the boiler for supporting this mechanism, as set forth. 4th. The swinging frame B, bracket A, tension pulley C, belt D and pulley F, in combination with the tightener pulley b_1, flexible band b_2, springs a_2, spool a_1, ratchet a_3 and dog a_4, as and for the purpose set forth. 5th The coupling rod shaft E and coupling S, in combination with the tubular coupling rod G_1, substantially as and for the purpose set forth. 6th. A coupling rod formed tubular, as and for the purpose set forth. 7th. A coupling formed hollow and square for a short distance on its interior face, as and for the purpose set forth. 8th. The combination of the coupling S_1 and bar T, with the tubular coupling rods G_1, G_2, substantially as and for the purpose set forth. 9th The coupling S_2 formed with the shoulders l_2, in combination with a collar L formed formed with shoulders l_3, spring l_4, shoulder l_4 and shaft G_3, as and for the purpose set forth. 10th. The combination of the shaft G_3, bevelled gear wheels X_1, X_2 and N, brackets V_1 and bearings W, W, W, in combination with the bevelled pinions Y_1, Y_2, and R, toothed wheel Z_1, Z_2, cog pinion Z and shafts H_1, H_2, X and O, as and for the purpose set forth.

No. 29,467. Stopper for Bottles, etc.

(*Bouchon pour bouteilles, etc.*)

Henry Davidson, London, Eng., 7th July, 1888, 5 years.

Claim.—1st. A stopper for closing bottles, jars and other vessels, comprising a piece of cork having a screw thread cut thereon to correspond with a screw-thread in the mouth of the bottle or other vessel to be closed, in combination with means for facilitating the introduction and removal of the same, substantially as described. 2nd. The combination, with a cork having an external screw-thread cut thereon, of a plug secured in the body of the said cork. 3rd. The combination, with a cork having a screw-thread cut on the exterior therof, and adapted to fit a corresponding screw-thread in the vessel, bottle, or cask, of a hollow plug or plugs so arranged that the stopper may be removed by a key.

No. 29,468. Adding Machine.

(*Machine à additionner.*)

Dorr E. Felt and Robert Tarrant, Chicago, Ill., U. S., 7th July, 1888, 15 years.

Claim.—1st. In an adding machine, a series of indicator-wheels having coincident axes, each of said wheels bearing on its periphery figures 0 to 9 inclusive in numerical order, each of said wheels being provided with a cam, and a ratchet and a pinion provided with a pawl in engagement with said ratchet combined with a corresponding series of actuating keys, each provided with a segment-rack in engagement with one of said pinions, and a series less by one than the number of said wheels of vibrating levers, each in engagement with the cam of one wheel, and with the ratchet of the next adjoining wheel, and a corresponding number of impelling-springs to actuate said vibrating levers, as set forth. 2nd. The combination, with the indicator wheels the actuating segment-levers and the graduated keys of a positive stop for preventing over rotation, the same being put in operation by the keys, substantially as set forth. 3rd The combination, with the indicator-wheels, the actuating segment-levers and the graduated keys, of the detents J, one for each wheel, and the mechanism operated by the keys for depressing said detents into engaging position, substantially as set forth. 4th. In an adding machine, the series of indicator-wheels and carrying mechanism connecting such wheels, in combination with the series of segment levers, the several series of keys, and a series of positive stops put into operation by the keys for stopping the rotation of the several wheels, substantially as specified. 5th. The combination, with the keys, the yielding stops G, rods J, detents J_1 and the indicator-wheels and their ratchets *i*, substantially as specified. 6th. The combination, with the actuating keys C and number-wheels A, the yielding-stops G, rods J and detents J_1, of the springs J_4, substantially as specified. 7th. The combination, with the main shaft and indicator-wheels, all mounted thereon, and ratchets *i*, all mounted upon a common shaft, of automatic carrying mechanism consisting of the cams L, the levers M provided with arm m_1, resting upon and actuated by the cams, the spring *m* and the push-pawl M_1, substantially as specified. 8th. In an adding machine, a series of indicator-wheels arranged side by side upon a shaft, a series of segmental levers for actuating said wheels, and the several series of keys, in combination with a series of separate carrying devices, each provided with a retracting spring in which power is stored for actuating said carrying devices, and two stops for preventing over rotation and backward rotation respectively, substantially as set forth. 9th. In an adding machine, the combination, with the several numeral-wheels, and their carrying mechanism, of actuating-key mechanism for each of said wheels, and positively acting stop-motion detents for preventing over-rotation under the impulses of said keys or carrying mechanism, substantially as specified. 10th. In an adding machine, the combination, with the numeral wheels, their key-actuating devices and their carrying mechanisms, of detents for preventing over rotation under actuations received directly from the keys and other detents for preventing over-rotation under-actuations by the carrying mechanisms, substantially as specified. 11th In an adding machine, the combination, with the series of numeral wheels and their actuating devices, of the series of levers for actuating said wheels in carrying, the series of springs in which power is stored for actuating said levers, and the series of positively acting stop-motion detents for preventing over-rotation under the impulse of the carrying levers, substantially as specified. 12th. In an adding machine, the combination, with each numeral-wheel and its carrying-lever, of a positively acting stop motion detent acting upon the wheel, and a spring for throwing said detent into engagement, substantially as set forth. 14th. In an adding machine, the combination, with each numeral-wheel and its carrying lever, of a positive stop-motion detent a spring for throwing the detent into engagement, and a catch or equivalent detaining device for detaining the detent momentarily, substantially as set forth. 15th. In an adding machine, the combination, with the numeral wheels, of the spring actuated positive detent N, and the notched disk E_2 having a movement independent of its wheel for releasing the wheel from the lock of said detent before said wheel is actuated, substantially as specified. 15th. In an adding machine, the combination, with the numeral-wheels, of the spring-actuated positive detent N, the carrying-lever and the notched disk having a movement independent of its wheel for releasing the wheel from the lock of the detent before said wheel is actuated, substantially as set forth. 16th. In an adding machine, the combination, with the carrying lever and its actuating cam, of the spring-actuated detent N, and the pin upon the carrying-lever for drawing the detent back, the bell-crank lever and the bar under which the latter catches, substantially as set forth. 17th. In an adding machine, the combination of the stop-levers with the numeral-wheels, their actuating devices, the locking-detents J_1 and the connecting rods J, the stop levers having an excess of motion, whereby they are enabled to get under way before actuating the detents, substantially as specified 18th. In an adding machine, the combination of the numeral wheels, their actuating devices, detents J_1, the connecting rods J and the stop-levers, the latter having an excess motion as specified, and both detents and levers having seperate lifting-springs, substantially as specified. 19th. The combination of the numeral-wheels, their actuating devices, detents J_1 and the rods J with the stop-levers inclosed in elongated loops at the lower ends of the rods, substantially as specified. 20th. The combination of the numeral-wheel, its actuating-segment, the series of keys and the stop motion detent J_1, the lowest key being connected to the detent so as to actuate the same directly, and the other keys acting thereon through the stop-lever and rod J with the stop lever and rod, substantially as specified. 21st. In an adding machine, the combination of the numeral wheels, their actuating-segments and the stop-motion detents J_1, with the lowest key of each series of keys, the latter being connected directly to and actuating said detents, substantially as specified. 22nd. The stop-levers having the forked ends, in combination with the several series of keys actuating said levers, the lowest key of each series acting as a guide to one of the levers, substantially as specified. 23rd The combination of the stop-levers with the several series of keys actuating the same, the lowest key of each series being let into the end of the levers, and the cross-bar G_1 substantially as set forth. 24th. The combination of the numeral-wheels in series, all borne upon a single shaft, and provided with depressible stop-latches U as specified, with said shaft, and the pins T driven into said shaft for engaging said stops and rotating said wheel, substantially as set forth. 25th. The rotatable main shaft and the numeral-wheels mounted thereon, said shaft having latches for engaging said wheels during its rotation, in combination with the positive locking detents, and the rotatable bar R, for releasing the detents to permit said wheels to be returned to O by revolving said shaft, substantially as set forth. 26th. The numeral-wheels provided with spring-latches U, the shaft upon which the numeral-wheels are loosely mounted, said shaft being provided with pins T to engage said latches and rotate the wheels in one direction, the locking detents and the bar R for releasing the wheels from said detents, in combination with the stops upon the wheels to engage with said pins and said detent, substantially as set forth. 27th. The pinions E_1 and the disks E_2 notched upon the periphery, in combination with the numeral-wheels A, the ratchets F, the pawls *i* normally resting on said ratchet near the point of a tooth, and detents N, substantially as set forth. 28th. The numeral wheels, the actuating ratchets and the disks E_2 carrying the pawls acting upon said ratchets, and also acting to release the positively acting locking-detents N, in combination with said detents, the disks having some excess motion before moving the ratchets to give time for releasing the lock, substantially as set forth. 29th. In an adding machine, the combination, with the numeral wheels, of the carrying mechanisms and the positively-acting stop-motion devices for preventing over-rotation under the carrying impulses, the hook *o* and bar *q*, whereby said stop-motion devices are caused to act an instant later than the carrying devices, substantially as set forth. 30th. The combination, with the carrying-lever, of a positively acting stop-motion detent for preventing over-rotation under the impulse of the carrying, said detent being automatically withdrawn from engagement with the numeral wheel by the lever as the latter moves back preparatory to a carrying operation, substantially as set forth.

No. 29,469. Hand Loom. (*Métier à tisser à bras.*)

Porter and Reeves, (assignees of Charles N. Newcomb), Omaha, Neb., U.S., 7th July, 1888; 5 years

Claim.—1st. The combination of crank-shaft *f*, pitmen g_2, heddles B, ratchet *h*, pawls *k*, arms *i*, straps *l* and slide-bar *m*, substantially as described for operation as specified. 2nd. The combination of pivoted beam e_1, arms g_1, posts h_1, springs a_1 and slide-bar *m*, substantially as and for the purpose specified.

No. 29,470. Music Turner. (*Tourne-musique.*)

James Miller, Detroit, Mich., U. S., Thomas Mearns and George Williamson, Windsor, Ont., 7th July, 1888; 5 years.

Claim—1st. A music turner consisting of the combination, with the frame B, of turning wires A, each said wire having a shaft section or stem extended up behind the music, and provided with an actuating