at its lower end around the valve-seat and extending to near the upper end of the outer tube, a cap having a reduced screw-threaded lower end fitting in the upper end of the outer tube and formed with diametrically opposite dove-tailed notches or recesses in its end, and having a screw-plug in its top, a spring having dove-tailed ends fitting in the recesses, a bulged central portion, and a screw-threaded perforation formed therein and a valve-stem having a screw-threaded upper portion fitting in the perforation of the spring, a square upper end and of a length to fit at its lower end against the valve-seat when expanded, as and for the purpose shown and set forth.

No. 27,928. Twine. (*Cordonnet.*)

Edward H. Haskill, Gloucester, Mass., U. S., 3rd November, 1887; 5 years.

Claim.—As a new article of manufacture, a twine composed of a central strand of mainlasisal flax or hemp yarn, surrounded by one or more plies of jute strands *b*, *b*, *b* for the purpose of increasing the strength and retaining the softness and pliability of the article, as herein above set forth.

No. 27,929. Bath Brush. (*Brosse à bain.*)

Charles J. Bailey, Newton, Mass., U.S., 3rd November, 1887; 5 years.

Claim.—1st. The herein-described brush, combined with the detachable handles, substantially as and for the purpose set forth. 2nd. The brush having the loop-like handles i^2, combined with the handle i^7, substantially as described. 3rd. The brush having the back i and teeth i^1 made of soft rubber, the said back i having a transverse slot through it, combined with a handle passed through said slot, substantially as described. 4th. The brush consisting of the back and teeth, and having the permanently charged magnets embedded in the back, substantially as described. 5th. The brush consisting of the back, and teeth made of soft rubber in one piece, and having the permanently charged magnets embedded in the back and the handle, substantially as described. 6th. The brush consisting of the back, and teeth made of soft rubber in one piece, and having the permanently charged magnents embedded in the back, and also having the studs or equivalent attaching devices, substantially as described.

No. 27,930. Automatic Car Lamp Extinguisher (*Eteignoir automatique de lampe de char.*)

Robert S. Stratton, Orillia, Ont., 3rd November, 1887; 5 years.

Claim.—1st. A lamp burner provided with a pivotal cap adapted to cover the top of the wick tube or tubes, and clear the same when desired, a bar carried by links pivoted to the wick tube or tubes, and pressed upwards by a spring the upper end controlling the movement of the cap, and counterpoised by a weight placed loosely in a receptacle at the lower end and adapted to leave its seat at a given inclination or impulse, substantially as set forth. 2nd. In combination, with a wick tube B, the caps F, links G and H, springs I, bar K, cup L and weight M, substantially as set forth.

No. 27,931. Bicycle. (*Bicycle.*)

James Brussie, Oakland, Cal., U.S., 3rd November, 1887; 5 years.

Claim.—1st. A bicycle attachment, consisting of auxiliary wheels, mounted and carried by arms pivoted about the axle of the large main wheel of the machine as a centre, a lever connected with the arms and passing up beside the main wheel to within reach of the rider, whereby the auxiliary wheels may be adjusted to or from the ground, and a guide-bar for directing and securing the lever, substantially as described. 2nd. A bicycle attachment, consisting of the auxiliary side wheels, located one on each side of the large main wheel of the machine, and mounted in arms pivoted about the axle of the large wheel as a centre, whereby the auxiliary wheels may be adjusted to or from the ground, a lever for effecting this adjustment and a guide-bar to direct and hold the lever, substantially as described. 3rd. A bicycle attachment, consisting of an auxiliary front wheel located forward of the vertical plane of the axle, of the large main wheel of the machine, and mounted in an arm pivoted about said axle as a centre, a lever within reach of the rider, whereby the auxiliary front wheel may be adjusted and a guide-bar directing and securing the lever, substantially as described. 4th. A bicycle attachment, comprising arms pivoted about the axle of the large main wheel of the machine as a centre, and carrying in their lower ends auxilliary wheels, a forked lever embracing the main wheel and connected with said arms, whereby they are moved on their pivoted centres to adjust their wheels, and a curved guide-bar secured to the head of the machine, and passing down over the large main wheel for directing and securing the lever, substantially as described. 5th. A bicycle attachment, comprising flanges pivoted about the the axle of the large main wheel of the machine as a centre, arms bolted radially to said flanges and adapted to be readily applied and removed, auxilliary wheels carried by said arms, and an operating lever bolted to said flanges, whereby it may be readily applied and removed, said lever being adapted to turn the flanges on their centres, whereby the auxilliary wheels are adjusted, substantially as described. 6th. A bicycle attachment, comprising flanges pivoted about the axle of the large main wheel of the machine as a centre, and having radial wings, arms removably connected with the wings and carrying auxiliary wheels, a forked lever embracing the main wheel and removably connected with the wings of the flanges, and a curved guide-bar for directing and securing the lever, substantially as described.

No. 27,932. Roller. (*Rouleau d'agriculture.*)

William Potter, Perth, Ont., 4th November, 1887; 5 years.

Claim.—1st. The combination of the covered drums with the iron sections as a centre, substantially as and for the purposes hereinbefore set forth. 2nd. A roller presenting a surface, uneven, sharp and corrugated, substantially as and for the purposes hereinbefore set forth.

No. 27,933. Card Printer. (*Imprimeuse de cartes.*)

Wellington P. Kidder, Boston, Mass., and John R. Carter, Niagara Falls, N.Y., U.S., 4th November, 1887; 5 years.

Claim.—1st. The combination, in a card printer, of a wheel having printing characters on the side of its rim, with an impression surface, having a sunken space on each side to allow the card being printed to be held away from the types on each side of the type, immediately over the printing surface, substantially as described. 2nd. The combination, in a card printer, of a printing surface, an impression surface to support the card or article being printed, and means, as the frisket N, for depressing the card on each side of said impression surface, substantially as described. 3rd. A card printer, provided with a printing wheel, having printing characters on both sides of its rim, substantially as described. 4th. The combination, in a card printer, of a printing wheel constructed to print a single letter at a time, and a movable gauge for regulating the position of the card being printed, substantially as described. 5th. A card printer, provided with a printing wheel, running in reversible bearings, and having printing characters on both sides of its rim, substantially as described. 6th. In a card printer, the combination of a printing wheel, with a lever for operating the same bearing on the side of the rim of the wheel opposite the latter being printed, substantially as described. 7th. In a card printer, the combination of a horizontal wheel, having printing characters on the sides of the same, a lever working on a stationary fulcrum, and passing over and acting on said wheel, and extending beyond the same, and an impression surface to receive the impress of the type wheel, substantially as described. 8th. The combination, in a card printer, designed to print a single letter at a time of a printing surface, a frisket designed to protect out of the letters on the card being printed from the action of the printing surface, and having an aperture through which said printing surface acts on the card, and a part cut away to allow of the printed letter being seen when the card is being adjusted for the printing of the next letter, substantially as described. 9th. The combination, in a card printer, of a printing surface, an impression surface, a frisket having a hole for the passage of the type and a series of small projections on the under side of the frisket to depress the portion of the card last printed, and keep it from contact with the under side of the frisket, substantially as described. 10th. The combination, in a card printer, of a printing wheel, a pair of vibrating arms partly surrounding said wheel, and a yoke mounted in said arms in which said wheel is mounted, substantially as and for the purpose specified. 11th. The combination, in a card printer, of a pair of vibrating arms mounted on a rock shaft, a yoke mounted in the free ends of said arms, a printing wheel turning in said yoke, and a lever, its fulcrum near the centre on which the arms vibrate and acting upon the wheel, substantially as described. 12th. The combination, in a card printer, of a pair of vibrating arms mounted on a rock shaft, a yoke mounted in the free ends of said arms, a printing wheel turning in said yoke, and a lever having its fulcrum on said rock-shaft and extending across and beyond said wheel and pressing on the rim of the same, substantially as described-

No. 27,934. Machine for Forming Dress Shields. (*Machine à façonner les sous corsages.*)

Edward A. Levian, Toronto, Ont., 4th November, 1887; 5 years.

Claim.—1st. In a machine for forming dress shields, the combination, with a male die or former, of a matrix having one part moveable, for the purpose set forth. 2nd. In a machine for forming dress shields, the combination, with a male die or former, of a matrix formed of two separate plates and heated boxes attached thereto, one-half of such matrix being moveable, for the purpose set forth. 3rd. In a matrix for forming dress shields, the combination, with two heated boxes, of separate moulding plates attached to such boxes and projecting above the upper sides of same, for the purpose specified. 4th. In a matrix for forming dress shields, the combination of a stationary heated box, a moveable heated box, separate moulding plates affixed thereto and means for locking same together, substantially as and for the purpose specified. 5th. The combination, with the stationary box O and swinging box O1, of the shaft R having cams, and an operating handle and the locking arm S, substantially as and for the purpose described. 6th. In a machine for forming dress shields, the combination, with a frame and a matrix, of a male die, a plunger carrying same and having a rack formed thereon, a weighted lever having a toothed segment engaging said rack, a friction wheel and a brake, substantially as and for the purpose specified. 7th. The combination, with the frame and wheel G, of the brake-shoe H, shaft K having cam K and on operating handle, substantially as and for the purpose specified.

No. 27,935. Carriage Spring. (*Ressort de voiture.*)

John McFarlane, Otterville, Ont., 5th November, 1887; 5 years.

Claim.—1st. The special form of the spring A, and the lock E combined therewith, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the said specially formed spring and lock with the body bar B, and the gearing bar F by means of the bolt C, the clip, or clamp, D and the shackle G, substantially as and for the purpose hereinbefore set forth.

No. 27,936. Cutter Head. (*Porte-outil.*)

John C. Humphreys, Braxton Court House, W.V., U. S., 5th November, 1887; 5 years.

Claim.—1s. A stock or bit-holder, having two series of convex surfaces *b*, *b1*, excentric to the axis of the stock, each series extending half the length of the said stock, with the advance edges *c* of one series of convex surfaces centrally intermediate the advance edges *c* of the other series of convex surfaces, substantially as herein shown and described. 2nd. The combination of the cutter bar or stock A,