ports, of a supplementary valve for regulating the flow of air from the cylinder, when the electro-magnetic valve has opened the passage to the external air, substantially as described. 4th. The combination, with the cylinder provided with ports arranged for communication with a supply-pipe and the external air respectively, and an electro-magnetic valve arranged to open and close said ports alternately, of an automatic regulating valve arranged to close the communication between the cylinder and external air, when the pressure in the cylinder falls to a pre-determined point, after the electro-magnetic valve has opened the port to the external air, substantially as and for the purpose set forth.

No. 21,066. Air Filter. (*Filtre à Air.*)

Henry Flad, St. Louis, Mo., U.S., 10th February, 1885; 5 years.

Claim. The combination, with an air-pump located in the locomotive cab, of the air filter arranged in a chamber directly under the roof of the cab, said chamber being provided with openings at one side of said filter, and the suction pipe leading from said chamber on the opposite side of the filter to the air-pump, substantially as described.

No. 21,067. Hame. (*Attelle.*)

Emerson E. Winstead, Dresden, Tenn., U. S., 10th February, 1885; 5 years.

Claim.—The combination, with the hame, having plate D provided with the projecting perforated steps E, and trace-hook I having eye J, of the removable lock-bolt G constructed with the spring-catch H1 below its head H, whereby the bolt is locked removably between the upper and under side of the topmost step or projection, as shown and specified.

No. 21,068. Lubricator. (*Graisseur.*)

Luther B. Bailey, London, Ont., 10th February, 1885; 5 years.

Claim.—1st. The combination, with the transparent tube of a lubricator, of a surrounding casing partially surrounding the same and provided with a curved polished surface, to reflect and condense the rays of light, substantially as described. 2nd. The coupling A, provided with passages through the axes of the same and formed with recesses and adapted to hold in place a tube, in combination with the transparent tube C, secured in said passages, the interior of the ring formation of said coupling being polished to form reflectors, substantially as and for the purpose specified.

No. 21,069. Roller Skate. (*Patin à Roulettes.*)

Micajah C. Henley, Richmond, Ind., U. S., 10th February, 1885; 15 years.

Claim.—1st. In a roller skate, the combination, with the sole plate, of a hanger frame, a truck frame pivotally connected therewith, an elastic cushion supported by the truck frame and a compression screw having its threaded stem seated in a socket in the hanger above the cushion, and its lower end enlarged to form a bearing for the cushion when the skate is tipped or rocked in use. 2nd. In a roller skate, the combination, with a sole plate, of a hanger frame, a truck frame pivotally connected therewith, a rubber cushion supported upon the roller frame, a compression screw above the cushion, and a plate interposed between the screw and the cushion provided with a central socket to receive the projection on the screw and serrated on its under face, whereby it is caused to protect the cushion from wear and prevent undue lateral expansion thereof. 3rd. In combination with the sole plate of a skate, hangers applied to the under side thereof at or near its opposite edges, sliding clamps passing through said hangers, and a right and left hand screw journalled in the hangers and passing through threaded seats in the clamps, substantially as shown and described. 4th. In combination with sole plate A and hanger frame B secured thereto, truck frame C pivotally connected with the hanger, cushion H supported by the truck frame, serrated plate J provided with central recess *m*, and screw I provided with boss *j* and stud *l*, the upper end of said screw being seated in a threaded socket in frame B, the stud *l* extending into a recess in the plate J, and the disk *i* bearing upon said plates, substantially as described and shown. 5th. The combination, in a roller skate, of a hanger frame, a truck frame, an elastic cushion, a compression screw, and a plate interposed between the screw and the cushion and serrated on the face which rests upon the latter, to prevent the lateral spreading of the cushion. 6th. In combination with the sole plate A, hangers K, K, provided with recesses *t* and perforated lugs *u*, clamps M, M, seated in the recesses *t*, and right and left hand screw L journalled in the lugs *u* of the hangers, and passing through threaded seats in the clamps, all substantially as set forth. 7th. In a roller skate, the combination of a hanger frame B, truck frame C formed with a box or chamber *d* and pivotally connected to frame B, an elastic cushion H seated within said box or chamber, a serrated plate J resting upon said cushion, and a screw I provided with a boss or enlargement J and screwing into a socket in frame B above the plate and cushion. 8th. In a roller skate, the combination, with the hanger frame and truck frame, of an elastic cushion supported by the truck frame, a bearing plate resting upon said cushion and a compression screw having a threaded stem screwing into a socket in the hanger and provided with a boss or disk at its lower end to bear upon the plate, said disk and plate being provided respectively with shallow depressions and slight projections to lock the boss against accidental turning. 9th. In a roller skate, the combination, with a sole plate, of a hanger frame, a bearing plate resting upon the cushion, and compression screw above and resting upon the plate, one of the bearing faces in contact with the cushion being serrated to prevent undue spreading thereof. 10th. The combination, with a roller skate, of a sole plate, a hanger secured thereto and having a broad bearing face for the cushion, a truck frame pivotally attached to the hanger, a cushion interposed between the truck frame and hanger, a movable plate bearing against the cushion and an adjusting screw or screws bearing against said plate, substantially as described and shown.

No. 21,070. Cross-Cut Saw. (*Scie de Travers.*)

George W. Wills, Portland, Oregon, U. S., 11th February, 1885; 5 years

Claim.—The combination of two cutter-teeth, having their forward edges straight and their rear edges cut off inclined at their upper portions, and having the edges bevelled and sharpened at opposite sides of the two teeth, a clearer-tooth having a straight forward edge and inclined rear edge and having its edges bevelled to both sides, and two drag-teeth having their facing edges cut off inclined, and their outer edges straight, and having their edges bevelled and sharpened upon opposite sides, said teeth being arranged in alternating groups, the two cutter-teeth in front of the clearer-tooth forming one group and the drag-teeth forming another group, each group having an intermediate space, as and for the purpose shown and set forth.

No. 21,071. Mop-Holder. (*Manche de Torchon.*)

Donald McLellan, Woodstock, Ont., 11th February, 1884; 5 years.

Claim.—1st. The lever wire spring D B C E, substantially as and for the purpose hereinbefore set forth. 2nd. The groove on the side of the cross head or grooved part of the head-piece B, C, substantially as and for the purpose hereinbefore set forth. 3rd. The hook G on the head-piece, substantially as and for the purpose hereinbefore set forth. 4th. The hooked catches *f*, *f*, on the sides of the socket, substantially as and for the purpose hereinbefore set forth. 5th. The combination of the lever wire spring D B C E, the groove on the side of the cross-head B C, the hook G, and the hooked catches *f*, *f*, substantially as and for the purpose hereinbefore set forth.

No. 21,072. Hat Protector. (*Couvre-Chapeau.*)

Charles A, Helbig, Indianapolis, Ind., U. S., 11th February 1885; 5 years.

Claim.—1st. The centre piece A, which has odd branches, as shown in Fig. 1, so as to prevent an opposite contact of frame when folded, as specified fully heretofore. 2nd. Sliding tubes D applied to rod B, as duly described, so as to enable universal use of my invention, and decrease the size when the whole is folded, so that it may be placed in the smallest crown of a hat when not using. 3rd. The springs G, attached, as clearly specified, acting as a support of the frame, as shown in Fig. 2, and, furthermore, is a factor to facilitate immediate unfolding, the spring being in a strained condition, as shown in Fig. 3, all substantially as set forth.

No. 21,073. Machine for Bending Shanks of Handles for Sad Irons. (*Machine pour Courber les Poignées des Fers à Repasser.*)

John Sabold, Jr., Little Obey, Penn., U.S., 11th February, 1885; 5 years.

Claim.—1st. In a machine for bending the shanks of sad iron handles, the combination, substantially as set forth, of a stationary mandrel having a sunken surface *f* to receive the grasp part of the handle, a raised shoulder *f*1 at each end of said surface and sides which curve, first, outward near said shoulders, and are then hollowed inward and means to bend both shanks about the mandrel at once. 2nd. In a machine for bending the shanks of sad-iron handles, the combination, substantially as set forth, of a mandrel vertical guides, a large head C to move in the guides, two shank formers D pivoted by their upper ends to the head and each having a V-shaped lower end, and laterally adjustable block-guides F at each side of the mandrel. 3rd. In a machine for bending the shanks of sad-iron handles, the combination, substantially as set forth, of a mandrel vertical guides, a large head C to move in the guides, means to bend both shanks about the mandrel, a push *r a* adapted to reciprocate across the top of mandrel and attached to a head *a*1 having a downward inclined side *p*, and a vertically movable rod F having its upper end connected to the said large head and provided on its lower end with an upwardly inclined face *p*1. 4th. In a machine for bending the shanks of sad-iron handles, the combination, substantially as set forth, of a mandrel of requisite form, a head moving in vertical guides and having a horizontal slot I provided with a slide-block Q, two shank formers D to bend both shanks about the mandrel a pivoted lever G having one end pivoted to the said slide block, and the other end weighted and a rotary shaft provided with a cam to move the weighted end of the lever.

No. 21,074. Astronomical Instrument for Illustrating Astronomy. (*Instrument pour Illustrer l'Astronomie.*)

Martin Hoover, Toronto, Ont., 11th February 1885; 5 years.

Claim.—1st. An instrument composed of one spheroidal envelope made of mirrored glass in frames, within which envelope is a hollowed sphere of copper, or other suitable material, in such a way that when a light is fixed in a cavity placed at the south pole of the inner sphere, a spectator placed within this inner sphere will be able to see an image of the phenomena of the universe through apertures giving sight on the inside of the spheroidal mirrored outer envelope, as described and set forth.

No. 21,075. Churn. (*Baratte.*)

William M. Taylor, and Ira P. Merrill, Parsons, Ks., U.S., 11th February, 1885; 5 years.

Claim.—1st. The combined churn and washing-machine, herein shown and described, composed of the box or casing A, having ways G, G at opposite ends, and provided with an arched cover. N, removable bridge-piece B, bearings H, H, driving-gear composed of the crank D, shaft C, cog-wheel E, and pinion F, and rotary cylinder L I, constructed with the slats, or apertures J, and outwardly-flaring wings K, the whole constructed and combined substantially as and for the purpose herein shown and specified.