

nal, and adapted, when moved longitudinally, to simultaneously move the shaft in the same direction, the pinion J for revolving the sleeve G, and means for revolving the pinion J when desired, substantially as described. 3rd. In an axle cutter, the combination, with the face plate C, of an adjusting plate D, adjustably fastened to the face plate and carrying the operative mechanism, substantially as described. 4th. In an axle cutter, the face plate G having the opening, through which the operating shaft passes, considerably larger than the shaft, substantially as described.

No. 32,673. Joint. (*Joint.*)

The E. & C. Gurney Co. (assignee of Charles Levey), Toronto, Ont., 2nd November, 1889; 5 years.

Claim.—1st. A joint formed of a pipe of lead, or similar compressible material, placed between the part to be jointed together, substantially as and for the purpose specified. 2nd. A pipe C, made of lead or other compressible material, fitted into a groove or grooves a made in the section A, substantially as and for the purpose specified. 3rd. A pipe D, made of lead or other similar compressible material fitted into a groove or grooves b made in the section A, substantially as and for the purpose specified. 4th. The pipes C, D, made of lead or similar compressed material fitted into grooves a and b made in the sections A, substantially as and for the purpose specified.

No. 32,674. Horse Detacher.

(*Dételage instantané.*)

James McMorries, Thorp's Springs, Tex., U.S., 2nd November, 1889; 5 years.

Claim.—1st. The combination, with the body and the axle of the crank-shaft journalled on the under side of the body, the sliding rods mounted on the front side of the axle, the ring connected to said rods to draw them together when it is raised, the pulley mounted on the under side of the body, the link connected to the ring, the strap passing over the said pulley, and connected to the link and the crank-shaft, as set forth. 2nd. The combination of the sliding rods, springs to normally hold said rods projected, the crossed levers pivoted together and having their lower ends pivoted to the sliding rods, the ring mounted loosely on the upper ends of said cross levers, and mechanism for raising and lowering said ring, as set forth. 3rd. In a horse detacher, the combination, with the thill clips having the registering eyes E, E, of the sliding spring-actuated rods F, F, engaging normally in the said eyes, the levers I, I, pivoted together and attached at their lower ends to the said rods, the ring K sliding on the upper arms of the levers, the link M attached to the ring, the pulley P mounted on a suitable bearing on the vehicle, the transverse shaft N having the crank O, the band L passing over the pulley P, and connected at its ends respectively to the crank O and the link M, the arm R attached to the end of the shaft N, and the vertical operating rod S, connected at the lower end to the extremity of the said arm, substantially as and for the purpose specified.

No. 32,675. Machine for Compressing Air or other Gas. (*Machine à comprimer l'air ou autres gaz.*)

Edward F. Clarke, Walsall, Eng., 2nd November, 1889; 5 years.

Claim.—1st. The improved method of compressing air or other gas, by means of steam acting upon a column of water interposed between the steam and the air, or other gas to be compressed, substantially as described. 2nd. An apparatus for the compression of air or other gas, compressing steam and water cylinders or chambers, means for alternately admitting steam into the same, and injecting water therein, air vessels connected therewith, and a receiver for the compressed air, substantially as specified. 3rd. The combination, with the steam and water cylinders or chambers and the air vessels, of the steam chest communicating with the boiler, or other source of steam supply, and the main slide valve arranged to be worked by a separate steam cylinder or engine, or by other suitable means, substantially as set forth. 4th. An air or gas compressor having the air vessels B, B', of less capacity than the steam space of the cylinders or chambers, whereby a small quantity of water will be discharged with the air, the loss of water being compensated for by the injection of water into the said cylinders or chambers, substantially as described. 5th. The combination, with the steam and water cylinders and air vessels, of an air receiver or other suitable source of supply having a valve through which the water from the said receiver will be admitted into the steam cylinders or chambers, to condense the steam and to compensate for the loss of water ejected at each operation with the compressed air, substantially as described. 6th. The combination, with the steam and water cylinders or chambers, and the slide valves for controlling the admission of steam and water thereto, of valves automatically actuated, substantially as set forth.

No. 32,676. Road Cart. (*Désobligeante.*)

Nelson H. Hill, Armada, Mich., U.S., 2nd November, 1889; 5 years.

Claim.—1st. In a road cart, the combination, with the shafts, of a spring J terminating in depending ends J', in connection with the crate bars C, the said ends J' adapted to enter an orifice at the end of said crate bars and secured therein, substantially as and for the purposes described. 2nd. In a road cart, the combination, with the shafts, of a spring J provided with depending ends J', and crate bars C of metallic piping, said ends J' and said crate bars adjustably secured to each other, substantially as and for the purposes described. 3rd. In a road cart, the combination of the axle, the shafts, the clips G' secured to the axle and projecting rearward therefrom, the spring G supported in said clips at the rear of the axle, the bolster F, the pivotal seat support E, the seat D, and the crate or body C adjustably suspended at its forward end and from the shafts, substantially as described.

No. 32,677. Foresight for Rifles and other Firearms. (*Mire pour les carabines et autres armes à feu.*)

John Cochran and John R. Bond, Tottenham, Ont., 2nd November, 1889; 5 years.

Claim.—1st. A foresight consisting of a bead A supported by a thin plate B, substantially as and for the purpose specified. 2nd. A foresight consisting of a bead A connected to the thin plate B, which is supported by the posts C, substantially as and for the purpose specified. 3rd. A foresight consisting of a bead A connected to the thin plate B, which is supported by the posts C, connected to the cross-head D, which is fitted into the dove-tailed groove formed in the sight block F, substantially as and for the purpose specified. 4th. A foresight consisting of a bead A connected to the thin plate B, which is supported by the posts C, connected to the cross-head D, which is fitted into the dove-tailed groove formed in the sight-block F, and provided with a pointer H, and acted upon by the spring G, substantially as and for the purpose specified.

No. 32,678. Vehicle Spring. (*Ressort de voiture.*)

William E. Powers, Hastings, Mich., U.S., 2nd November, 1889; 5 years.

Claim.—1st. The combination, with the spring composed of the member C, and the arm c, of the re-enforcing spring composed of the member D, the arm d connected at its outer end with arm c, and the arm E, the latter adapted to normally stand at an angle to the support to which the spring is secured, substantially as and for the purpose described. 2nd. The combination, with the member C having the spring-arm c, of the member D having the arm d, which is connected with the arm c, and having the arm E, which stands at an angle to the support to which the spring is secured, substantially as set forth. 3rd. The herein-described spring composed of the parallel members C and D, the arms c and d at the outer ends of the members C and D respectively, extending in the same direction and connected together, and the arms A and E at the inner ends of the said members, the arm E extending in an opposite direction to the arm A and projecting up at an angle, substantially as described for the purpose specified.

No. 32,679. Edge Turner for Sheet Metal Roofing. (*Ourlieuse pour les feuilles métalliques à toitures.*)

Walter K. Patrick, Urbana, Ohio, U.S., 2nd November, 1889; 5 years.

Claim.—1st. In a roofing machine, the combination, with a frame, of a set of initial rollers, one of which has peripheral configurations K, O, P, and the other of which peripheral configurations M, L, Q, R, to bend the edges of an inserted metallic strip into the plurality of obtuse angles and set of intermediate rollers, one of which has peripheral configurations H, Y, Z, and the other of which has peripheral configurations H, b and c, to bend said plurality of angles into sharper angles, and a final set of rollers, one of which has peripheral configurations h, j, k, and the other of which has peripheral configurations i, l, m, to bend said plurality of sharper angles into right angles, and mechanism to rotate said rollers. 2nd. In a roofing machine, the combination, with a main frame, of a set of initial rollers mounted therein and having peripheral surfaces K, O, P and M, L, Q, R respectively, a set of intermediate rollers mounted therein, and having peripheral surfaces W, Y, a, Z and X, b, c respectively, a set of final rollers having peripheral surfaces h, j, k and i, l, m respectively, means to rotate the said rollers, and guiding and pressing rollers mounted on the frame respectively before and after the initial and final rollers, substantially as shown and described. 3rd. In a roofing tool, a pair of initial rollers having surfaces K, O, P and M, L, Q, R respectively, for the purpose of forming two obtuse angles at each edge of a metallic strip drawn between said rollers. 4th. In a roofing tool, a pair of intermediate rollers having surfaces W, Y, a, Z and X, b, c respectively, for the purpose of further bending the previously bent edges of a metallic strip drawn between them, and whereby two angles are formed at one edge and three at the other. 5th. In a roofing tool, a pair of final rollers having surfaces h, j, k and i, l, m respectively, for the purpose of forming two right-angle bends at one edge, and three right-angle bends at the other edge of a previously bent metallic strip. 6th. In a roofing tool, the combination, with a frame, of two conical compressor rollers, one located at each side of the machine and adapted to press the edges of a right angle bent strip of metal into temporary acute angles.

No. 32,680. Field Mouse Trap.

(*Souricière de campagne.*)

Herman Rippke, Ober Jaschkittel, Prussia, 2nd November, 1889; 5 years.

Claim.—A field mouse trap in which by the action of a spiral spring placed in the mouse hole, a trigger plate b furnished with teeth is engaged between, and liberated from wire limbs 2, 3 and 4, 5, in the manner that, when a captured mouse attempts to escape from the trap it strikes against the trigger plate b thus disengaging the wire limbs, and allowing them to spring together and jam in the mouse, substantially as described.

No. 32,681. Tube Cleaner. (*Nettoyeur de tube.*)

David K. Strachan, Goderich, Ont., 2nd November, 1889; 5 years.

Claim.—1st. In combination with horizontal or vertical pipes or tubes in hot water heaters, the scraper or tube cleaner comprised of two perforated plates connected with a rod extending beyond the front head, whereby the cleaner can be moved back and forth or upwards and downwards over the pipes or tubes, substantially as set forth. 2nd. The flue cleaner or scraper consisting of two