

meshing with the spur wheel Q' , the driving pulley q , keyed on the outer end of the shaft 13, the cord u on the pulley q , the pulley r , on the side of the frame D, and the weight n on the lower end of the cord u , all substantially as set forth and described. 8th. In an excelsior cutting machine, the combination of the standards B, B, carrying the cutter plate S, the table B' , carrying the feed mechanism, the brackets L, I, on the under side of the table, supporting at their outer ends, the dogging roller t , and the dogging roller t' , all substantially as shown and described. 9th. In an excelsior cutting machine, the combination of the standards B, B, carrying the cutter plate S, the table B' , the slot 16, in the frame B, B, for the reception of the bar G, the bar G, inserted in the slot 16, the rods 15, attached to the outer ends of the bar G, and carrying at their lower ends the weights m , m , the brackets 17, projecting downward from the bar G, and having at their lower ends proper journal bearings for the dogging roller t , and the dogging roller t' , all substantially as shown and described. 10th. In an excelsior cutting machine, the combination of the standards B, B, carrying the cutter plate S, the table B' , the slot 16, in the frame B, B, for the reception of the bar G, the bar G, inserted in the slot 16, the rods 15, attached to the outer ends of the bar G, and carrying at their lower ends the weights m , m , the brackets 17, extending downward from the bar G, and having at their lower ends proper journal bearings, for the dogging roller t , the dogging roller t' , the bracket p , or the back side of the standard B, supporting the bent lever o , and the bent lever o' , pivoted to the bracket p , and engaging by its shorter arm the outer ends of the bar G, all substantially as shown and described. 11th. In an excelsior cutting machine, the combination of the standards B, B, with the slides y , y , on the inside of the standards, the slides y , y , in which the cutter plate S reciprocates, and the cutter plate S, having the shaving knives A, and the slitting roller E, all substantially as described. 12th. In an excelsior cutting machine, the combination of the standards B, B, with the slides y , y , on the inside of the standards, the slides y , y , in which the cutter plate S reciprocates, the cutter plate S, having the shaving knives A, and the slitting roller E, the table B' , the bracket I, and the feed mechanism for feeding the block to the cutter plate, all substantially as shown and described, and for the purposes specified.

No. 34,950. Pencil Sharpener and Holder.

(*Porte et taille-crayon.*)

Henry Fanoourt, Opholo, Dunedin, Otago, New Zealand, 1st September, 1890; 5 years.

Claim.—1st. A combined pencil sharpener and holder, comprising a plate provided with a roughened surface, and curved projections extending from one edge of the plate, and serving to receive the pencil, substantially as described. 2nd. The combination, with a plate, of a plate provided with a roughened surface, and secured on the wooden frame of the said plate, and having curved projections extending from one edge of the said plate over one edge of the slate frame, so as to form a convenient holder for the reception of the pencil, substantially as shown and described.

No. 34,951. Furnace Grate. (*Grille de foyer.*)

Maximilian H. Moskovits, Kansas City, Missouri, U.S.A., 1st September, 1890; 5 years.

Claim.—1st. The improved grate bar, having an upper fire surface composed of a series of zig-zag webs c , c , which are united at their ends, the end web pieces c' , c' , and the lower straight longitudinal supporting web cast integral with the upper zig-zag webs, and the zig-zag webs being connected with the series of air passages a , a , by means of connecting pieces a' , whereby a series of the said supporting web, substantially as described. 2nd. The improved grate bar, having an upper fire surface composed of a series of zig-zag webs c , c , which are united at their ends, the end web pieces c' , c' , and the lower straight longitudinal supporting web cast integral with the upper zig-zag webs, and the end pieces, by means of connecting pieces a' , whereby a series of air passages a , a , are formed between said upper series of webs and the supporting web, substantially as described.

No. 34,952. Grain Drill. (*Semoir en ligne.*)

George Wilson Kirkpatrick, Macedon, N.Y., U.S.A., 1st September, 1890; 5 years.

Claim.—1st. The main frame, the drag bars, and their hoes, the rock shaft and its arms, and links connecting the arms with the drag bars, in combination with the worm wheel on the rock shaft, the worm and the worm shaft provided with a hand crank. 2nd. In between the shaft, the drag bars, the rock shaft, and spring connections worm wheel on the rock shaft, the worm and crank shaft to operate in combination with the rock shaft, the main frame drag bars and axle, drag bars, the worm wheel on the rock shaft, the worm, its shaft and the bearing for said shaft mounted at one end on the axle.

No. 34,953. Boot and Shoe. (*Chaussures.*)

Charles Frederick Martine, Boston, Mass., U.S.A., 1st September, 1890; 5 years.

Claim.—1st. In a boot, or shoe, of the class described, the combination of the fly, the spring thereon composed of a plurality of strips of metal, the cord d attached to the boot at one end, at or near the lower end of the fly, the quarter having at its upper end a holder to engage the cord, and devices between the attached end of the cord and the holder to engage the cord, and co-operate therewith in securing the fly, as set forth. 2nd. A boot of the class herein de-

scribed, having the flap or fly formed to overlap the quarter, and provided with a spring b , in its edge, and with an orifice i , in its upper end, the cord d , attached at one end to the inner side of the fly, and passed along said inner side to and through the orifice i , and provided with the enlargement j , the hook k , arranged to be covered by the fly, and to engage the cord near its point of attachment with the fly, and the hook k' , arranged above the hook k , in position to receive the cord d , and engage the enlargement thereof, as set forth. 3rd. The flap or fly having a spring inserted in its edge, composed of a plurality of strips of metal, as set forth. 4th. The boot having the fly c , spring b , orifice i , and hooks k , k' , combined with the lacing cord attached at one end to the inner side of the fly, and provided with the adjustable enlargement j , as set forth.

No. 34,954. Diving Apparatus.

(*Appareil de plongeur.*)

Oliver Polkey, West Duluth, Minnesota, U.S.A., Emery H. Brault, and Joseph L. Boucher, both of West Superior, Wisconsin, U.S.A., 2nd September, 1890; 5 years.

Claim.—1st. In a diving apparatus, the combination, with the upper armor section A^1 , provided with a helmet portion formed integral therewith, and the lower section A^2 , adapted to inclose the lower portion of the body, the meeting ends of said sections formed with straight rear portions, and diverging front portions, said sections having a pivotal connection, as shown, of an encircling band or plate pivotally supported on said armor over the meeting ends of said sections, substantially as described. 2nd. In a diving apparatus, the armor A, formed of two sections A^1 , A^2 , the upper section A^1 , formed with a helmet provided with a foul air outlet in its upper end, a fresh air inlet in the front portion of the upper section, an air deflector arranged on the inner armor side of the section A^1 , to receive the air from the inlet, said deflector consisting of a housing having air jets in its upper end, an air tight covering for said armor sections, the means for supplying the fresh air to the armor, substantially as and for the purpose described. 3rd. The combination, with the metallic body section A^1 , provided with a series of projecting bolts, and the metallic boot sections, of a water proof suit detachably connected to the boot sections, and having an air and water tight connection at its upper end with the said body section A^1 , such connection consisting of a series of plates, as N, provided with one or more apertures adapted to fit over one or more of said bolts, said water proof suit provided with a series of apertures fitting over said projecting bolts, and plates also provided with semi-circular recesses adapted to fit the bolts and to rest on the outside of the rubber suit, and the securing nuts, all arranged substantially as and for the purpose described. 4th. In a diving apparatus, substantially as shown, the combination, with the metallic boots having outwardly flared upper ends of a rubber suit having leg portions adapted to fit over the flared ends of the boot sections, and spring rings for making an air and water tight connection between said boot and leg portions, all arranged as and for the purpose described. 5th. In a diving apparatus, the combination, with a diving armor, substantially as shown, provided with a fresh air inlet at a point below the face of the wearer, and a foul air outlet arranged in the top of the helmet portion, the air pipes C, D, and the hoisting rope S, of the hoisting reel O, provided with sections o , o' , o' , to receive the air pipes C, D and hoisting rope S, said reel provided with hollow cores at the ends, the fresh air pipe communicating with the core, as at p , and the foul air pipe, as at p' , a fresh air inlet connected with the core portion p , and a foul air discharge pipe connected with the core at p' , substantially as and for the purpose described. 6th. In a diving apparatus, substantially as described, the reel O, consisting of three sections o , o' , o' , the sections o , o' having hollow cores or hubs, apertures formed in the sections o , o' , the sections o , o' having hollow cores or hubs, apertures formed in the sections o , o' , communicating with the hollow core sections, said hub or core sections o , o' , provided with fresh air inlet and foul air outlet, respectively, substantially as and for the purpose described.

No. 34,955. Culvert Top and Trap.

(*Couvercle et trappe de ponceau.*)

Robert Smith and George W. Strange, Toronto, Ont., Canada, 2nd September, 1890; 5 years.

Claim.—1st. A culvert top, consisting of a suitable shaped box, having a chute C, fitted with an outwardly-extending lip c , substantially as and for the purpose set forth. 2nd. A culvert top, consisting of a suitable shaped bottomless box, having a removable lid B and a chute C, provided with an outwardly-extending lip c , fitted with gratings d , substantially as and for the purpose set forth. 3rd. A culvert top, consisting of a suitable shaped bottomless box A, having gratings a in its front side, a removable lid B, and a chute C, having an outwardly-extending lip c , fitted with gratings d , substantially as and for the purpose set forth. 4th. The combination of a culvert top, consisting of a suitable shaped bottomless box A, having gratings a in its front side, and a removable top B, with a chute C, fitted with a valve seat d , and a valve D, substantially as and for the purpose set forth. 5th. The combination of a culvert top, consisting of a suitable shaped bottomless box A, having gratings a in its front side, and a removable top B, with a chute C, fitted with a valve seat d and a valve D, provided with female hinges E, through which extend pivots e , having points e' , which rest upon the countersunk bearing surfaces f , of the male hinge F, substantially as and for the purpose set forth. 6th. A hinge, consisting of a female part E, fitted with a pivot e and a male part F, fitted with countersunk bearing surface f , substantially as and for the purpose set forth. 7th. A combined culvert top and trap, consisting of a suitable shaped bottomless box A, having a removable lid B and a chute C, provided with an outwardly-extending lip c , having gratings d , in combination with a valve D, provided with female hinges E, fitted with pivots e , male hinges F, having countersunk bearing surfaces f , on which the points e' , of the pivots e , work, and the valve seat d , substantially as and for the purpose set forth.