

ternal passage communicating with inlet openings from the external air, an provided with outlet openings into the combustion chamber, substantially as and for the purpose described. 3rd. The combination, with the bridge wall or arch extending from the lower front portion of the fire-box rearward and upward, and provided with an internal air space or chamber having inlet openings communicating with the external air and outlet openings into the fire-box, of the deflecting wall depending from the crown sheet of the fire-box downward and forward in front of the upper edge of the said bridge wall, the said deflecting wall being in contact with the crown sheet, whereby the products of combustion are caused to pass beneath its lower edge and sweep along the upper surface of the bridge wall, substantially as described. 4th. The bridge wall or arch extending from the lower front portion of the fire-box rearward and upward, combined with the deflecting wall depending from the crown sheet at the front of the upper portion of the said bridge wall, both the said bridge wall and deflecting wall being provided with internal passages having inlet openings from the air outside of the fire-box, and outlet openings within the fire-box, substantially as described. 5th. The combination of the bridge wall extending rearward and upward from the lower front portion of the fire-box and provided with internal passages having inlet openings from the external air, and outlet openings in the fire-box, with means for injecting liquid fuel into the fire, substantially as described. 6th. The combination of the bridge wall and deflecting wall provided with internal passages communicating with the external air and with the interior of a fire-box, with means for introducing liquid fuel into the fire-box above the bridge wall, substantially as described. 7th. The combination of the bridge wall, inclined rearward and upward from the lower front end of the fire-box and having a passage above it, with the deflecting wall in front of its upper edge, and means to project gaseous fuel over the upper edge of the said bridge wall and against the said deflecting wall, substantially as described. 8th. In a furnace, the grate and inclined bridge wall having a passage above it, combined with an injecting apparatus, substantially as described, for projecting gaseous fuel into the said passage, substantially as set forth. 9th. The bridge wall inclined from the lower front wall of the fire-box rearwardly and upwardly, the said wall being composed of two layers of bricks separated by an air space, which opens into the furnace, at the upper edge of the wall, and communicates with the air at the outside of the furnace at the lower portion of the said wall, substantially as described. 10th. The bridge wall inclined from the lower front wall of the fire-box rearwardly and upwardly, the said wall being composed of two layers of bricks separated by an air space, which opens into the furnace, at the upper edge of the wall, and communicates with the air at the outside of the furnace at the lower portion of the said wall, combined with the deflecting wall depending from the crown sheet in front of the upper edge of the said bridge wall, the lower edge of the said deflecting wall being below the level of the upper edge of the said bridge wall, substantially as described.

No. 18,884. Cider Press. (*Pressoir à Cidre.*)

Hugh Sells, Toronto, Ont., 14th March, 1884; 5 years.

Claim.—1st. In a cider-press, a series of rigid vertical partitions adjustably fitted into the press between the stationary and movable ends having passages for the escape of the liquid, substantially as and for the purpose specified. 2nd. In a cider-press, having a series of partitions arranged between the stationary and movable ends, two rods journaled one on each side of the press and having fingers attached to them, for the purpose of holding the partitions, as specified, in combination with lugs attached to the movable end and so shaped and situated that, upon the forward movement of the head, the lugs come in contact with fingers attached to the rods, causing the said rods to roll in their journals sufficiently to move the holding-fingers clear of the partitions, substantially as and for the purpose specified. 3rd. In a cider-press provided with a movable cover, blocks fixed upon lines fixed to the top of the cover, in combination with wedge-shaped pieces fixed to the side of the press, and located substantially as and for the purpose specified. 4th. In a cider-press, a movable hollow partition made of a series of horizontal strips *f* tacked on each side of the vertical strips *g*, leaving a space between each horizontal strip, and an open space being left between the two rows of horizontal strips, in combination with devices for holding the same in position in the press, and then releasing the same as the press is operated, substantially as and for the purpose specified. 5th. The combination, with the frame *A* and press *B*, having movable end *C* and stationary end *D*, of the wedges *E* fitted into notches made in the frame *A*, and adapted to hold the end *D* away from the frame, substantially as and for the purpose specified.

No. 18,885. Harness Tug Attachment.

(*Ajustage de Mancelle de Harnais.*)

Joseph W. Hill, Jersey Shore, Penn., U.S., 14th March, 1884; 5 years.

Claim.—1st. In a tug attachment, the combination, with the hame connection, of the bolt *a*, rivets *c* and slotted tang *F*, whereby the draft strain on the rivets which hold the bolt to the tang will be taken from the middle of the rivets, as described. 2nd. In a tug attachment, the hook *B* formed with the bar *b*, and tang *F* formed with the slots *a*, *a*, as and for the purposes set forth.

No. 18,886. Whiffletree for Waggon.

(*Palonnier pour Wagons*)

Samuel R. Ames and Jacob Philipps, Louisville, Ky., U.S., 15th March, 1884; 5 years.

Claim.—1st. The combination of the whiffletree *a a*, the spring *D* with metal *a* rivetted thereon, as shown, and centre bearing *G*, with cavity for india-rubber *H*, and the two metal attachments *e* with ends of spring in them, also the guide or strap *J*, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the double-tree *B* with metal pieces *K* screwed on to it, and the clevis *C* in combination with the whiffletree and its attachments, substantially as and for the purpose hereinbefore set forth.

No. 18,887. Washboard. (*Planche à Savonner.*)

James P. Reynolds, Toronto, Ont., 15th March, 1884; 5 years.

Claim.—1st. In an earthenware washboard having transverse corrugations or grooves in the face thereof, the combination of certain perforations widened at the lip made in the bottom of said corrugations or grooves, for the purpose of liberating the used suds from the clothes on the washboard, in the process of rubbing thereon, substantially as described. 2nd. In an earthenware washboard having transverse corrugations or grooves in the face thereof, and widened perforations in the bottom of said corrugations or grooves, the combination of a prepared bed of rubber, or other elastic packing placed underneath the washboard when so required, for the better protection and durability of the washboard, as described.

No. 18,888. Solution for Seasoning and Preserving Wood. (*Solution pour la Préparation et la Conservation du Bois.*)

John Loomis, Jeffersonville, Ind., U.S., 15th March, 1884; 5 years.

Claim.—A solution for seasoning and preserving wood, consisting of lime-water, caustic ammonia and sal-soda, as and for the purpose substantially as described.

No. 18,889. Machine for Channelling Leather. (*Machine pour faire la Gravure dans le Cuir.*)

Thomas K. Clark, Tie Siding, Wyoming, U.S., 15th March, 1884; 5 years.

Claim.—1st. In a machine for channelling leather straps, the combination, with the yielding-bed *Au*, the roller *F*, the housings *B*, *B* and the stocks *L*, *L*, adapted for adjustment within said housings, of the vertically adjustable standards *N*, *N*, secured to the ends of said stocks, each provided with a presser-foot *n*, a knife *M*, a vertically-acting spring *Q* and a lifting device, all constructed and arranged as and for the purpose described. 2nd. In a machine for channelling leather straps, the combination, with the housings placed opposite each other, of guide frames adapted to be adjusted within said housings for different widths of straps, adjustable stocks arranged within said guide-frames, and vertically-acting knives carried by said stocks, as and for the purpose described. 3rd. In a machine for channelling leather straps, in combination with the stationary housings *B* and *C*, carrying each an adjustable cutting-tool, the housings *B* and *C*, of similar construction and arrangement and carrying each similar cutting and holding devices as the parts *B* and *C*, and united to said fixed housings by hinged yokes *F*, *G*, as hereinbefore described. 4th. In combination with the housing *B*, the guide-frame *J* sliding therein, and stock *L* sliding in the guide-frame *J* and carrying the vertically-acting cutters *M*, as and for the purpose hereinbefore described. 5th. In combination with the guide-flange or plate *Z*, roller *F* and adjustable cutting knives, the spring actuated bottom *Au* operating to press and hold the strap in position to be acted upon by the knives, as hereinbefore described. 6th. The combination, with housings *C*, *C*, of the cutter stocks *S*, *S*, adapted for adjustment in said housings, the obliquely arranged cutters *U*, *U* and means for adjusting said cutters and their stocks, as and for the purpose set forth. 7th. The cutter-stocks *S* having interior openings *S*, obliquely arranged slotted knife *U*, plate *V*, fastening screw *X* and set screw *Y*, all arranged and operating as hereinbefore described, for the purposes specified. 8th. The combination, with the cutter-stocks *S* having a groove or recess *u* forming an overhanging projection along its front lower edge, of the cutting tools adapted to be vertically adjusted beneath said overhanging projection, and the screws *X* and *Y*, as and for the purpose set forth.

No. 18,890. Knitting Machine Needle.

(*Aiguille de Machine à Tricoter.*)

Alfred Wood, Detroit, Mich., U.S., 15th March, 1884; 5 years.

Claim.—1st. The combination, with the shank of a knitting machine needle provided with a guide-way, of a heel for engaging the needle cam adapted to be slid back and forth and be adjusted in said guide-way, substantially as described. 2nd. The combination, with the shank of a knitting machine needle provided with a guide-way, of a heel for engaging the needle cam adapted to be slid back and forth and be adjusted in said guide-way, and means for exerting a frictional resistance against said heel to hold it in adjusted position, substantially as described. 3rd. The combination, with the shank of a knitting machine needle provided with an undercut or dovetail guide-way, substantially as described. 4th. The combination, with the shank of a knitting machine needle provided with a guide-way, of a heel *C* adapted to be adjusted in said guide-way, and a spring *D* to hold it in adjusted position, substantially as described. 5th. The combination, with the shank of a knitting machine needle provided with a guide-way, of a heel adapted to be adjusted in said guide-way and provided with a slot, and a pin secured to the shank and engaging with said slot, whereby the movement of the heel transversely of the shank is limited, substantially as described. 6th. The combination, with the shank of a knitting machine needle *B*, provided with a foot *B*, having the undercut or dovetail guide-way, of the heel *C* having the slot *C* therein, adapted to be adjusted in said guide-way, the pin *C* for limiting the adjustment of said heel, and the spring *D* for holding the heel in adjusted position, substantially as described. 7th. The combination, with the shank of a knitting machine needle provided with a guide-way, of a heel for engaging the needle cam adapted to be slid back and forth and, in connection therewith, a lever adapted to operate said heel, substantially as described. 8th. The combination, with the shank of a knitting machine needle provided with an undercut or guide-way, of a heel for engaging the needle cam and a lever for operating said heel, substantially as described. 9th. The combination, with the shank of a knitting machine needle provided with a guide-way, of a heel for engaging the needle cam adapted to be slid back and forth, a lever adapted to be operated said heel, said lever constructed of spring metal and adapted to hold said heel in a given position by its resistance, substantially as described.