cooking stove having a circular front J, movable wood grates B C H I, coal grate E, movable fire pot F, movable front top plate A and the self-feeding attachment G.

No. 11,425. Improvements on Boot and Shoe Heels. (*Perfectionnements aux talons des chaussures.*)

Benjamin F. Locke, Weymouth, Mass., U. S., 21st June, 1880; for 5 years.

Claim. 1st. A heel lift composed of pieces *c* provided, at their contiguous edges, with longitudinal angular lips *d* bevelled from 6 to 9 and adapted to hook one over the other, in such a manner that pressure applied to the face of the lift will tend to tightly close the joint, or joints, between the pieces. 2nd. A heel composed, wholly or partially, of lifts formed of pieces *c* united by means of longitudinal angular lips *d* bevelled from 6 to 9 and adapted to hook one over the other, in such a manner that pressure applied to the face of the lift will tend to tightly close the joint or joints between the pieces.

No. 11,426. Improvements on Horse Collars. (*Perfectionnements aux colliers de cheval.*)

Ebenezer Fisher and John Watson, Kincardine, Ont., 21st June, 1880; for 5 years.

Claim. 1st. In combination with the divided rigid parts A A_1 of a horse collar, the spring actuated hasp provided with a socket in its free end and attached permanently to one of the said parts, and the cross bolt E which connects the flanges of the other parts. 2nd. The combination of the hasp with the bolt *c* to which it is attached, with the collar part A having a series of holes *o* for the reception of said bolt, and the part A_1 having cross bolt E. 3rd. The combination, with the free socketed end of the hasp, and the cross bolt E, of the spring and headed rivet to hold the hasp engaged with said bolt, and also limit its movements. 4th. The combination, with spring hasp and the bolt with which it locks, of the guard bolt H arranged below the free end of the hasp.

No. 11,427. Improvements in Harvesting Machines. (*Perfectionnements aux moissonneuses.*)

Samuel Johnston, Brockport, N. Y., U. S., 21st June, 1880; for 5 years.

Claim. 1st. A compressing band K^1 in combination with the spring rod k_3, compressing arm *o*r and band carrying arm n_1. 2nd. An inside divider composed of parts W W_1, in combination with a cam w^3 for controlling the motion of the part W_1. 3rd. The construction and arrangement of the driving mechanism so that its weight comes upon the side of the driving wheel B, opposite to the cutting and binding mechanism. 4th. The feed rollers *u* u_1, so constructed that in the act of feeding the metallic ribbon *t*, they crimp said ribbon to the form, as shown. 5th. The construction of a band holder t_2, so that its outer or holding edge moves in an eccentric line with reference to the fulcrum of said holder and holds the band with a firmer grip as its tension becomes greater. 6th. The construction of crimping jaws T T_1, in which the jaws are V-shaped and are provided with teeth, whereby they can close up tightly. 7th. The binding mechanism in combination with a rotating platform. 8th. The combination of the revolving gathering compressing device and band carrier, so arranged and operating that it gathers the grain into a bundle and holds it for binding when it falls upon the platform. 9th. The combination of the revolving gathering compressing device, band carrier, binding mechanism and discharging rake. 10th. The mechanism for throwing in and out of gear the revolving platform and binding mechanism composed of the following parts; gear wheels z z_1, cam z z_2, roller z^1, levers b b_2, spring b_1, bevel or driving wheel f^2 and clutch X X_1. 11th. The combination of a compressing device attached to, or moving with a rotating frame, and a vibrating inner divider for compressing the grain into a bundle. 12th. The combination, with a vibrating inner divider, of a compressing arm which is given a rotating movement, upon a vertical axis, to carry it against the divider, and oscillating movement, upon its own pivotal point, to gather and release the grain. 13th. The combination, with a revolving rake and reel, of mechanism for controlling the length of sweep of the successive arms to bring grain of different lengths into a proper relation to the binding mechanism, to receive the band at the middle. 14th. The oscillating band carrier n^1 moving with the rotating frame E, and oscillated by suitable mechanism during such rotation, to carry the band around the bundle of grain. 15th. The combination, with the oscillating band carrier moving with the rotating frame E, of suitable band securing mechanism. 16th. The combination of the band carrier and its oscillating shaft, the rotating frame upon which it is carried and the rake for ejecting the bundle after it is bound. 17th. The combination of an oscillating compressing and oscillating band carrying arm mounted upon suitable frame or carriage, and controlled by mechanism which causes the compressing arm to descend at the outer or grain side of the platform, sweep around behind the cutter bar and gather the grain against the inner divider, then actuates the band carrying arm to place the band around the bundle, and finally give them a further movement to the rear where they are opened, and the bundle delivered. 18th. The combination, with the platform of a harvester and a discharging rake, of two overhanging oscillating arms mounted upon a suitable frame or carriage, and controlled by mechanism which causes one arm to descend at the outer or grain side of the platform, sweep around behind the cutter bar and gather the grain against the inner divider, then actuates the other to descend and grasp the bundle and finally give them a further movement to the rear where they are opened and the bundle discharged by the rake. 19th. The arrangement of the gearing of the rotating reel arms H H and the gearing of the revolving frame P which causes the binding mechanism, so that the binding mechanism shall pass across the front of the platform moving the cut grain in front of it, in the interval between the successive passage of two arms of the reel. 20th. The spiral twister in combination with the cutter. 21st An inner divider composed of parts W_2 W_3 W_6.

No. 11,428. Improvements on Hoop Machines. (*Perfectionnements aux machines à cercles.*)

Jacob Dobbins, Marine, Mich., U.S., 21st June, 1880; for 5 years.

Claim—1st. The eccentric F arranged to receive the hoop while being planed, and hung upon weight shaft *n* having an arm *q*, in combination with the shaft K having arm r r_2, one of which, r_2, projects up through a slot *s*, in the table or bed B. 2nd. The combination, with the knives L L_1, of the cam or eccentric N, whose shaft O is arranged to be held, at different times, in proper position by the pressure of the yielding hands t t, on certain flattened parts t t_1 thereon. 3rd. The combination of the slotted bed B, shaft K having the arms r r_2, cutters or knives m m, weighted shaft provided with an arm *q*, and eccentric feed-roller F, cutter-head T with knives L L_1 and shaft provided with cam feed roller N having flattened parts t_1 t_1, and yielding hands t t attached to the frame A. 4th. The combination of the levers I I_1, the device Y having a shaft with eccentric pivots supported in yielding bearings.

No. 11,429. Brick Burning. (*Cuisage de la briqae.*)

Benjamin Walton, Melbourne, Que., (Assignee of Edwin V Wingard, Pittsburgh, Pa., U. S.,) 28th June, 1880. (Extension of Patent No. 5,077.)

No. 11,430. Process for Making Cotton Yarns. (*Procédé pour faire les fils de coton.*)

Thomas H. Dunham, Boston, Mass., U.S., 28th June, 1880; for 5 years.

Claim—The improvement in the art of making cotton yarns, consisting in reducing the cotton fibres to a slubber roving, then hard twisting one or more of these slubber rovings, so as to produce a large, coarse, hard, twisted yarn, and lastly saturating this yarn with tar and drying it.

No. 11,431. Improvements on Distributors for Fertilizers. (*Perfectionnements aux distributeurs des engrais.*)

Richard B. Sheldon and Joseph V. Peacock, Shortsville, N.Y., U.S., 28th June, 1880; for 5 years.

Claim—1st. The detachable clip C_1 forming a cap over the bearing of the bevel pinion C and attached to the frame. 2nd. The rotating cup E provided with an open or perforated bottom, and having within it a loose rotating cleaner plate H and a stationary feeder F, whereby the central portion is supported and the bottom of the mass is successively sliced away removed, and discharged in a continuous stream. 3rd. The bed A constructed with hollow central hub, the rotating cup E and cleaner H, and the stationary feeder F and shear plate I, combined with the stud B projecting above and below the feeder F, and locking button G and pin *p*, whereby all the parts are securely held together. 4th. The revolving cleaner H provided with one or more shearing arms K K acting against and beneath a stationary shear plate I. 5th. The hollow bearing or hub *b* provided with the internal longitudinal groove or grooves C, combined with the hub B provided with corresponding splines and the locking button G. 6th. The revolving cup E provided with lugs *m* combined with the loose cleaner plate H, the projecting arms K whereof engage with said lugs *m* and cause the cleaner plate to revolve with said cup. 7th. The wedge-shaped bottom G upon the exterior bottom of the frame A, combined with the stud B projecting downward from the feeder F through the central opening of the frame A. 8th. The bed frame A provided with the peripheral flange *d* projecting upward therefrom, combined with the cup or trough E provided with a circular rib *u*, whereby said cup E is seated and centered upon said flange. 9th. The feeder F having a projecting elliptical arm and sharpened along its edge *h*. 10th. In a force feed distributor for fertilizers, a cleaner H having one or more arms and revolving on a pivot.

No. 11,432. Improvements on Lamps and Lanterns. (*Perfectionnements aux lampes et aux lanternes.*)

Louis G. Massow, Cleveland, Ohio, U.S., 28th June, 1880; for 5 years.

Claim—1st. The novel combination of the oil receiver A, oil faucet B, air chamber D, pipes E E and d_1 d_1, circular opening *d*, burner C, glass chimney G, casing K, chimney N, cover N_1, cone partition L and reflector F. 2nd. The oil faucet B surrounded by the air chamber D, the air pipes E E and d_1 d_1, the opening *d*, the burner C and oil receiver A. 3rd. In combination with the oil reservoir A, oil faucet B, burner C, glass chimney G and reflector F, the air tubes d d_1 leading to the air chamber D, which communicates by pipes E D with the outside atmosphere. 4th. In combination with an oil receiver A provided with headed pieces *x x*, the disc J having eccentric openings *w w*. 5th. In combination with the casing or housing K, the chimney N, the top cover N_1 and cone partition L. 6th. In combination with the casing K and chimney N, the projecting rods *k k* attached to the casing K, and the springs *h h* provided with projecting pieces and attached to the chimney N. 7th. In an oil receiver A, the screw cap *a* provided with openings *n n* and self acting valve *m*.

No. 11,433. Improvements on Advertising Devices. (*Perfectionnements aux appareils de publicité.*)

Elmore W Taylor, Detroit, Mich., U. S., 28th June, 1880, for 5 years.

Claim—1st. The advertising device A consisting of the parts A_1 C B, and the tie *c* adapted to be bent and adjusted so as to be self sustaining. 2nd, The advertising device A consisting of the parts A_1 C B, and tie *c* adapted to be bent and adjusted, the part B being in the shape of a watch, piano or any symbol to denote a particular trade. 3rd. An advertising device consisting of a blank, cut so as to be folded into the shape of an artist's easel, with rearwardly extending legs bent from the main frame, at their upper ends, and stayed, at the lower ends, on said frame by suitable tie or brace, the face of said device adapted for printing thereon a business card or advertisement. 4th. The within described blank cut, stamped or made of a single piece of material.

No. 11,434. Machine for Reducing and Shaping Bars of Metal. (*Machine pour réduire et former les barres de metal.*)

George J. Capewell, Cheshire, Ct., U. S., 28th June, 1880; for 5 years.

Claim—1st. In combination with pressure rolls, a driving shaft and suitable gearing, a detachable clutch connecting said shaft with the ba-