

revolving such stirrer in direction opposite to the disk D, substantially as specified. 4th. The combination of the cylinder B, and notched disk D on shaft E, with the cone L supported on disk D, and with the stirrer H₂ and mechanism for revolving said stirrer in direction opposite to the cone and disk D, as specified. 5th. The stirrer H₂, constructed of outwardly and downwardly projecting rods that are secured to a collar A₂, as described. 6th. The cylinder B having discharge chute C, combined with the reciprocating hopper I and reciprocating plunger L, as specified. 7th. The combination of the cylinder B, rotary notched disk D, stationary scraper H and chute C, with the hopper I having perforated wall M, plunger L and mechanism, substantially as described, for first lowering said hopper, then said plunger, then raising said hopper and then said plunger, as and for the purpose specified. 8th. The binder rest apron M, combined with the sliding frame N having roller U, tilting frame P and spring J₂, substantially as herein shown and described. 9th. The combination of the apron M, with the frame N having roller U, pivoted frame P having cross-car 12, spring J₂, and stationary bracket K₂, substantially as described. 10th. In a bunch machine, the combination of the cylinder B having notched disk D and chute C, with the reciprocating hopper I, reciprocating plunger L, apron M, sliding frame N having roller U and bunch receiver R, substantially as specified. 11th. The apron M made with the fluting A₂, as and for the purpose described. 12th. The apron M made of segmental form, and combined with the tapering roller U, and with mechanism, substantially as described, for moving said apron and said roller on the rolling board, as specified. 13th. The segmental rolling board L₂, combined with the sliding frame N, segmental apron M, tapering roller U, and binder lifter P, substantially as and for the purpose described. 14th. The segmental rolling board L₂, combined with the sliding frame N, segmental apron M, tapering roller U, and binder lifter P, the apron M having the projecting fluting A₂, substantially as and for the purpose described. 15th. The combination of the bracket O, pivoted at J₃ with the frame N which is rigidly attached thereto, and with the segmental rolling board L₂ and segmental apron M, and with mechanism for moving said bracket around its pivot, substantially as specified. 16th. The combination of the segmental rolling board L₂, with the sliding frame N having tapering roller U, apron M, binder lifter P which is pivoted to said frame N, and with the finger G₂ on the stationary frame A, substantially as herein shown and described.

No. 25,383. Lath Bolter. (*Scierie à Latte.*)

Isaac M. House, Gravenhurst, and Alfred R. Williams, Toronto, Ont., 17th November, 1886; 5 years.

Claim.—1st. The rope or chain feed D, operating the block carriage B, and connected, by means of the connecting rod N and crank-shaft M, with the wedge-block L, which causes the friction roller H to engage with the outer rim of the friction pulley G. 2nd. The wedge-block L, operated on the pivoted arm K, in combination with the lever M, connecting rod N and rope or chain feed D, all arranged and operating as shown and for the purpose specified. 3rd. The wedge-block S operated by the lever S, substantially as shown and for the purpose specified. 4th. The yoke L, in combination with the block-carriage B, substantially as shown and for the purpose specified.

No. 25,384. Device for Stretching and Tuning Strings. (*Appareil pour Tendre les Cordes et les Accorder.*)

Abraham Feldlin and C. H. Henning, Ithaca, N.Y., U.S., 17th November, 1886; 5 years.

Claim.—1st. In a string-stretching or tuning device, the combination of the pin C, with a frame A provided with a hole or socket e, larger at d, than the said pin to insure contact between the pin and frame at the points e, only of the said hole when the string is stretched, substantially as and for the purpose set forth. 2nd. In a string-stretching or tuning device, the combination of the cylindrical pin C, with the frame A having a correspondingly cylindrical hole e, enlarged at d, in order to insure contact at e, only while under the strain of the string-tension, substantially as and for the purpose set forth. 3rd. In a string-stretching or tuning device, the combination of the pin C, with the frame A having hole e to receive the said pin, of the said frame A having a recess a at the upper end and concentric with the said hole, and the said hole being enlarged at d, to insure contact at e, only while under the strain of the string-tension, substantially as and for the purpose set forth.

No. 25,385. Metal Screw Machine.

(*Machine à Vis Métalliques.*)

Jacob Stehli and The Hartford Machine Screw Company, Hartford, Conn., U.S., 17th November, 1886; 5 years.

Claim.—1st. The combination of a longitudinally reciprocating carriage, a rotary mandrel supported by said carriage, a quill within said mandrel adapted to clamp the wire and the reducing threading advance-cutting and cutting-off mechanisms, substantially as set forth. 2nd. The combination of a carriage, means for reciprocating the same, a rotary mandrel supported by said carriage, a quill within said mandrel, mechanism for reciprocating said quill independently of the mandrel, a reducing tool, a threading die, an advance-cutting and a cutting-off tool, and mechanism for actuating said tools, substantially as set forth. 3rd. The combination of a longitudinally reciprocating carriage, a rotary mandrel supported by the same, an independently-reciprocating quill within said mandrel, mechanism for rotating and reversing the mandrel, and the reducing threading advance-cutting and cutting-off mechanisms, substantially as set forth. 4th. The combination of a longitudinally-reciprocating carriage, a rotary hollow mandrel supported by said carriage, a wire-guiding quill within said mandrel adapted to reciprocate in said mandrel and independently therefrom, mechanism for turning down, threading, advance-cutting, and cutting-off, the screw and jaws for clamping the wire after screw has been cut off, and a longitudinal

cam-shaft having cams for actuating said mechanisms, substantially as set forth. 5th. combination of the main-shaft L, cam a, fulcrumed lever b having set screw 26, carriage D having a projecting nose b₁, and mechanism for vertically adjusting the same, whereby the extent of motion of the carriage is regulated, substantially as set forth. 6th. The combination of the rotary main shaft B having cam a₂ and nose d₂, fulcrumed lever d, having a forked upper end, a rotary mandrel D₂, a sliding sleeve d₄ having curved hub and collar d₅, an interior quill D₃ having a chuck D₄ at one end, and a shoulder d₂ at the opposite end, and levers d₁ fulcrumed to a sleeve of the mandrel, and having interior noses d₃ engaging the shoulder d₂, so as to move the quill independently of the mandrel, substantially as set forth. 7th. The combination of the longitudinal main-shaft B having cam a₃, a fulcrumed and spring-actuated stop-lever e, and a reciprocating carriage D having an adjustable stop-device e₂ at one side thereof, substantially as set forth. 8th. The combination of the longitudinal main-shaft B, a cam a₄ with the longitudinally-reciprocating carriage D, a mandrel D₁ supported by the carriage, a fast pulley p₁ and loose pulleys p on said mandrel, a fulcrumed lever p₂ having belt-shifting devices at their upper end, and cross-belt engaged by said belt-shifting device, so as to impart a rotary motion to the mandrel and reverse the same at the proper moment, substantially as set forth. 9th. The combination of the main-shaft B having a cam a₅, a fulcrumed lever i, a movable wire-clamping jaw l, at the upper end of the lever i, and a fixed jaw l supported on an upright standard A₇, substantially as set forth. 10th. The combination of the longitudinal main shaft B, cam a₆, a fulcrumed lever z, an upright standard A₈, laterally-reciprocating slide-plates B₁, H₁, spring E₁, reducing tool E₂, and cutting-off tool H supported by said slide-plates, and set-screws E₃ and E₄, substantially as set forth. 11th. The combination of the main-shaft B, adjustable slide-rod z, upright standard A₇ having slots e₁ and ways g₁, fulcrumed and slotted levers e₂, connecting link g₂, and a laterally-adjustable advance-cutter G guided in ways g₄, substantially as set forth. 12th. The combination, with a longitudinally-reciprocating carriage having a mandrel supported on said carriage, an independently reciprocating quill within said mandrel, mechanism for reducing, threading, and cutting off the screw, and a stop-motion connecting the mandrel and quill with the clutch mechanism on the driving shaft, so as to stop the motion of the machine whenever the end of the wire leaves the quill, substantially as set forth. 13th. The combination, with a reciprocating carriage D, a mandrel D supported by said carriage, an interior independently-reciprocating quill D₁, a drop-pin L passing through slots of the mandrel and quill, a spring actuated lever L₁ fulcrumed to the mandrel and engaging the drop-pin L, a longitudinal rod L₂ having arms L₃ and L₄, a hinged arm L₅ having a set screw L₆, and a transversely guided and spring-actuated shaft L₇ having cross-pin L₈ and lug L₉, the latter engaging the clutch of the driving shaft, substantially as set forth.

No. 25,386. Thill Coupling. (*Armon de Lamonière.*)

William H. Vail, Cornwall-on-the-Hudson, N. Y., and Arthur F. Whitin, Whitesville, Mass., U.S., 19th November, 1886; 15 years.

Claim.—1st. In a thill coupling, the combination of a vertically acting clamping bolt passing through the axle clip, and provided with a rearwardly extending clamping flange or jaw adapted to close down upon the cross-bolt of the thill iron when it is in the axle clip, substantially as and for the purposes set forth. 2nd. In a thill coupling, a clamping bolt located in the axle clip and having a rearwardly extending flange or jaw adapted and arranged to hold the cross-bolt of the thill iron in place, said clamping bolt being provided with a spring washer against which the nut thereon bears, substantially as and for the purposes described. 3rd. In a thill coupling, the combination, with the cross-bolt of the thill iron, of a clamping bolt passing through the axle clip, a recess in said clip containing a spring washer, against which a shouldered nut presses, said nut being held against displacement by the clip bar passing beneath the axle, substantially as shown and described. 4th. A thill coupling consisting of coupling iron B, bolt H provided with a rubber cushion I, clamping bolt J, spring washer K, shouldered nut L, clip D and clip bar P, the whole combined and arranged substantially as shown and described. 5th. The combination, in a thill coupling, of a clip bar passing beneath the axle provided with an apertured end, extending forwardly and engaging with, and supporting the nut of a clamping bolt, so that the clip bar will hold the nut in place upon unscrewing the same and cause the projection of the clamping bolt, substantially as and for the purposes set forth. 6th. The combination, in a thill coupling, of a vertically acting clamping bolt passing through the axle clip, and provided with a clamping flange or jaw adapted to close down upon a cushion for the bolt of the thill iron, and a cushion for said bolt resting in a recess formed in the axle clip, substantially as and for the purposes set forth.

No. 25,387. Fuel Support for Stoves and Furnaces. (*Grille de Poêles et de Calorifères.*)

Emile R. Weston, Elijah R. Jacques, Charles Schweizer, Bangor, Me., Charles Schweizer, Boston, John A. Driscoll, Everett, and John A. Driscoll, Maplewood, Mass., U.S., 19th November, 1886; 5 years.

Claim.—1st. In a stove, furnace, or fire-box having a downward draft, the fuel supports B formed with the longitudinal flues e and apertures i, and with or without the flanges g, p₁, substantially as described. 2nd. In a stove, furnace, or fire-box having a downward draft, the hollow bricks or diaphragms C formed with the longitudinal flues e, with or without the flanges p₁, substantially as described. 3rd. In a stove, furnace, or fire box having a downward draft, the combination of the fire-box E having back at, door e with register, fuel supports B placed between the fire box and combustion chamber p, and having the flues e, apertures i, and flanges g, p₁, register b, combustion spaces h and combustion chamber p, substantially as described. 4th. In a stove, furnace, or fire-box having a downward draft, the combination of the fire-box E, door e, fuel supports B placed between the fire-box and combustion chamber p, and having