

tension rod *b* and provided with the pivots *j j*, of the head *A*, of the frame provided with open notches *i i*, the whole so arranged that, by tightening the tension rod, the pivots are drawn into the notches and the latter form the bearings for both levers. 2nd. The combination, with the lever *D*, of the plate *I* attached by a single screw, so that the lever has a lateral adjustment and provided with side pivots *j j*. 3rd. The combination, with the lever *D*, of the plate *L* secured to the bed of the machine by a single screw and provided with the standards *l l* embracing the lever, said standards being located obliquely to each other, and rounded or bevelled on the inner sides fitting the levers. 4th. The combination, with the two levers *D D* constituting the saw frame, of the plates *I L*, connected respectively with said levers, said plates being attached to their supports by single screws, and so arranged as to allow lateral or side adjustment to the levers to centre the saw. 5th. The combination, with the crank wheel *H* provided with the open rim *m* of disk *m*, fitting within the rim provided on its under side with the skeleton ribs *n n*, and the dog or dogs *p* resting in the spaces between the ribs engaging with the rim, to give motion to the crank wheel when the disk is turned in one direction, but disengaging therefrom, to allow back action of the disk when it is turned in the other direction.

No. 12,009. Improvements on Stop Watches.

(*Perfectionnements aux montres à repos.*)

Henry A. Lugin and Prosper Nordmann, New York, U. S., 24th November, 1880; for 5 years.

Claim.—1st. The combination of arbor *A*, of the third wheel, said arbor having a fixed disk *a*, and square portion above the disk, and of the transmitting wheel *B* with a conical clutch sleeve *b* having a square hole for the arbor, and with a binding spring arm *b*. 2nd. The combination of the arbor *A* of the third wheel having a disk *a*, transmitting wheel *B*, conical clutch sleeve *b* and spring arm *b*, with a lever *D*, having bevelled projecting portion *d*. 3rd. The combination of the transmitting mechanism *A B*, clutch device *C* and friction disk *e*, of the arbor of the turning hand, with a lever *D* that is adapted to apply or release the clutch device from the transmitting wheel simultaneously with binding on or releasing the friction disk of the time hand.

No. 12,010. Improvements in Heating Stoves.

(*Perfectionnements aux poêles de chauffage.*)

Oscar W. Noble and Edrick A. Bartlett, Wakefield, Mass., U. S., 24th November, 1880; for 5 years.

Claim.—In a heating stove, the base *A* provided at its bottom with an opening *b* for the admission of the external air, a chamber *C* and an air flue or flues *a* in communication therewith and with the opening *b*, and having outlet apertures *c* for the escape of the heated air, in combination with a flue *D*, extending entirely around the bottom of the base *A*, through which the heat and products of combustion are caused to pass, for the purpose of heating the upward currents of air, which enter the opening *b* and escape through the outlet apertures *c*.

No. 12,011. Improvements on Hydro-Carbon Furnaces and Burners.

(*Perfectionnements aux fourneaux et aux alimentateurs des fourneaux à hydro-carbure.*)

William D. Dickey, New York, U. S., 24th November, 1880; for 5 years.

Claim.—1st. The combination of the fire space of a steam boiler, of a steam super-heater located in said fire space, a steam pipe *B* leading from the steam space in the boiler to said super-heater, provided with a cock *a*, the nozzle *C*, a steam pipe *B* leading from said super-heater to said nozzle, the nozzle *C* arranged relatively to the nozzle *C*, the fuel holding tank *H* and conductor *G* leading from the same to the nozzle *C*, provided with a cock *a*, the nozzle *C* and air inlet passage *C* arranged relatively to the nozzle *C*, the said nozzle *C* and fuel arranged relatively to the fire space to discharge steam, air and fuel directly into said fire space without any intervening conductor. 2nd. The combination, with a fireplace, of the nozzles *C* and *G*, the hood *E* within which the said nozzles are located and by which they are supported, so that liquid fuel issuing from *G* will be atomized and projected by steam issuing from *C* directly into said fireplace, without passing through any intervening conductor. 3rd. The combination, with a fireplace, of the nozzle *C* and nozzle *C*, the former located concentrically within the latter, an air passage to *C* a steam conductor leading into *C*, the nozzle *C* arranged relatively to the nozzle *C* and a fuel supply conductor leading into *G*, whereby liquid fuel issuing from *G*, may be atomized and projected into the fireplace by steam issuing from *C*, and at the same time air drawn into the nozzle *C*, by the action of the steam, will be mingled with the inflowing current of steam and fuel before they reach the combustion chamber in the fireplace. 4th. The combination, with the fireplace *a* of a steam boiler, of a steam super-heater *B*, located in the upper part of said fireplace, the steam nozzle *C* and fuel nozzle *G*, whereby fluid issuing from *G*, may be projected into the fire place by steam issuing from *C* and the backwardly inclined bridge wall *a*, whereby the flame made by the combustion of said fuel will be deflected on to said super-heater towards the upper part of said fireplace. 5th. The combination of the boiler *a*, fireplace *a*, steam super-heater *B*, steam pipe *B*, provided with stop cock *a*, water tank *D*, and pipe *D* leading into pipe *B*, and provided with stop cock *a*. 6th. The combination of a fireplace, a steam super-heater located in said fireplace, a water or steam supply and pipe leading therefrom to said heater, the nozzle *G* and a pipe leading to a liquid fuel supply, the nozzle *C* arranged relatively to the nozzle *G*, the air blower *F*, and air conductor *C* leading from said blower to the nozzle *C*, and provided with a stop cock *a*. 7th. The nozzle *C*, blower *F*, conductor *C* leading from the said blower and provided with stop cock *a*, the pipe *C* leading from *C* to said nozzle *C*, the open end *c* of said conductor, and stop cock *a* between the pipe *C* and said open end. 8th. The nozzle *C*, nozzle *C* located concentrically within *C*, the blower *F*, and conductor leading from said blower to the nozzle *C*, the nozzle *C* being provided with the spindle valves, whereby the said nozzle may be closed when the said blower is in operation, to prevent the air from backing into said nozzle *C*, and may be opened when the blower is stopped and steam let into said nozzle *C*. 9th. The combination, with the fire place *a*, of the hood *E*, provided with the conical condenser *E*, projecting towards the fireplace, air openings *b b* and the nozzle *C* arranged within, and supported by said hood, and the pipe connections of said nozzles.

No. 12,012. Improvements on Corn Brooms.

(*Perfectionnements aux balais de houque.*)

Joseph C. Reed, Brantford, Ont., 24th November, 1880; for 5 years.

Claim.—The combination of the block *B*, having a groove in its lower edge to receive the broom corn *C*, and provided with the handle *A*, to which is fitted the sleeve *H*.

No. 12,013. Improvements on Grain Separators.

(*Perfectionnements aux séparateurs des grains.*)

John A. Krake, Buffalo, N. Y., U. S., 24th November, 1880; for 5 years.

Claim.—1st. The combination, with the fan case made in different sections, and separate fans resting in said sections, of the dividing board *G*, located between the sections of the fan case forming heads to the same, provided with openings to admit air to the sections and serving to produce suction. 2nd. In a grain separator having its fan case made in sections, with separate fans resting in the sections, the dividing board *G* having its inner portion in a single thickness, and its outer portion in two separate thicknesses, with an air passage between, said board forming a complete head to the two sections, and allowing air to be supplied to both sections by entering between the two thicknesses at the rear. 3rd. In combination with the separate sections of the fan case, and the separate fans resting therein, the directing board *H* extending inward from the fan case and beneath the same, and the two wings *K K*, on the directing board, converging centrally between the sections, whereby the currents, which are drawn in opposite directions and away from the centre of the machine by the two fans, will be forced toward the centre by the wings. 4th. The combination of the directing boards *H I* and the vertical dividing board *G*, the upper directing board *I* being notched into and supported by the board *G*. 5th. The agitator *F*, constructed with the two edged tenons *f f*, and provided with the pivoted button *h*, in combination with the socket *g* on one side, and the groove *g* and cross slot *i* on the other side of the shoe, whereby said agitator is made removable. 6th. The combination, with the upper shoe *L*, of the bracket bearings *M M* and hangers *N N*, the bearings being made hollow and open on their under sides, and the hangers being made of elbow form and arranged to strike into and be guided by the hollow bearings. 7th. The combination, with the upper shoe *L*, of the hangers *N N*, of elbow form and unequal length, arranged above the shoe and sustaining the same, the upper and lower pivots being in a vertical line, the whole so arranged that the shoe maintains a level position at all points of the vibration, and its outer end receives a greater vertical than its inner end. 8th. The combination, with the hangers *N N* made of elbow form and of unequal length, of the diagonal brace *O* connecting the hangers, said brace being made of spring metal so as to spring by torsion and compensate for the unequal vibration of the two hangers. 9th. The shoe *L*, mounted at either end upon springs *Q Q* arranged to vibrate laterally in the line of an arc, and in a plane parallel to that of the shoe. 10th. The bearing *P* and key *I*, constructed at the front end with the sharp edged bearings *o o* for clamping and holding the spring *Q* and hollow *n* to allow free play of the spring, the rear end of the spring being free to move out and in. 11th. The combination of the key *I* provided with the lateral lugs *m m* and the bearing *P*, constructed with corresponding lateral sockets to receive the lugs, the whole so arranged as to leave an opening between the key and the bearing, for the free passage of the end of the spring *Q*. 12th. The combination of the inclined discharge board *R*, standing at a reverse angle to the screen *q* below it, for compressing the blast and the adjustable sliding plate *r* on the outer end of said screen *q*, so arranged that it can be moved toward or from the discharge board to receive the contents therefrom, and produce proper separation of the light and heavy grain under the varying intensities of the blast. 13th. The combination, with the shoe *L*, of the pivoted jolting bar *t* attached thereto, and a pin *a* upon which the jolting bar rests, said pin being made adjustable higher or lower, to change the vertical throw of the shoe without increasing the length of vibration. 14th. The combination of the pivoted jolting bar *t* and bar *v*, said bar *v* being adjustable higher or lower, and provided with a pin *a* upon which the jolting bar rests. 15th. The combination with the jolting bar *t* provided with a slotted lower end, the bar *v* provided with a pin *a* resting in the slot of the jolting bar, a head upon the end of the bar provided with teeth which engage with corresponding teeth, of the block *z* and bolts *w w*, one forming the pivot, and the other the clamp. 16th. The combination, with the upper slide *S*, of the lever *T*, pivoted at one end to a stationary part of the frame passing through a loop of the slide projecting through the case, and having, at the outer end, a tooth *d*, which engages with a ratchet plate *f* for raising and holding the slide. 17th. The crank arm *W*, constructed with the arm *z*, the pin *h*, and the curved web *g*. 18th. The combination, with the rock shaft *U* and pitman *K*, of the joint piece *X* consisting of the casting *W* fastened to the rock shaft, and the socket end *m* pivoted to the casting, and having at its outer end an eye *n* for receiving the pitman.

No. 12,014. Improvements on Watchmakers' Lathes.

(*Perfectionnements aux tours des horlogers.*)

Joseph Kesselmaier, Gallion, Ohio, U. S., 24th November, 1880; for 5 years.

Claim. 1st. The combination of the hollow spindle *B* and the threaded rod *E* of the head *B*, cap *C*, plates *B* *B* and spring *b*. 2nd. The combination, with the hollow spindle *B*, threaded rod *B* and cap *C*, of the plate *B*, provided with a threaded hole for the attachment of a chuck, said plate being secured between the cap and head, and adapted to be moved radially and secured in desired position by the threaded rod *E*, and a plate bearing against the side of the plate *B*. 3rd. The combination, with a hollow spindle *B*, threaded rod *E* and spring *b*, of a recessed head fastened to the end of the hollow spindle, cap *C* and a plate *B* located between said recessed head and cap, and adapted to be moved radially therein, and secured in any desired position by the screw threaded rod *E*, and plate *B* interposed between the end of rod *E* and plate *B*, the latter provided with a threaded hole for the attachment of a chuck. 4th. The combination, with a hollow spindle *B*, threaded rod *E*, and spring *b*, the latter surrounding the end of rod *E*, of a recessed head between said recessed head and cap, and adapted to be moved radially therein, said plate being provided with a threaded hole for the attachment of a chuck, and a plate *B* for distributing the pressure of the screw threaded rod *E* upon plate *B*. 5th. The primary clamping device