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**INVENTIONS PATENTED.**

**No. 14,117. Improvements on Elliptic Springs.** (*Perfectionnements aux ressorts elliptiques.*)

Edward Cliff, Newark, N. J., and Benjamin S. Clark, New York, N. Y., U. S., 2nd February, 1882: for 5 years.

*Claim.*—1st. An elliptical spring constructed of a bar of steel, whose thickness is greatest through its middle from end to end crosswise and lengthwise, and whose sides *d d* are of the same thickness from end to end, thus obviating the point of fracture. 2nd. The grouping of two or more leaves of varying lengths together forming an elliptical spring constructed of an elliptical bar, the said leaves resting directly on each other with no intervening medium.

**No. 14,118. Improvements on Shingle Machines.** (*Perfectionnements aux machines à bardeau.*)

Willis I. Perkins, Grand Rapids, Mich., U. S., 6th February, 1882: for 5 years.

*Claim.*—1st. The method of making a coursing line or lines on a shingle, while the shingle bolt is moving. 2nd. The method of making a coursing line or lines on a shingle parallel with the butt thereof, while the bolt is moving. 3rd. In a shingle machine, the combination, with the movable carriage having a rigid head block and a sliding dog, of a marking device rigidly secured at a predetermined distance from the said head block, and a marking device situated on the dog side of the machine and adapted to be moved laterally, so as to make a coursing line or lines, at a predetermined and parallel distance from the butt of the shingle. 4th. The combination, with the movable carriage having a rigid head block and a sliding dog, of a horizontally adjustable frame secured to vertically adjustable brackets, a marking device rigidly secured on the frame under the carriage, on the head block side of the machine, a marking device secured on the frame on the dog side of the carriage and adapted to be moved laterally by any suitable mechanism, so as to make the coursing line or lines at a predetermined and parallel distance from the butt of the shingle. 5th. The combination, with the frame of the machine having a cross girt secured thereto between the saw and tilt table, and provided with vertically adjustable brackets, adapted to form bearings for frames or tables on which the marking pots and mechanism for moving one pot respectively rest, of two marking pots one of which is rigidly secured to said frame and the other connected by a rod to a sliding frame having a large wheel adapted to engage the bolt, and a wheel secured to a rigid bearing on the sliding frame, and a spring actuated wheel adapted to engage with the rod secured to the under side of the dog arm and constantly keep the large wheel in contact with the bolt. 6th. The combination, with the outer casing of the ink pots, of a spring pressed shaft having rollers secured thereto, and a marking shaft having marking rollers secured thereto, which latter are adapted to revolve the said inking rollers by frictional contact therewith. 7th. The combination, with the carriage, of the corner irons secured thereto and provided with a cored rectangular space having bevelled or converging sides, one of the said sides being removably secured thereto. 8th. The corner irons rigidly secured to the carriage and provided on their under sides with cored rectangular spaces having converging or bevelled sides, one of said sides being removably secured thereto and hard wood slide bearings adapted to be introduced into the rectangular spaces and retained therein by the removable side. 9th. The horizontally revolving rollers secured to the carriage in such a position to take the side draft or pressure produced by the cutting of the saw. 10th. The corner irons secured to the carriage and provided with slide removable

bearings and uprights having horizontal journals therein, through which the rock shaft, which operates the dog has bearing, the lower portion of the said upright being hollowed out and provided with an internal lip, an arm carrying a horizontal roller and pivoted at one end to the frame of the carriage and adapted to enter the hollowed portion of the upright and rest on the lip, and a screw for regulating the arm. 11th. The combination, with the front and rear supporting legs connected by inclined longitudinal braces, the horizontal portions of the said braces being screw threaded, of vertical plates secured to the foundation of the machine, and provided with openings through which the braces pass, and a nut by which the machine is moved backwards or allowed to be drawn forward, which respectively tightens or loosens the drive belt as desired. 12th. The combination, with the front and rear supporting legs connected together by inclined longitudinal braces, screw threaded as described, the said front legs being provided with projecting tongues adapted to fit under loops secured to the foundation, of vertical plates secured to the foundation and provided with openings through which the inclined braces pass, and a nut adapted to bear against the said vertical plate and move the machine backward, thereby tightening the drive belt. 13th. The combination, with the shingle machine carriage, of the head block *F*, forged from a single piece of steel and adapted by its peculiar shape to assist in seating the bolt on the tilting tables and direct the flying sawdust from off the machine. 14th. The combination, with a horizontal saw and vertical saw arbor having its lower extremity provided with one or more annular grooves, of journal boxes having their inner sides provided with corresponding horizontal projections which respectively fit in said annular grooves. 15th. The combination, with a horizontal saw, a vertical saw arbor whose lower extremity is provided with one or more annular grooves, and journal boxes having interior horizontal projections which respectively fit in said grooves, of gibs which fit in an annular groove of the saw arbor above the journal boxes, and screws which secure the gibs to the top of journal boxes in vertical adjustment. 16th. The combination, with a horizontal saw, a vertical saw arbor, and journal boxes having their exterior sides provided with horizontal grooves, of bridge pots having their interior lateral projections extending lengthwise with the machine and which fit in said grooves, and set screws which maintain the journal boxes at the desired point of adjustment on said projections. 17th. The combination, with a horizontal saw, a vertical saw arbor and bridge pot, of journal boxes for the arbor fitted in said bridge pot, and a screw which vertically adjusts the latter. 18th. The combination, with a saw arbor and journal boxes fitted in a bridge pot, of a cross girt provided with a vertical guideway in which the bridge pot slides, and a screw which vertically adjusts the latter. 19th. The combination, with a horizontal saw, a vertical saw arbor provided with an annular groove, and journal boxes having their meeting edges provided with upper extensions, of gibs whose extremities have lateral bearings against said extensions, and adjusting screws which secure said gibs to the top of the journal boxes at different heights therefrom. 20th. In a shingle machine carriage, the combination, with a dog, a head block and rack and pinion mechanism, connecting them, of arms which connect the dog with a rock shaft, and a spring pressed pawl which engages with a circular rack formed on the carriage. 21st. The combination, with a carriage frame provided with longitudinal slots in its opposite sides, a dog whose extremities project through the slots and are provided with racks formed lengthwise with the carriage, and mechanism which moves the dog, of a head block whose extremities are provided with rack bars extending lengthwise with the carriage, and two pinions located on opposite sides of the carriage, and respectively connecting the rack bars of the dog with the rack bars of the head block. 22nd. The combination, with a carriage frame whose sides are provided with longitudinal slots, a dog having its extremities projecting through the latter, and provided with bars extending lengthwise with the carriage, the lower sides of said bars being formed as racks, of a head block whose extremities are provided with bars extending below the rack bars of the dog, and having their upper sides formed as racks, and two pinions located on the outer sides of the carriage frame and respectively connecting the rack bars of the dog with the rack bars of the head block, said dog being provided with actuating mechanism. 23rd. The combination, with rack shaft *L2*, rod *b4* having a limited pivotal movement on said shaft, and stationary racks *a2*, of an arm *a2* rigidly secured to said shaft, and spring pressed pawl *b2* pivoted to the arm, said rod *b4* operating by its limited pivotal movement to disengage the pawl from the rack, before turning the rack shaft. 24th. The combination, with two independent tiltways, of a shifting device which moves said tiltways inde-