(12) **United States Patent**
Preston

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(54) **BOOTS & SHOES, PEGGED**

(76) Inventor: **Samuel Preston**

Samuel Preston. — Letters Patent.

The schedule referred to in these letters patent and making part of the same containing a description in the words of the said Samuel Preston of his improvement in the machinery for making Boots and Shoes and finishing the same with pegs of wood or metal ——— ——— ——— ———

To all to whom it may concern. Be it known that I Samuel Preston of Danvers in the County of Essex in the state of Massachusetts have invented a machine for making shoes and finishing the same with pegs either of wood or metal and that the following is a full and exact description of the same ———

——— The frame of the machine may be of wood or other material of sufficient strength with a platform which may be conveniently placed about two and a half feet from the floor on which it stands a space being left for the passage of the shoe carriage and the working of the awls and peg drivers to be presently described ———

——— On either side of the vacant space in the centre rise columns or uprights usually of iron and these are connected at the top by a crosspiece. These uprights form a traverse way or guides for the hammers, and through these an arbor passes turning in bosses fitted into the uprights. The arbor has fixed to it in the centre between the columns the cam or lifter which raises the hammer once at each revolution of the arbor. on either end of the arbor on the outside of the upright is a crank and band wheel for the purpose of communicating motion to the intermitters and the application of the moving power is likewise made to this arbor. The cam or lifter fixed on the centre of the arbor revolves against a friction wheel in the top piece of the hammer frame. The cam first strikes the friction wheel near to the arbor, on which it is fixed but diverging as it revolves it carries up the hammer to its extreme point whence it falls; thus producing one blow at each revolution of the arbor.

——— The hammer face is of sufficient dimensions to cover

the four pistons (hereafter described) at their greatest distance from each other and and is kept in its proper position by a groove in either side of it filling on to the fillets on the sides of the uprights. The hammer rises and may be acted upon at its greatest deviation by a spiral or other spring under the top of the arms piece, the power of which added to its own gravity brings down the hammer with a smart blow on the heads of the pistons ———

——— The last is placed bottom upwards on the carriage and is sunk nearly to the sole; it has underneath it a crank or other contrivance attached to a screw which enters a nut in the instep of the last, by which means the shoe and last are confined to the socket fitted for their reception. The carriage travels in a right line on a railway or slides resting on four feet or guides fitted for the purpose: the carriage is forced forward by what I denominate intermitters which are wheels having on their peripheries spiral threads which mash into racks on the side of the carriage which during each revolution of the arbor is a part of the time in motion and a part of the time at rest. While the hammer is rising the carriage moves but remains at rest a sufficient time to receive the blow of the hammer and for the awls and pegdrivers to return to their resting places. In a shoe requiring two rows of pegs, four awls and four pegs are driven at each blow of the hammer; the pegs being always driven into the holes made at the last preceding blow of the hammer, two awls being set in each of the awl pistons and two pegdrivers in each of the drivers pistons all of which receive the same blow. A gauge is likewise fixed to each pistons which is forced into a groove or former which gives the pistons carriages the side movement necessary to make the pegging conform to the shape and size of the last ———

——— The feet or guides of the carriage are grooved to fit the rails on which they run. Both these and the rails may be of iron, steel or other metal so firmly bedded that they may receive the blow of the hammer without trembling ———

——— The external carriages in the ends of which are placed the pistons may be about seven inches high, fifteen inches long and one inch thick in glen-

and intermitters occupy their assigned stations: that is at each succeeding blow the peg driver occupies the exact station which the awl occupied at the blow preceding it and consequently cannot fail of depositing the peg which it takes in the hole made by the awl which was its leader ——————

——————The racks on the sides of the shoe carriage have teeth of that degree of fineness which is necessary for the kind of work to be performed. The teeth being set, at the same distance from each other as is intended for the pegs in the shoe. The intermitter being so made as to mash into them ——————The intermitters being cut with a gain equal to a two threaded screw on one half of its periphery and on a line with the motion of the wheel on the other half, or the threads may be entirely omitted on the other half of the carriage whilst the wheel in passing over the space without a thread will necessarily remain at rest. The spirally threaded part, will take each succeeding tooth of the rack in its turn in the same manner as if the thread were continued on that space in a right line with the movement of the wheel, or if a gain equal to a three threaded screw be cut the carriage will be left at rest two thirds of the time. The operation of the intermitters on the shoe carriage is to give it motion at intervals. By the straight thread or the vacant space on the intermitters the shoe carriage is left at rest, a sufficient time during each revolution for the pistons to receive the blow of the hammer and for them to return to their resting places before the moving power exerts its influence again. Bands and pulleys with band wheels and Cranks connected or cog wheels in their stead serve to communicate the motion in equal revolutions from the arbor to the intermitters ——————

——————The cases in which the slips of peg wood properly pointed lie, may be firmly fixed at an angle of about 45° to the carriages of the peg driver pistons with one end directly under the pistons and the peg drivers themselves moving in the ends of the cases. The slips of peg wood are put into the cases by hand and are forced against the end where the peg driver plies up and down by means of a weighted and pulley attached to a follower. In the end of the case where the peg driver plies at the distance of the width of one peg from the [illegible] in the bottom of the case is an edge or splitter about one eighth or [illegible]

chisels or cutters for the purpose of paring the edges of the sole by the descent of the piston, giving to them such a position as shall adapt them to this object. —

— I employ a paring wheel with revolving cutters for the purpose of completing the operation commenced by the cutters on the pistons. These cutters are to operate somewhat in the manner of those employed for cutting the wood in the machine for forming lasts. The shoe may either be held in the hand or fixed upon a block with guides during this operation. For the purpose of smoothing the edges I use a wheel covered with emery, pounded glass, or other suitable material made and revolving in the manner of the common emery wheel employed by cutlers and others. From this I take it to what I call a sand file or edgers wheel having a smooth metalic face and furnished near with its periphery with edges like those of the common sand file. The polishing the shoe is then effected by means of a wheel furnished with ags of hard wood or metal against which it is to be held and pressed —

— What I claim as my own invention in the within described apparatus is that arrangement thereof by means of the intermitter or a single intermitter or other analogous contrivance with the guides and other appendages by means of which the shoe carriage is caused to advance with the shoe thereon whilst the pistons carrying the awls and drivers receive by means of guides or formers a lateral motion following the shape of the sole of the shoe whether the motions be effected precisely in the way described or in any other producing a similar result. I claim also the arrangement of the parts of the machinery by which the pegs or nails are driven by one set of pistons in the holes made by the awls in the pistons by their preceding descent. I claim likewise the splitting of the peg from the end of a slip of pegwood or the cutting of the pegs or nails from a slip of metal and the instantaneous driving thereof into the proper places. I further claim the application of the paring apparatus upon the piston and also on the paring wheel and the method subsequently described of smoothing and polishing by means of revolving wheels

Witnesses
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Samuel Rotton

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