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NEW LASTING MACHINE.

It would be difficult to name an industry in which mechanical skill and invention have produced such marked effects as in the manufacture of shoes. The cutting of the uppers, soles, and heels, the treeing, pegging, stitching, finishing, and eyeletting, are all done by machinery, and many of the minor operations in the manufacture of shoes are accomplished by improved tools which greatly facilitate the work and cheapen the cost of manufacture. But hitherto lasting has been principally done by hand, making it a comparatively slow operation.

We give an engraving of a machine recently patented by Mr. S. B. Ellithorp, of Rochester, N. Y., for accomplishing this work with rapidity and uniformity. The machine is equally well adapted to boots and shoes, and it is so clearly shown in our engraving that any one familiar with boot and shoe machinery will be able to understand it without reference to the description.

The frame of the machine is made of the base and top pieces, connected by vertical iron rods at the corners. The plates, A, are suspended by connecting rods from levers, B, pivoted at the top of the frame, and the levers are connected with arms on the rockshafts, C, so that when the latter are partly rotated the plates will be raised or lowered more or less.

The plate, A, carries a number of adjustable hooks, E, provided with nippers or clamps, F, which grasp the edges of the uppers surrounding the lasts, G.

The machine shown in the engraving holds two lasts, and is capable of lasting two uppers simultaneously. In the present case the uppers are omitted in the first half of the apparatus to avoid confusion in referring to the different parts. Two levers, I, I, are provided for each last. They are pivoted to a standard in front, and are elongated at the opposite extremity, forming handles which are brought together and retained by a link after the operation of stretching the uppers has been performed.

The lasts are held down upon their seats by screws, K, passing down through nuts in the top of the frame and bearing upon the center of the lasts.

The standards which support the last seats are made adjustable, so that they may be raised or lowered for different sizes of shoes and for boots.

The devices which hold the last render it adjustable in every direction, so that a last of any size may be used in the machine. The hooks on which the nippers are hung are capable of being adjusted, and the screw that holds the last down may be adjusted so as to press upon any part of the last.

The shafts, C, are provided with hand wheels, J, and with levers, by which they may be turned so as to bring any desired amount of strain upon the leather.

To last a boot or shoe on this machine the upper leather that has been prepared for lasting is turned bottom up and the last inserted therein

bottom up, the last having an insole already tacked on the bottom. The last is then placed bottom up in the seat, so that the pin (Fig. 3) enters the corresponding hole in the last, the toe of the last resting in a curved seat, supported by the adjustable standard. The

plate, A, is then lowered to the full extent, and the clamps, F, are adjusted so as to grasp the upper leather all around the edge, first grasping at the center at the heel, then at the center at the toe, and then, at proper distances apart, all around the upper. The holding bolt is then forced down upon the last, holding the last firmly down on the seat. The plate, A, is then drawn up by turning the shaft, C, pulling up the clamps, E, and consequently the upper leather, closely to the last at every point alike. The last being firmly held down, all the surplus leather of the upper leather is then above the bottom of the last. The levers, I, are now closed, pressing the upper leather to the shape of the last all around the bottom about the insole.

A gathering cord is then placed about the upper leather and drawn tight. The cord is again pulled and secured, and the boot or shoe is then lasted ready for tacking, which may be done in the machine while the last rests on the seat on opening the levers; or the boot or shoe may be removed and then tacked.

It has been supposed by some that there were mechanical obstacles that rendered it impossible to last boots or shoes by machinery. Such obsta-

cles, if there were any, have been successfully overcome by this invention, by which boots or shoes of all grades of stock may be lasted in a manner far superior to hand work.

This machine is simple and easy to operate; a girl or boy can operate it and do better work than is usually done by hand.

To produce a handsome boot or shoe and a good fit it must be perfectly lasted; this every practical man in the trade admits; and it is equally true that not one pair in ten is properly lasted.

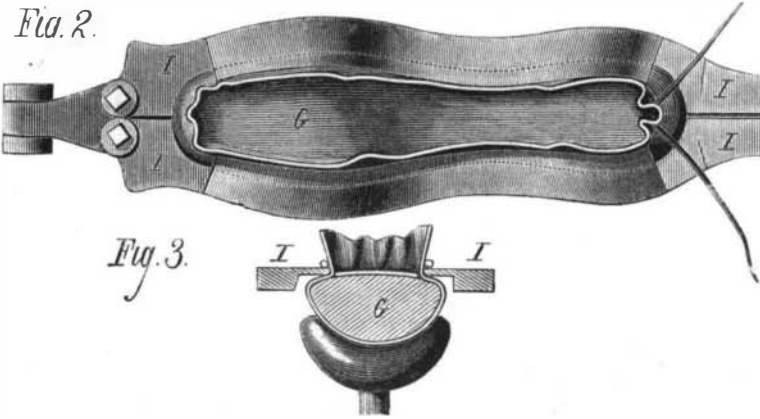
The inventor says that with this machine it is hardly possible to last a boot or shoe imperfectly. It will do perfect work with all kinds of stock, and it may be operated by hand or power.

Further information in regard to this useful invention may be obtained by addressing the inventor as above.

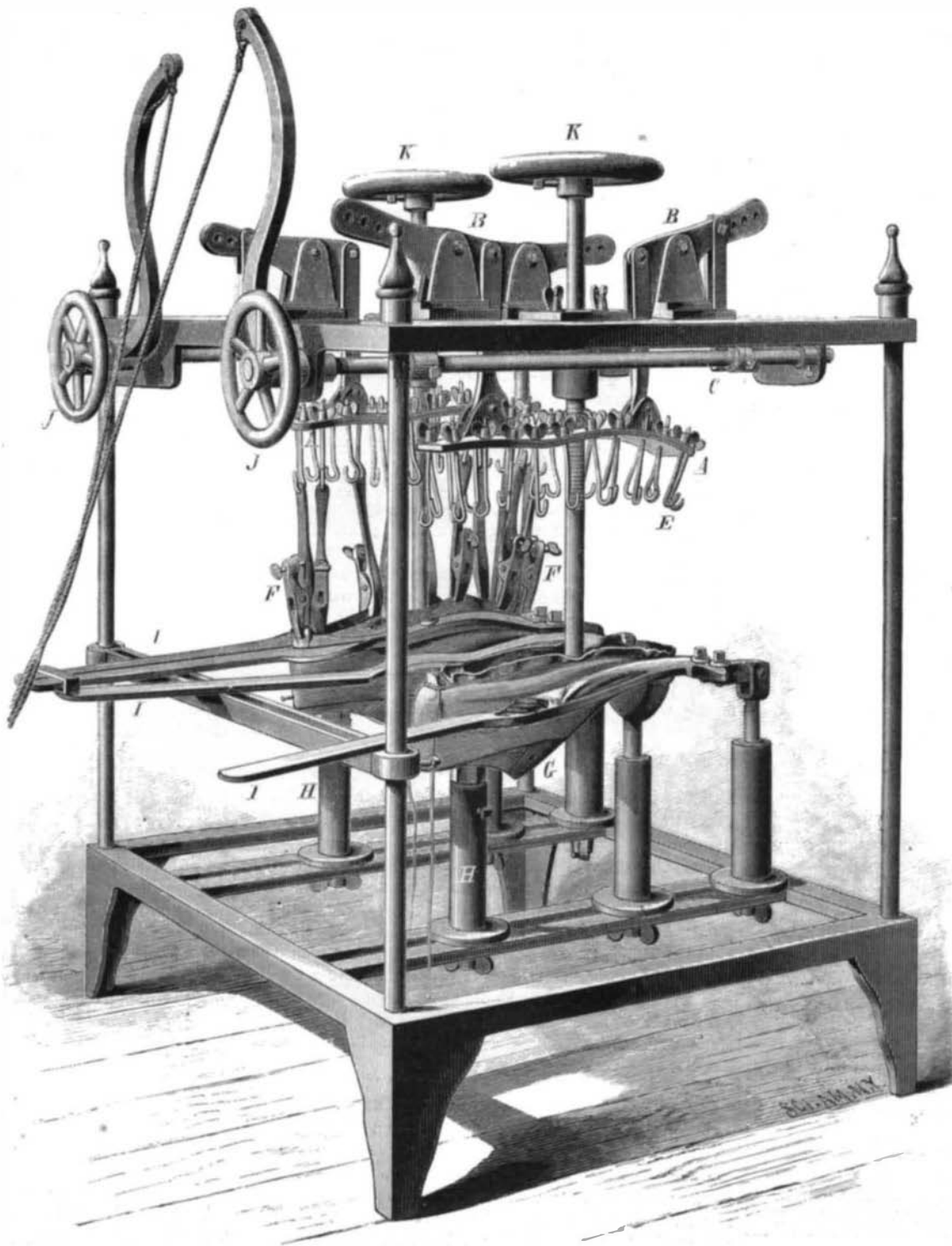
The Division of the Comet Doubted.

Owing to the persistent bad weather and the rapid retreat of the comet into space it is to be feared that the question of the comet's spontaneous division on the night of July 6, as reported by Professors Stone and Wilson, at Cincinnati, will not be satisfactorily settled. The astronomers of the observatory at Washington saw a great disturbance in the coma about the nucleus of the comet the same night, and a partial separation, which might appear as a complete division in the less powerful glass employed at Cincinnati. Other astronomers are confident that no division of the nucleus occurred.

Unfortunately, as already noticed, the atmosphere has since been very unfavorable for such observations, and the question threatens to go undecided until the comet comes back again—if it ever returns.



LASTING MACHINE—PLAN AND SECTION OF LAST.



ELLITHORP'S BOOT AND SHOE LASTING MACHINE.