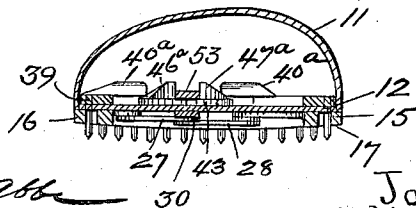
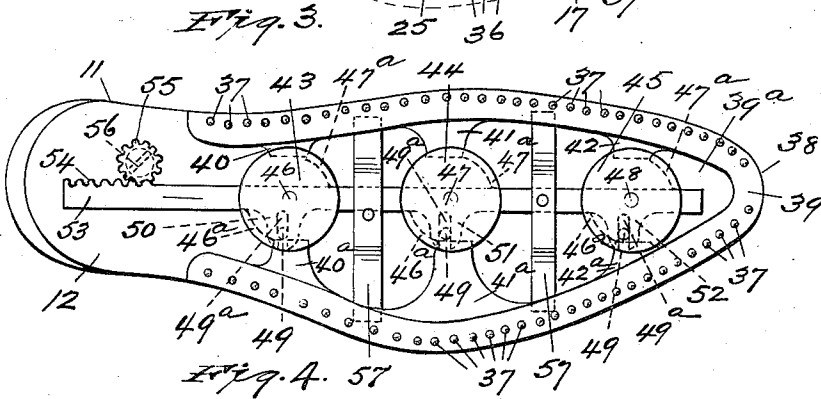
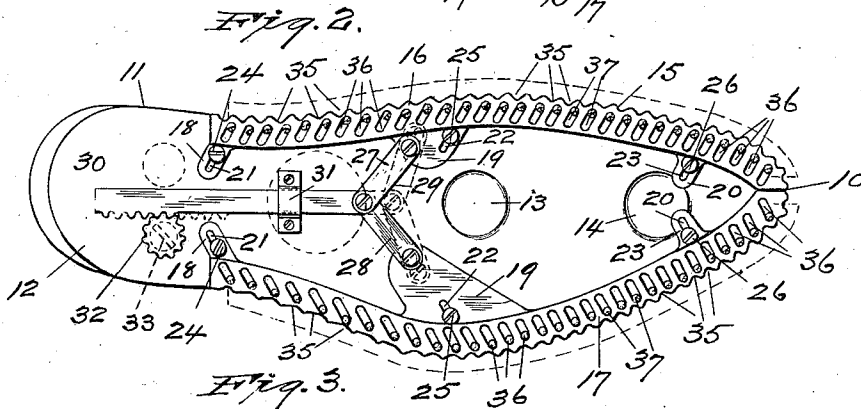
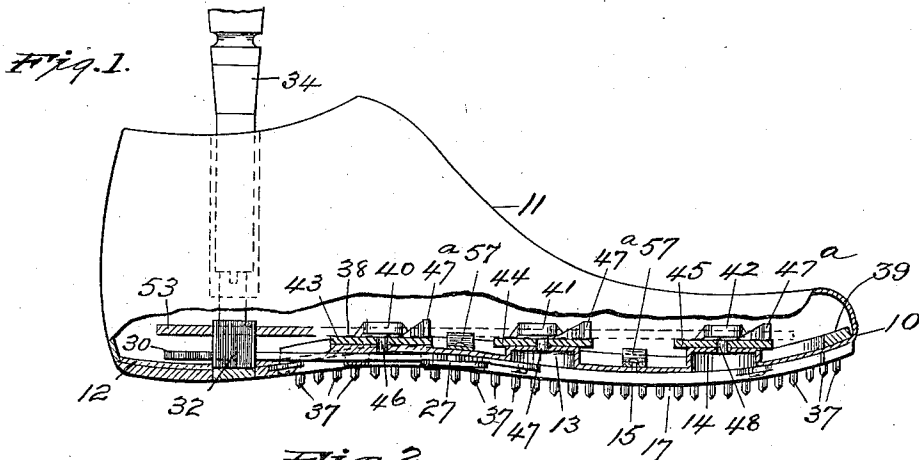


J. S. BUSKY, JR.
SHOE LAST.

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1,023,718.

Patented Apr. 16, 1912.



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JOHN S. BUSKY, JR., OF NEW YORK, N. Y.

SHOE-LAST.

1,023,718.

Specification of Letters Patent.

Patented Apr. 16, 1912.

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To all whom it may concern:

Be it known that I, JOHN S. BUSKY, JR., a citizen of the United States, and a resident of New York, county and State of New York, have invented a certain new and useful Improvement in Shoe-Lasts, of which the following is a full, clear, and exact specification.

This invention relates to a class of devices or shoe lasts adapted for use in making footwear.

My invention has for its object primarily to provide a shoe last or device designed to be employed for facilitating the making of shoes, boots, or other forms of footwear for persons and by the use of which persons afflicted with blindness may be instructed to make footwear with great efficiency; to provide a form of shoe last which will permit a welt and insole to be dispensed with in making a shoe or boot, or an insole may be used therein, if preferred; and to provide a shoe last which will permit the "upper" or vamp of a shoe to be shaped and stitched for proper lasting without the employment of nails or tacks as is incident to the methods in ordinary use.

Another object of the invention is to provide a device adapted to be adjusted by the use of a key for shaping the "upper" or vamp of a shoe in any preferred form after its parts have been stitched together upon the last; and another object of the invention is to provide a retaining device or means in which a plurality of pins are employed and adapted to coöperate with the adjusting device for holding the "upper" or vamp upon the last so as to permit it to be properly and conveniently stitched or fastened to an insole or otherwise.

A practical embodiment of the invention is represented in the accompanying drawing forming a part of this specification in which similar characters of reference indicate corresponding parts in all the views, the said invention being more fully described hereinafter and then pointed out in the appended claims.

In the drawing, Figure 1 is a side elevation, partly broken away and partly in section, of one form of shoe last embodying my invention. Fig. 2 is an inverted plan of the last showing the adjustable device applied thereto. Fig. 3 is an inverted plan of the

last with the adjustable device removed, and showing the holding means, and Fig. 4 is a transverse section through the last.

The device 10 has a last 11 adapted for use in making footwear, and said last may be of any preferred size or shape, or may be hollow or its lower portion only may be hollow, as desired. Fastened in any suitable manner within the last 11 is a supporting plate 12 which is curved to conform with the curvature of the bottom of the last 11, and upon said supporting plate is preferably provided one or more upwardly disposed extensions, as 13 and 14.

Upon the underside of the supporting plate 12 is provided an adjusting device 15 adapted for use in shaping the "upper" or vamp of a shoe in any preferred form after its edges have been stitched together or when said edges have been stitched to a welt, or an insole, or to the sole proper of the shoe. The device 15 consists of two adjusting shaping members or plates 16 and 17 which are adapted to be moved with relation to each other so as to expand or contract the "upper" or vamp, if desired, when held upon the last. The outer edge of each of the plates 16 and 17 is formed to comply with the exact shape of the shoe, and each of said plates is of a length to extend from the toe to the heel of the last. Upon the inner edge of each of the shaping plates 16 and 17 are a plurality of lugs 18, 19, 20, and in each of said lugs is an obliquely disposed slot 21, 22, 23, through which is disposed a screw or pin 24, 25, 26. The screws or pins 24, 25, 26 are of a size to permit the lugs 18, 19, 20 to be moved thereon whereby the shaping plates 16 and 17 may be directed to expanded or contracted positions. The lugs 19 are somewhat larger than the lugs 18 and 20 and to the lugs 19 are pivoted one end of arms 27 and 28 of toggle links 29. The opposite end of each of the arms 27 and 28 of the toggle links 29 is pivoted to the end of a rack 30 which is guided under a strap 31 fastened to the supporting plate 12. The rack 30 has one of its edges partly provided with teeth, and in mesh with said teeth is a small toothed wheel 32 which is rotatably held upon the supporting plate 12 and has a groove or key seat 33 in one of its faces for reception of a key 34, as shown in Fig. 1. The key 34 may be of any suit-

able shape, and is inserted through an opening in the last for engagement with the toothed wheel 32. By rotating the key 34 the toothed wheel 32 will be revolved and in turn the rack 30 will be directed forward or backward for moving the arms 27 and 28 of the toggle links 29 whereby the shaping members or plates 16 and 17 will be guided to expanded or contracted positions. The outer edge of each of the shaping plates 16 and 17 is provided with corrugations or substantially V-shaped notches 35 which serve as guides for permitting the "upper" or vamp to be accurately stitched to an outer sole of the shoe, if preferred. In each of the shaping plates 16 and 17 are provided at closely spaced intervals a plurality of obliquely disposed slots 36, and through each of said slots is disposed the sharpened free end of one of a plurality of vertically disposed pins 37 of a retaining device or means 38 which is adapted to cooperate with the adjusting device 15 for holding the "upper" or vamp upon the last so as to permit it to be properly and conveniently stitched, or fastened together, or attached to a welt, or insole.

The retaining device 38 has a plate 39 which is of a formation similar to the bottom of the part of the last between the toe and heel thereof and said plate has a cut-out center, as 39^a. The plate 39 carries the sharpened pins 37, and is adapted to be moved in a vertical direction so that said pins may be similarly guided through the slots 36 of the shaping plates 16 and 17. At spaced intervals upon one of the inner edges of the cut-out pin carrying plate 39 are a number of projections or lugs 40, 41, 42 and at like spaced intervals upon the opposed inner edge of said pin carrying plate are a number of similar projections or lugs 40^a, 41^a, 42^a, thus said lugs are arranged in pairs, as indicated. The free ends of all of the projections or lugs 40, 41, 42, and 40^a, 41^a, 42^a are curved or struck upwardly, and abutting against each pair of said curved lugs is a wheel 43, 44, 45. Each of the wheels 43, 44, 45 is rotatably held upon a pin 46, 47, 48, two of which are provided in the extensions 13 and 14 of the supporting plate 12 while the third pin is held in said supporting plate proper. The face of each of the wheels 43, 44, 45 is provided with two opposed cam-shaped edges, as 46^a and 47^a, which are adapted to contact with the opposed surface of each pair of the lugs of the carrying plate 39. Eccentrically held upon each of the cam-wheels 43, 44, 45 is a pin 49, and each of said pins is movably guided in a slot 49^a of spaced lugs 50, 51, 52 provided upon one edge of a rack bar 53. The rack bar 53 is adapted to be movably directed to and fro from the heel to the toe of the last for rotating the wheels 43, 44,

45 so as to guide the cam edges 46^a and 47^a of each of said wheels into engagement with the projections 40, 41, 42 of the carrying plates 39. One edge of a portion of the rack bar 53 at the heel of the last is provided with a number of teeth 54 and meshing with said teeth is a toothed wheel 55 which is rotatably held upon the supporting plate 12 and has a slot or seat 56 for reception of the key 34 which is adapted to operate the retaining device 38 as well as the adjusting device 15. As a means to provide for disposing the carrying plate 39 so that the sharpened points of the pins 37 thereof will normally protrude through the obliquely disposed slots 36 of the shaping plates 16 and 17, as shown in Fig. 1, one or more springs, as 57, are fastened upon the supporting plate 12, and each of said springs is curved so that the ends thereof are in movable contact with the upper surface of said carrying plate.

In using the device 10 for making a shoe, the "upper" or vamp is fitted over the last 11, and the edges of the vamp are guided over and under the shaping plates 16 and 17. The edges of the vamp are then fastened upon the pins 37, in order to be secured together by stitches or sewed to an insole, or welt. The vamp may then be formed into a suitable shape by the adjusting device 15, by the key 34 being used to rotate the toothed wheel 32 of said adjusting device for moving the rack 30 to direct the arms 27 and 28 of the toggle links 29 so as to move the shaping plates 16 and 17 into extended or contracted positions, as preferred, and the sole proper of the shoe is finally stitched to the vamp direct by using as guides the notches 35 of said shaping plates for accomplishing an even and regular form of stitching. When it is desired to release the connection of the vamp with the pins 37 the key 34 is then used for rotating the toothed wheel 55 by which the rack bar 53 will be moved, as above described, to revolve the wheels 43, 44, 45 so that the cam edges 46^a and 47^a thereof will be forced into engagement with the projections 40, 41, 42 of the carrying plate 39, and said carrying plate will be lifted against the tension of the springs 57 for guiding the pins 37 within the slots 36 of the shaping plates 16 and 17 whereby the engagement of said pins with the vamp will be released.

In the foregoing description I have embodied the preferred form of my invention, but I do not wish to be understood as limiting myself thereto, as I am aware that modifications may be made therein without departing from the principle or sacrificing any of the advantages of this invention, therefore I reserve to myself the right to make such changes as fairly fall within the scope thereof.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:—

1. The combination with a shoe last having a hollow lower portion, of a supporting plate secured in the lower portion of the last, two shaping plates, each movably held upon the underside of the supporting plate at the edge thereof and each of said shaping plates having a corrugated outer edge and a plurality of slots at spaced intervals therein, a rack, two arms, each having one of its ends pivotally held to one end of the rack and having its opposite end pivoted to one of said shaping plates, a toothed wheel meshing with the teeth of the rack and having a key seat therein for reception of a key for moving the rack whereby the shaping plates may be moved to expanded or contracted positions with relation to the lower edge of the last, and a retaining device coöperating with the shaping plates and adapted to hold the edge of the vamp of a shoe or the like when fitted upon the last.

2. The combination with a shoe last having a hollow lower portion, of a supporting plate secured in the lower portion of the last, two shaping plates, each movably held upon the underside of the supporting plate at the edge thereof, and each of said shaping plates having an outer corrugated edge and a plurality of obliquely disposed slots at spaced intervals therein, means provided upon the supporting plate and adapted to move the shaping plates to expanded or contracted positions with relation to the lower edge of the last, and a retaining device coöperating with the obliquely disposed slots of the shaping plates and adapted to hold the edge of the vamp of a shoe or the like when fitted upon the last.

3. The combination with a shoe last having a hollow lower portion, of a supporting plate secured in the lower portion of the last, said supporting plate having a plurality of upwardly disposed projections, two shaping plates, each movably held upon the underside of the supporting plate at the edge thereof and each of said shaping plates having an outer corrugated edge and a plurality of slots at spaced intervals therein, a rack adapted to move the shaping plates to expanded or contracted positions with relation to the lower edge of the last, means provided upon the supporting plate and adapted to move the rack for moving the shaping plates to expanded or contracted positions with relation to the lower edge of the last, and a retaining device provided upon the projections of the supporting plate and having a plurality of sharpened pins disposed in the slots of the shaping plates, said retaining device being adapted to hold the vamp of a shoe or the like when fitted upon the last.

4. The combination with a shoe last having a hollow lower portion, of a supporting plate secured in the lower portion of the last, said supporting plate having a plurality of upwardly disposed projections, two shaping plates, each movably held upon the underside of the supporting plate at the edge thereof and each of said shaping plates having an outer corrugated edge and a plurality of obliquely disposed slots at spaced intervals therein, means provided upon the supporting plate and adapted to move the shaping plates to expanded or contracted positions with relation to the lower edge of the last, and a retaining device provided upon the projections of the supporting plate and having a plurality of sharpened pins disposed in the slots of the shaping plates, said device being adapted to be operated so that its sharpened pins will hold the vamp of a shoe or the like when fitted upon the last.

5. The combination with a shoe last having a hollow lower portion, of a supporting plate secured in the lower portion of the last, two shaping plates, each movably held upon the underside of the supporting plate at the edge thereof, and each of said shaping plates having an outer corrugated edge and a plurality of slots at spaced intervals therein, two lugs, one provided at corresponding parts upon the inner edge of each of the shaping plates, a rack, two arms, each having one of its ends pivotally held to one end of the rack and having its opposite end pivoted to one of said lugs, a toothed wheel meshing with the teeth of the rack and having a key seat therein for reception of a key for moving the rack whereby the shaping plates may be moved to expanded or contracted positions with relation to the lower edge of the last, a carrying plate disposed above the supporting plate, a plurality of sharpened pins projecting from the underside of the carrying plate, each of said sharpened pins being disposed through one of the slots of the shaping plates, and means provided upon the supporting plate and adapted to force the carrying plate so that the sharpened ends of the pins thereof may be guided inwardly of the slots of the shaping plates.

6. The combination with a shoe last having a hollow lower portion, of a supporting plate secured in the lower portion of the last, two shaping plates, each movably held upon the underside of the supporting plate at the edge thereof, and each of said shaping plates having an outer corrugated edge and a plurality of slots at spaced intervals therein, means provided upon the supporting plate and adapted to move the shaping plates to expanded or contracted positions with relation to the lower edge of the last, a carrying plate disposed above the sup-

porting plate, a plurality of sharpened pins projecting from the underside of the carrying plate, each of said sharpened pins being disposed through one of the slots of the shaping plates, and means provided upon the supporting plate and adapted to force the carrying plate so that the sharpened ends of the pins thereof may be guided inwardly of the slots of the shaping plates.

7. The combination with a shoe last having a hollow lower portion, of a supporting plate secured in the lower portion of the last, said supporting plate having a plurality of upwardly disposed projections, two shaping plates, each movably held upon the underside of the supporting plate at the edge thereof, and each of said shaping plates having an outer corrugated edge and a plurality of obliquely disposed slots at spaced intervals therein, two lugs, one provided at corresponding parts upon the inner edge of each of the shaping plates, a rack, two arms, each having one of its ends pivotally held to one end of the rack and having its opposite end pivoted to one of said lugs, means provided upon the supporting plate and adapted to move the rack for moving the shaping plates to expanded or contracted positions with relation to the lower edge of the last, a carrying plate disposed above the supporting plate, a plurality of sharpened pins projecting from the underside of the carrying plate, each of said sharpened pins being disposed through one of the obliquely disposed slots of the shaping plates, and means provided upon the supporting plate and adapted to force the carrying plate so that the sharpened ends of the pins thereof may be guided inwardly of the slots of the shaping plates.

8. The combination with a shoe last having a hollow lower portion, of a supporting plate secured in the lower portion of the last, an adjusting device provided upon the underside of the supporting plate and adapted to shape the vamp of a shoe or the like when held upon the last, a carrying plate disposed above the supporting plate, a plurality of sharpened pins projecting from the underside of the carrying plate a plurality of curved upwardly disposed lugs arranged in pairs and provided upon opposed parts of the inner edge of the carrying plate, a plurality of cam-faced wheels, each pivoted to the supporting plate and adapted to engage the under surface of one pair of the curved lugs of the carrying plate, and means connected to each of the cam-faced wheels and adapted when operated to revolve said wheels whereby the sharpened ends of the pins of the carrying plate will cooperate with the adjusting device for holding the vamp of a shoe or the like when fitted upon the last.

9. The combination with a shoe last hav-

ing a hollow lower portion, of a supporting plate secured in the lower portion of the last, an adjusting device provided upon the underside of the supporting plate and adapted to shape the vamp of a shoe or the like when held upon the last, a carrying plate having a cut-out center and disposed above the supporting plate, the outer edge of said carrying plate being of substantially the shape of the edge of the bottom of the last between the heel and toe thereof, a plurality of sharpened pins projecting from the underside of the carrying plate, a plurality of curved upwardly disposed lugs arranged in pairs and provided upon opposed parts of the inner edge of the carrying plate, a plurality of cam-faced wheels, each pivoted to the supporting plate, and adapted to engage the under surface of one pair of the curved lugs of the carrying plate, a pin eccentrically held upon each of the cam-shaped wheels, a rack bar adapted to be moved to and from the heel to the toe of the last, said rack bar having a plurality of teeth upon one of its edges, a plurality of lugs extending from the rack bar, each of said lugs having a slot in which is guided the eccentrically held pin of each of the cam-faced wheels, a plurality of springs held upon the supporting plate, each having its free ends in movable contact with the carrying plate to force the carrying plate in a direction toward the adjusting device, and means provided upon the supporting plate for moving the rack bar to revolve the cam-faced wheels whereby the sharpened ends of the carrying plate will cooperate with the adjusting device for holding the vamp of a shoe upon the last.

10. The combination with a shoe last having a hollow lower portion, of a supporting plate secured in the lower portion of the last, an adjusting device provided upon the underside of the supporting plate and having a plurality of spaced slots, said adjusting device being adapted to shape the vamp of a shoe or the like when held upon the last, a carrying plate having a cut-out center and disposed above the supporting plate, the outer edge of said carrying plate being of substantially the shape of the edge of the bottom of the last between the heel and toe thereof, a plurality of sharpened pins projecting from the underside of the carrying plate, each of said sharpened pins being disposed in one of the slots of the shaping plates, a plurality of curved upwardly disposed lugs arranged in pairs and provided upon opposed parts of the inner edge of the carrying plate, a plurality of cam-faced wheels, each pivoted to the supporting plate, and adapted to engage the undersurface of one pair of the curved lugs of the carrying plate, and means connected to each of the cam-faced wheels and adapted when operated to revolve said

wheels whereby the sharpened ends of the pins will be guided outwardly of the slots of the adjusting device for holding the vamp of a shoe upon the last.

5 11. The combination with a hollow shoe last, of a supporting plate secured in the lower portion of the last, an adjusting device provided upon the underside of the supporting plate and having a plurality of spaced slots, said adjusting device being adapted to shape the vamp of a shoe or the like when held upon the last, a carrying plate having a cut-out center and disposed above the supporting plate, the outer edge of said carrying plate being of substantially the shape of the edge of the bottom of the last between the heel and toe thereof, a plurality of sharpened pins projecting from the underside of the carrying plate, each of said sharpened pins being disposed through one of the slots of the shaping plates, a plurality of curved upwardly disposed lugs arranged in pairs and provided upon opposed parts of the inner edges of the carrying plate, a plurality of cam-faced wheels, each pivoted to the supporting plate, and adapted to engage the undersurface of one pair of the curved lugs of the carrying plate, a pin eccentrically held upon each of the cam-faced wheels, a rack bar adapted to be moved to and from the heel to the toe of the last, said rack bar having a plurality of teeth upon one of its edges, a plurality of lugs extending from the rack bar, each of said lugs having a slot in which is guided the eccentrically held pin of each of the cam-faced wheels, a plurality of springs held upon the supporting plate, each having its free ends in movable contact with the carrying plate to force the carrying plate in a direction whereby the points of the pins thereof will be normally disposed within the slots of the adjusting device, a toothed wheel meshing with the teeth of the rack bar and having a key seat therein for reception of a key whereby the toothed wheel may be rotated for moving the rack bar to force the carrying plate against the tension of the springs for guiding the pointed ends of the pins thereof through the slots of said adjusting device.

12. The combination with a shoe last having a hollow lower portion, of a supporting plate secured in the lower portion of the last, said supporting plate having a plurality of upwardly disposed projections, two shaping plates, each movably held upon the underside of the supporting plate at the edge thereof, and each of said shaping plates having an outer corrugated edge and

a plurality of obliquely disposed slots at spaced intervals therein, two lugs, each provided at corresponding parts upon the inner edge of each of the shaping plates, a rack, two arms, each having one of its ends pivotally held to one end of the rack and having its opposite end pivoted to one of said lugs, a toothed wheel meshing with the teeth of the rack and having a key seat therein whereby the toothed wheel may be rotated by a suitable key for moving the rack so that the shaping plates may be moved to expanded or contracted positions with relation to the lower edge of the last, a carrying plate having a cut-out center and disposed above the supporting plate, the outer edge of said carrying plate being of substantially the shape of the edge of the bottom of the last between the heel and toe thereof, a plurality of sharpened pins projecting from the underside of the carrying plate, each of said sharpened pins being disposed through one of the obliquely disposed slots of the shaping plates, a plurality of curved upwardly disposed lugs arranged in pairs and provided upon opposed parts of the inner edge of the carrying plate, a plurality of cam-faced wheels, each pivoted to one of the projections of the supporting plate, and adapted to engage the undersurface of one pair of the curved lugs of the carrying plate, a pin eccentrically held upon each of the cam-faced wheels, a rack bar adapted to be moved to and from the heel to the toe of the last, said rack bar having a plurality of teeth upon one of its edges, a plurality of lugs extending from the rack bar, each of said lugs having a slot in which is guided the eccentrically held pin of each of the cam-faced wheels, a plurality of springs held upon the supporting plate, each having its free ends in movable contact with the carrying plate to force the carrying plate in a direction whereby the points of the pins thereof will be normally disposed within the slots of the shaping plates, a toothed wheel meshing with the teeth of the rack bar and having a key seat therein whereby the toothed wheel may be rotated by a key for moving the rack bar to force the carrying plate against the tension of the springs to guide the pointed ends of the pins thereof through the slots of said shaping plates.

This specification signed and witnessed this twenty-first day of July A. D. 1911.

JOHN S. BUSKY, JR.

Witnesses:

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