

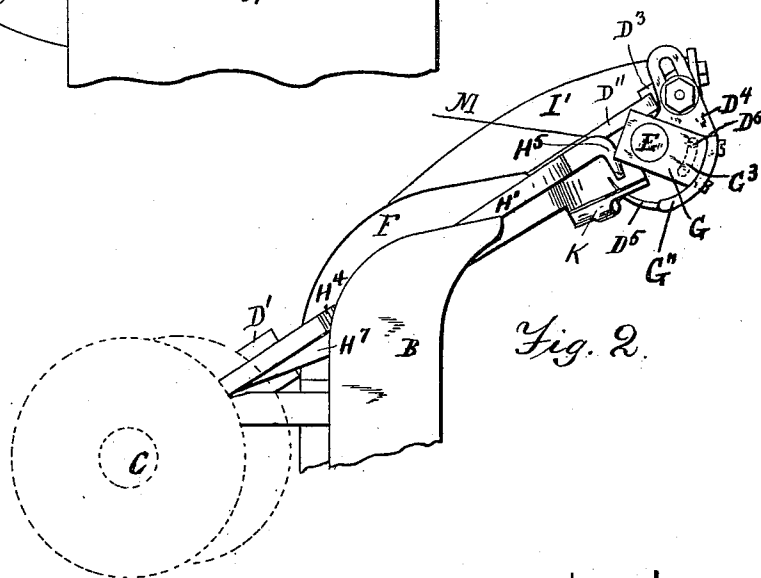
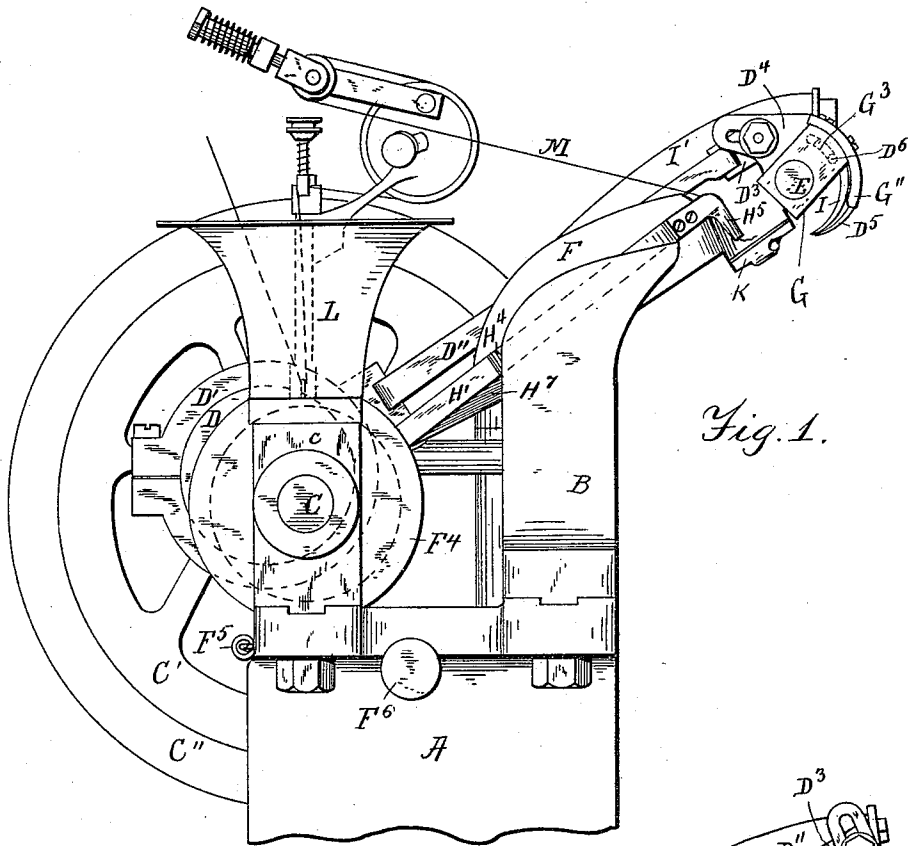
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W. Y. OBER.
SEWING MACHINE.

No. 471,017.

Patented Mar. 15, 1892.



WITNESSES

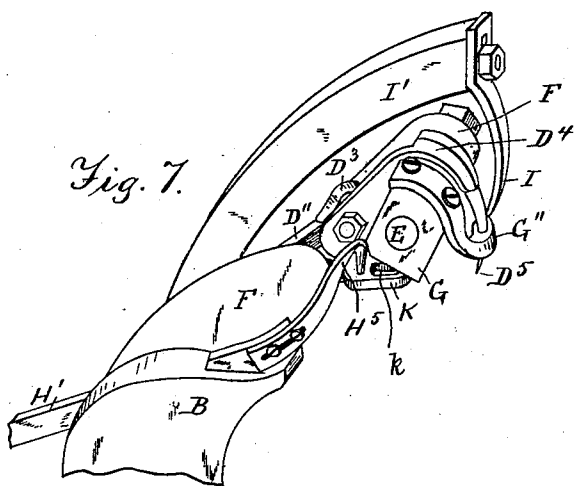
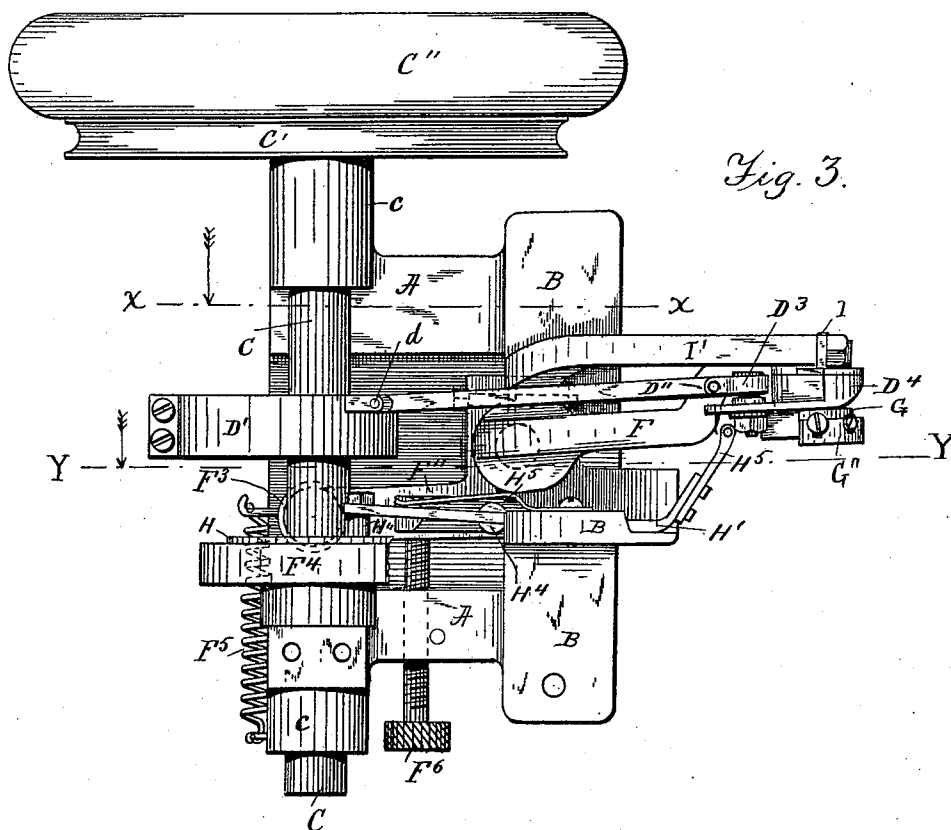
Alice A. Perkins.
Margaret G. Marshall.

INVENTOR
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by Alban Andrieu
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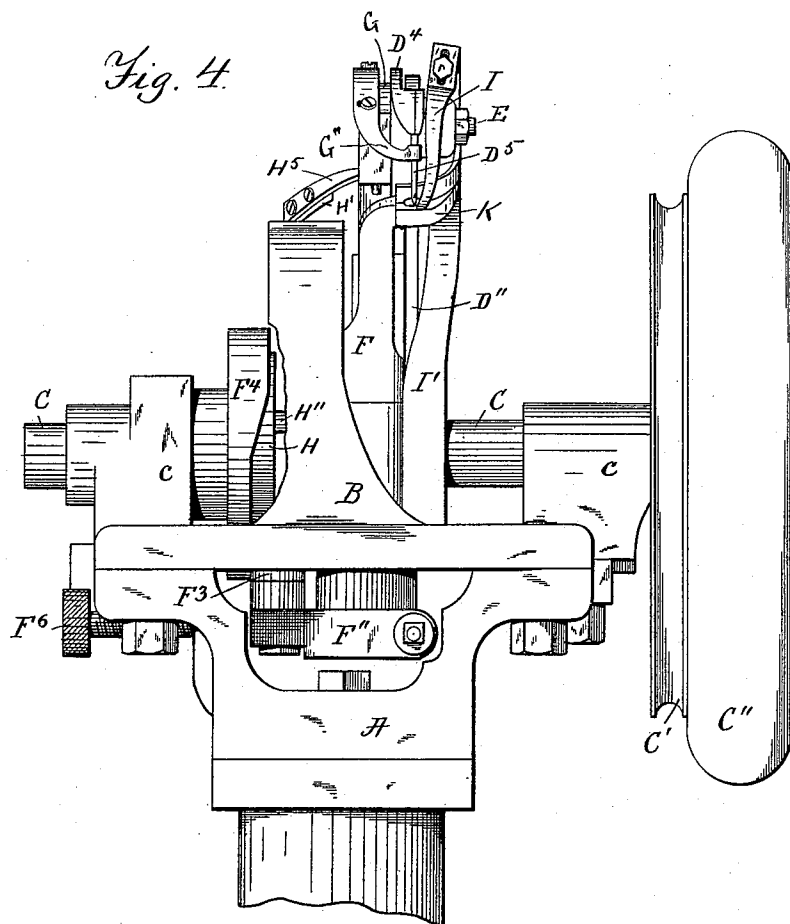
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WITNESSES

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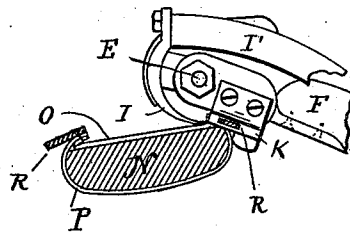
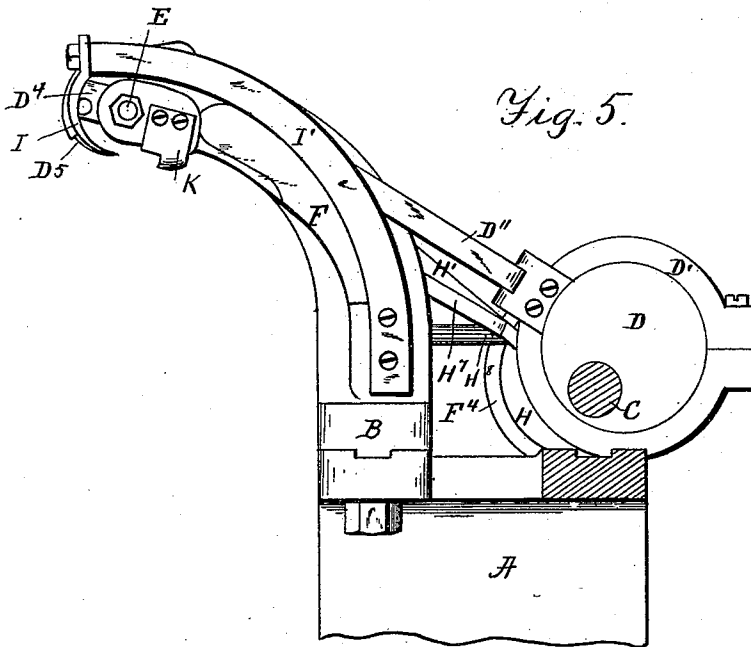
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W. Y. OBER.
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WITNESSES

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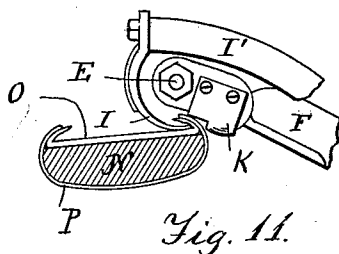
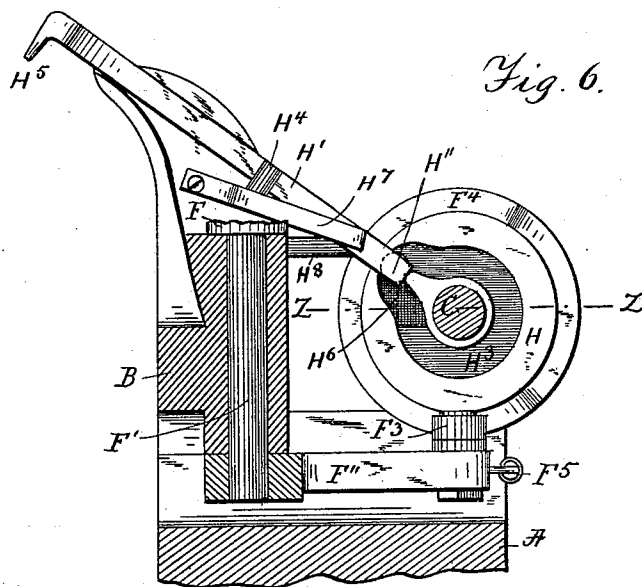
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W. Y. OBER.
SEWING MACHINE.

No. 471,017.

Patented Mar. 15. 1892.



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(No Model.)

6 Sheets—Sheet 6.

W. Y. OBER.
SEWING MACHINE.

No. 471,017.

Patented Mar. 15, 1892.

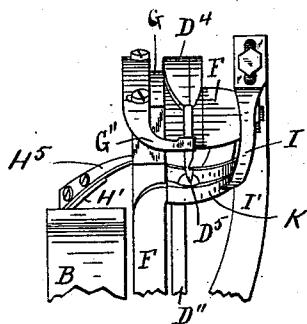


Fig. 8.

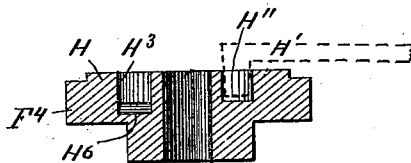


Fig. 9.

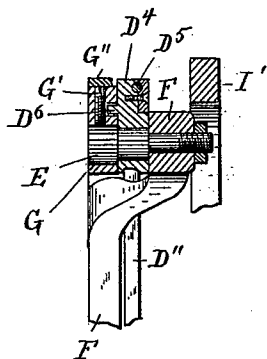


Fig. 10.

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UNITED STATES PATENT OFFICE.

WILLIAM Y. OBER, OF LYNN, MASSACHUSETTS, ASSIGNOR TO THE BOSTON WELT MACHINE COMPANY, OF PORTLAND, MAINE.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 471,017, dated March 15, 1892.

Application filed July 13, 1891. Serial No. 399,307. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM Y. OBER, a citizen of the United States, and a resident of Lynn, in the county of Essex and State of Massachusetts, have invented new and useful Improvements in Welt-Sewing Machines, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to improvements in welt-sewing machines; and it is carried out as follows, reference being had to the accompanying drawings, wherein—

Figure 1 represents a side elevation of the complete machine, showing the needle and thread-guide in position during the first part of the stroke. Fig. 2 represents a partial side elevation showing the needle and thread-guide in position immediately following the looping or carrying of the thread through the hook-needle. Fig. 3 represents a plan of the machine with the parts in the same position as in Fig. 1, with the waxing device removed. Fig. 4 represents a front elevation of the machine, showing the parts in the same position as in Fig. 1. Fig. 5 represents a vertical section on the line X X, shown in Fig. 3. Fig. 6 represents a vertical section on the line Y Y, shown in Fig. 3. Fig. 7 represents a perspective view of the head, showing the feed mechanism in an opposite position to that shown in Fig. 3. Fig. 8 represents a detail front elevation of the head, showing the needle in its extreme left position. Fig. 9 represents a cross-section on the line Z Z in Fig. 6, showing the cam for operating the thread-guide and feed of the needle. Fig. 10 represents a detail sectional view of the needle and cast-off blocks. Fig. 11 is a side view of the upper end of the head of the machine, showing the channeled insole as being sewed to the shoe-upper without a welt; and Fig. 12 represents a similar view showing a welt-guide for sewing a welt to the upper and channeled insole.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

In carrying out this invention I make use of the following essential parts, namely: first, an open-eyed curved needle having at its extremity a sharp-pointed end that serves as an

awl for the purpose of penetrating the work and carrying the thread through it during the operation of sewing, the work being fed by the reciprocating movement of this needle, to which is also imparted a rocking movement for the purpose of penetrating the work and carrying the thread through the work in forming the loops and stitches; second, a cast-off having a perforation through which the needle passes, said cast-off being secured to a friction-block mounted upon the same spindle on which the needle-carrier is oscillated, and the said cast-off is operated by a projection on the needle-carrier working in a slot in the cast-off block; third, a thread-guide having a lengthwise movement imparted to it by a grooved cam on the driving-shaft and a side motion imparted to it by the same cam and a spring; fourth, a stationary curved channel-guide adapted to be inserted in the channel of the insole during the operation of the machine, and, fifth, a laterally-movable work-support, against which the shoe is held and guided by the operator during the process of sewing the upper to the insole or the welt to the same.

The invention consists in the features of construction and the combination or arrangement of devices hereinafter described and claimed.

A represents the upper portion of the standard or post to which the head B is secured, Figs. 1, 2, 3, 4, 5, and 6.

c c are bearings secured to the standard A, in which the driving-shaft C is journaled. C' is a cord or belt pulley secured to the shaft C, by means of which a rotary motion is imparted to said shaft from a belt or cord and driving-pulley, as usual.

C'' is a balance-wheel secured to the end of the shaft C.

The mechanism for imparting an oscillating movement to the needle is constructed as follows: On the driving-shaft C is secured an eccentric block D, surrounded by a strap or ring D', to which is pivoted at d the link D'', the upper end of which is pivoted to a block D³, which is adjustably connected to the needle-carrier D⁴, the latter being journaled on a pin or bolt E, secured to the upper end of

the feed-carrying arm F. D⁵ is the curved open-eyed needle secured in a suitable manner to the said needle-carrier.

The mechanism for imparting a feed motion to the needle is constructed as follows: The needle-carrying arm F is provided at its lower end with a vertical cylindrical spindle or shank F', journaled in a bearing in the head B, as shown in Fig. 6, and to the lower end of the spindle or shank is secured a rearwardly-projecting lever F'', having a pin or pin and roll F³, which is actuated in one direction by a face-cam F⁴, secured to the shaft C, as shown in Figs. 1, 3, 4, and 6, and in an opposite direction by means of a spring F⁵, one end of which is attached to the lever F'' and the other end to a stationary portion of the machine, as shown in Figs. 1, 3, and 6. The throw of the lever F is regulated by means of an adjusting-screw F⁶, screwed through the standard A and having its inner end adapted to serve as a stop against the lever F'', as shown in Fig. 3, and by this means the desired amount of feed of the needle is regulated.

The mechanism for operating the cast-off from the needle-carrier is constructed as follows: On the same pivot-pin or bolt E on which the needle-carrier is journaled is loosely mounted the cast-off block G, which is held in frictional contact with the pivot-pin or bolt by means of a set-screw G', screwed through the block G and having its inner end held in frictional contact with the pin or bolt E, as shown in Fig. 10.

G'' is the cast-off, through which the needle D⁵ passes, said cast-off being secured in a suitable manner to the cast-off block G. On the side of the needle-carrier D⁴ is a lateral pin or projection D⁶, working in a segmental or curved slot G³ in the side of the cast-off block G, as shown in Figs. 1, 2, and 10, and by this arrangement an intermittent rocking movement is imparted to the cast-off by the direct action of the needle-carrier, thereby materially simplifying the operative mechanism.

The mechanism for operating the thread-guide is constructed as follows: On the shaft C is secured a grooved cam H, by means of which a lengthwise movement is imparted to the thread-guide lever H', said lever having at its lower end a side projection or pin and roll H'', projecting into the groove H³ in the cam H, as shown in Figs. 6 and 9. The lever H' is guided in a forked bearing H⁴, secured to the head of the machine, as shown in Figs. 3 and 6.

H⁵ is the perforated thread-guide secured in a suitable manner to the upper end of the lever H', as shown in Figs. 1, 2, 3, 4, 6, 7, and 8. The lateral or side motion of the thread-guide is imparted to it by a depression H⁶ in the bottom of the cam-groove H³ and a spring H⁷, pressing against the lower portion of the thread-guide lever H', as shown in Figs. 3 and 6. H⁸ is a stationary support for the lower end of the lever H'.

I is the stationary channel-guide, preferably secured in an adjustable manner to the upper end of an arm I', secured to or forming a part of the head of the machine.

K is the work-support, secured in a suitable manner to the upper end of the needle-carrying arm F and moving with the latter.

k in Fig. 7 is a perforation in the work-support K, through which the hooked end of the needle passes while receiving the thread from the thread-guide, which passes around the needle and lays the thread in the hook of the needle for the formation of a loop, which is drawn through said perforated work-support and the work held against it during the operation of the machine.

In Fig. 1, L is the wax-pot, as usual, through which the thread M is guided on its way to the thread-guide. In connection with the machine any well-known tension and take-up device may be used without departing from the essence of my invention.

In Figs. 11 and 12, N represents the wooden last, O the channeled insole, and P the upper lasted upon the last, as usual.

In Fig. 12 the work-support K has a lateral perforation adapted to receive and guide the welt R while being stitched on, as is usual in devices of this kind.

The operation of the machine is as follows: For welt-sewing the welt is placed in its guide and the lasted shoe, having the channeled insole, as described, is held by the operator in position so that the shoe-upper rests against the work-support, Fig. 12, and the bottom of the channel in the insole against the lower end of the stationary presser-foot or channel-guide, after which the machine is set in operation, causing a single chain-stitch to be made through the bottom of the channel of the insole, the upper, and the welt, the chain of the stitch being laid in the bottom of the channel, and during such operation the needle enters and perforates the insole, upper, and welt, then feeds by moving sideways, and during such feed motion of the needle the thread-guide lays a loop in the barb of the needle, after which the needle draws the loop of the thread through the work and returns with said loop to its original position, and so on during the operation of sewing the welt to the upper and insole. The cast-off co-operates with the needle to form a chain-stitch in the ordinary manner. When it is desired to use the machine for sewing turned shoes, in which case no welt is used, the operation is similar, but the welt-guide and welt are omitted, as shown in Fig. 11.

What I wish to secure by Letters Patent and claim is—

1. The combination of a laterally-movable arm having a pin or bolt, a needle-carrier and a cast-off, both mounted on the pin or bolt and having a pin-and-slot connection at their inner sides, so that the needle-carrier operates directly on the cast-off to oscillate the same, an adjustable friction device connecting

the cast-off by frictional contact with the said pin or bolt, mechanism for moving the said arm laterally, and means for oscillating the needle-carrier, substantially as described.

5 2. In a welt-sewing machine, the combination, with a head, of a movable arm F, having a pin or bolt E, a needle-carrier and a cast-off oscillating on the pin or bolt and having a pin-and-slot connection between their inner sides, 15
o a set-screw passing through a part of the cast-off for holding the latter in frictional contact

with the pin or bolt, and means for oscillating the needle-carrier, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of 15
two subscribing witnesses, on this 5th day of June, A. D. 1891.

WILLIAM Y. OBER.

Witnesses:

ALBAN ANDRÉN,

CHARLES B. BROOKS.