(No Model.) 4 Sheets—Sheet 1.

L. BOLLMANN.

MACHINE FOR SEWING BAGS.

No. 380,981. Patented Apr. 10, 1888.

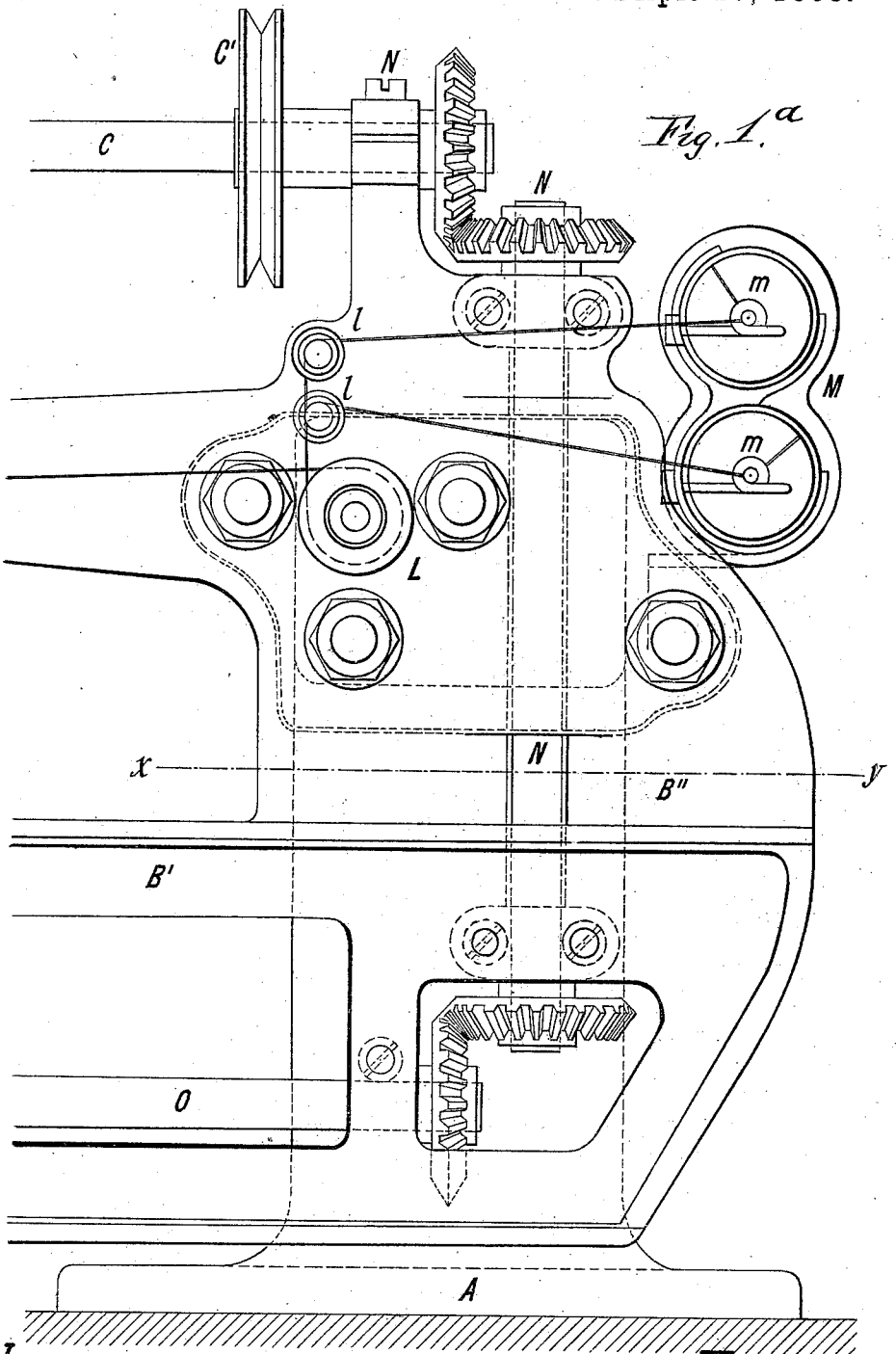


Fig. 1a

WITNESSES.
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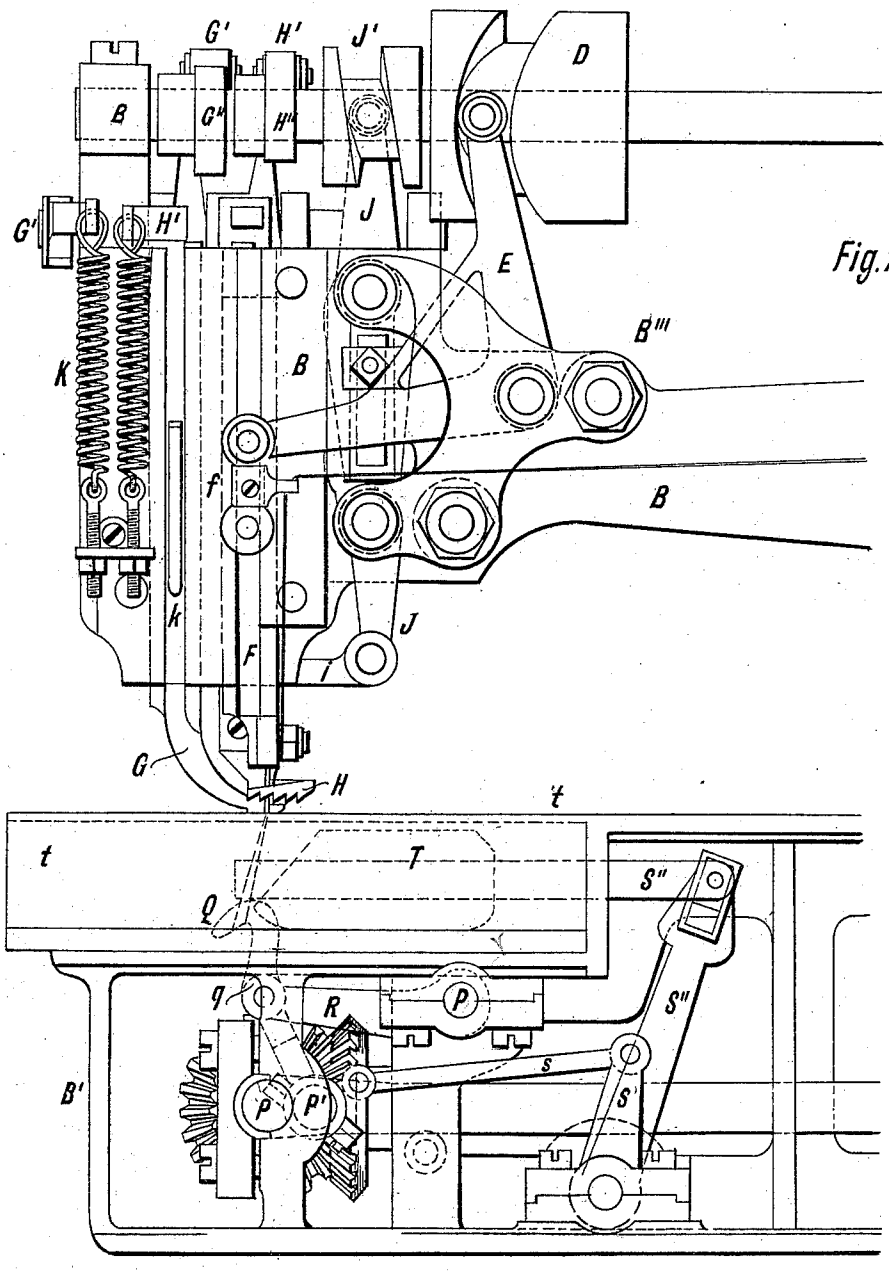


Fig. 1.

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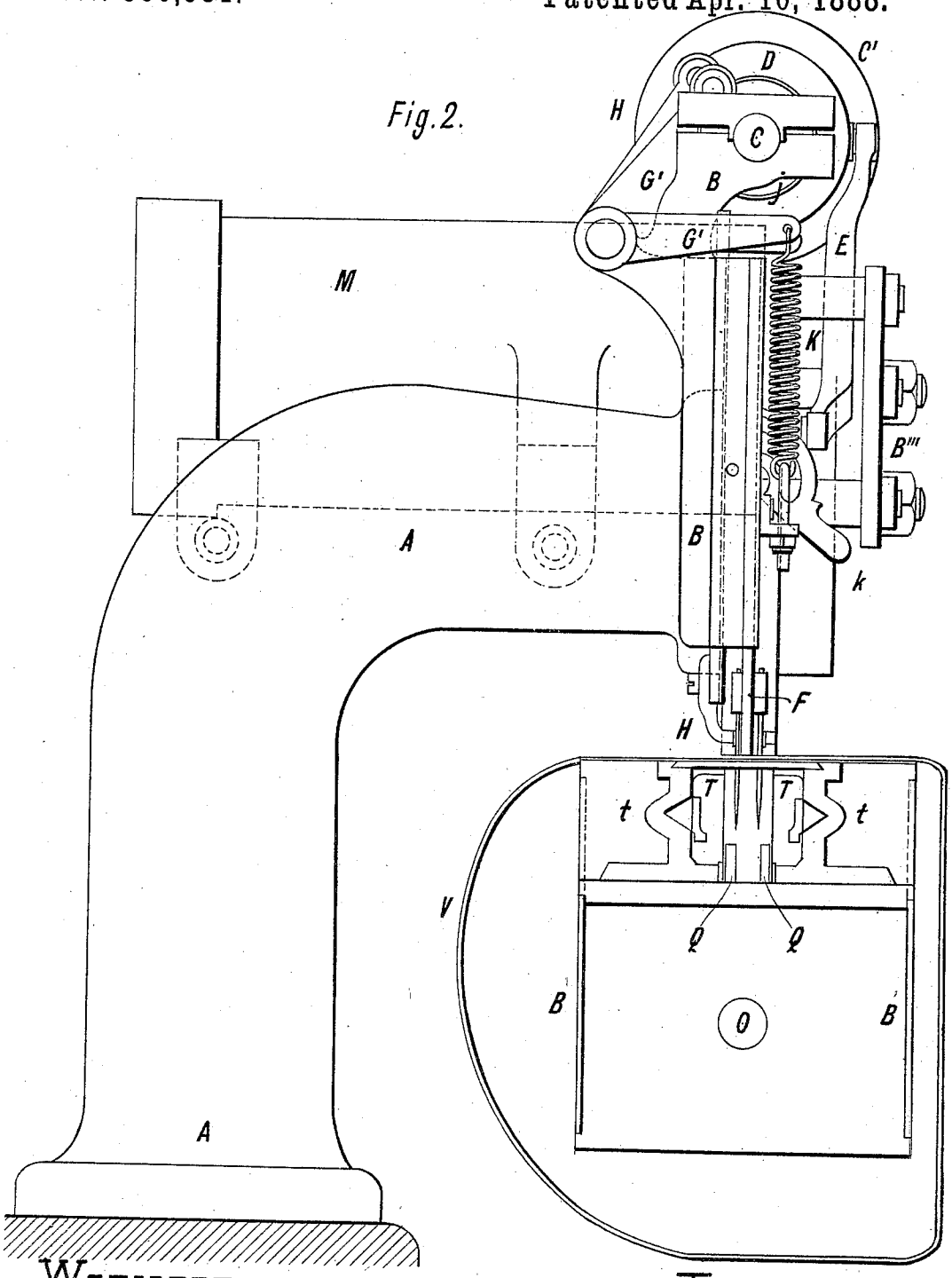
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L. BOLLMANN.

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Fig. 2.



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L. BOLLMANN.

MACHINE FOR SEWING BAGS.

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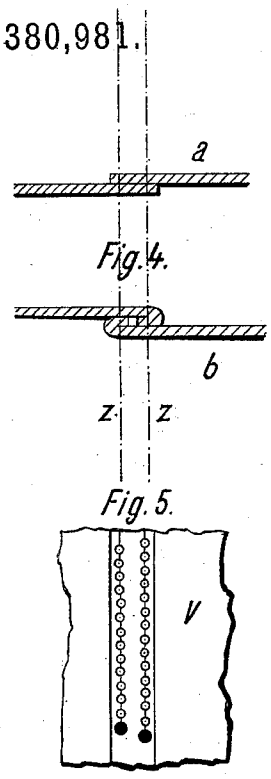


Fig. 4.

Fig. 5.

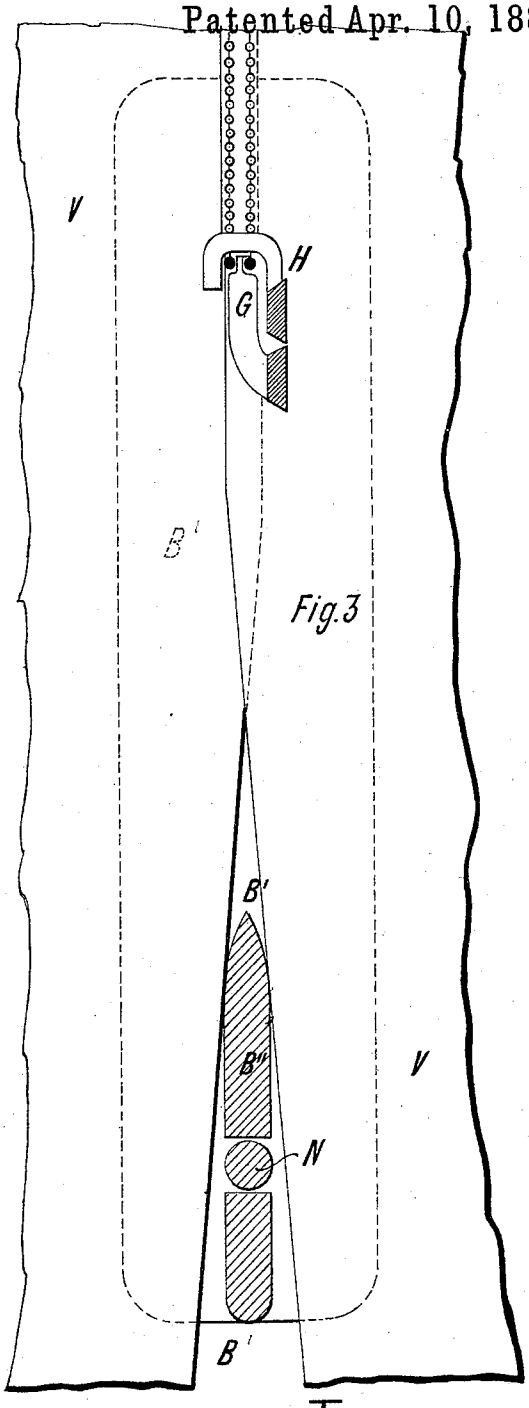


Fig. 3

WITNESSES.

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A. B. Blackwood.

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Attys

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UNITED STATES PATENT OFFICE.

LOUIS BOLLMANN, OF VIENNA, AUSTRIA-HUNGARY.

MACHINE FOR SEWING BAGS.

SPECIFICATION forming part of Letters Patent No. 380,981, dated April 10, 1888.

Application filed August 30, 1886. Serial No. 212,206. (No model.)

To all whom it may concern:

Be it known that I, LOUIS BOLLMANN, a citizen of the United States, and a resident of the city of Vienna, in the Empire of Austria-Hungary, have invented certain new and useful Improvements in the Method of and Machines for Sewing Bags, Sails, and the Like, of which the following is a specification.

My invention relates to improvements in the method of and machines for sewing bags, sails, and the like by stitching the edges or selvages of a web flat together with two rows of stitches at once; and they consist:

First. In a peculiar construction of the table on which the material to be sewed is led toward the needles, so that the said table is freely suspended (like a stretched arm) on a narrow connecting-piece reaching out from its upper surface, the two edges or selvages being led on this table lengthwise in such a manner that they pass first one on each side of the narrow connecting-piece, and then in passing toward the needles on the farther end of the table are gradually laid one over the other, the two needles entering closely to edges or selvages of the web, whereby a flat double seam is formed. The two selvages of an entire web can thus be sewed together to form a tube as long as the web, which then can be cut into proper lengths to form the sacks by sewing the bottom separately; or the material may also be previously cut into lengths and the sacks formed by sewing the sides and bottom in one operation. If sails or similar large articles are to be sewed in the middle by such flat double seams, it is by this method of leading the material toward the needles not necessary to use a very long needle-arm, as in other machines, because the one side of the material can pass freely below the suspended table, so that therefore a proportionately very short needle-arm can be used for such sewing.

Second. In a certain mechanism placed inside or below the sewing-table, consisting of two shuttles, in combination with two hooks, as will be described.

In the annexed drawings, Figure 1ª is a side view of the right, and Fig. 1ᵇ of the left, end of the machine. Fig. 2 is a front view from left to right in Fig. 1ª. Fig. 3 is a plan view of the material to be sewed, with the table below it and the connecting-rod B″, on which the table is suspended, cut through the line *x y*, Fig. 1ª, to show its section and the position of the shaft N. The other two figures serve to explain the seam.

A is the standard carrying the entire machine. It is fastened on an under frame or table, (not shown,) and on its overhanging head is fastened the needle-arm B, which carries the mechanism for the motion of the needles and the feeding apparatus for transporting the cloth toward the needles.

B′ is the sewing-table on which the cloth lies. It is cast to the needle-arm B, or it may be secured to the latter. The piece B″, which connects the table to the arm, is very narrow, as is shown in the section Fig. 3, and by it the table hangs freely forward, so that the material to be sewed can be laid around it in the form of a tube, the open and not yet sewed edges or selvages passing one on each side of B″. As they pass then farther on toward the needles on the farther end of the table, they are gradually laid one over the other, as is illustrated in Fig. 3, which may be done by hand or by proper self-acting guides.

The driving-shaft C is driven by a pulley, C′, and has on its right end a bevel-wheel which meshes with another bevel-wheel fastened to the shaft N, which passes down to table B′, where it drives, by means of two pairs of bevel-wheels, the shafts O and P.

The two needles are fastened to the lower end of the needle-bar F, that slides up and down in proper guides formed in the arm B. This motion is produced by the cam D on shaft C, in combination with the crank-lever E and the joint-link *f*.

The feeding of the cloth is accomplished by means of the cloth-presser H and G, of which H has four motions—that is, up and down and forward and backward—while G has no motion, but is pressing downward to hold the cloth during the time while H is raised and is lying loosely on the cloth while the latter is being moved forward by the presser H. These actions and motions are produced by the cam J′ and eccentrics G‴ and H‴, which operate on the presser-bars by means of the two crank-levers G′ and H′, the double lever J, and the spiral springs K. The lever J is so arranged

that the length of the stitches can be regulated. The lifter K serves to raise the pressers H and G when the cloth is to be inserted or removed. The two needle-threads are wound into bobbins which are placed into the double case M. They are then passed between friction-plates *l l* and around the tension-disks L and through proper eye-pieces toward the sewing-needles.

I may here mention that I do not consider these mechanisms for the needle and feed motions as new, and these may be arranged and constructed in any other way.

The short shaft P is a crank-shaft, on the crank of which bears the lower end of the piece *q*, to which are fastened the two hooks Q Q. It is jointed to the lever R, that swings in bearings *r*. Now, if by the motion of the crank *p* the lower bearing, *q*, moves in a circle, the arm R (which forms a movable fulcrum for *q*) must move up and down, while the hooks Q Q will move in an ellipse. These hooks are so situated that they pass closely on the outside of the two needles, Fig. 2, when they occupy their highest position.

t t are two guides fastened to the front part of the table and covered by a needle-plate. T T are two flat shuttles moving in the guides *t t* and driven by a common shuttle-carrier that is connected by a link-bar, S‴, to the lever S″, which is fastened with the arm S′ to the same shaft. The latter arm, S′, is again connected by a rod, S, with an eye forming part of the piece *q*, so that S′ S″ and the shuttles T T are driven by the motion of the crank *p*′. The shuttle-carrier is only partly seen in Fig. 2. It slides in notches cut lengthwise in the sides of the guides *t t*. The shuttles are filled with flat oval bobbins, from the center of which the thread is passing out and toward the seams.

The relative motions and actions of the parts are as follows: The needles having entered the cloth, loops are formed on them when they commence to move upward, the same as in most sewing-machines. These loops are seized by the hooks Q Q, (which are at that moment in their highest position and moving to the left,) and then expanded during the downward motion of the hooks so far that the shuttles T T, which are then just commencing to move, will enter and pass freely through. When the shuttles have moved fully to the left, the hooks Q Q have moved considerably to the right, and also will be in an oblique position, with their points upward, so that the loops can slip freely off from the hooks and shuttles, after which they are fully drawn in by means of proper thread-regulating arrangements situated above the needles, or are left below until pulled up by the expansion of the loops for the next stitches, which latter method I prefer for sacks.

The advantages of this construction and combination of the double hooks and shuttles are, first, very short needles; second, large shuttles; third, a very short crank-motion for the shuttles; fourth, the same for the needles; fifth, a favorable method of expanding the loops downward, whereby the needles require no stop-motion while the shuttles pass through, and, sixth, very high speed and quiet motion.

Fig. 4 shows the positions of the double-seamed edges of the cloth in section. If these are selvages, then they are simply laid one over the other and the stitches made in the two lines *z z* closely to the edges, as shown in Fig. 4ª; but if those edges are cut, then they are previously turned over more or less, as shown in Fig. 4ᵇ, by means of hemmers or guiding apparatus. (Not shown in the figures.)

The needles may either be placed relatively to each other, so that they enter the cloth in a line at right angles to the direction of stitches, as shown in Fig. 3, or they may be set in an oblique position to that line, so that the stitches of both rows alternate, as shown in Fig. 5, whereby more of the threads of the cloth are seized and bound by the seams, which is of importance for sacks, especially if the edges are cut.

The motion of the shuttles T T may also be a rotating one, either continuously or backward and forward, the hooks Q Q transferring the loops to the shuttle after expansion, as described.

The transfer of the motion from the outside to the inside of the table may be accomplished by a chain or other devices instead of the shaft N.

It is obvious that the mechanism for the needle-motion and the feeding apparatus may be others than those herein described, and I do not claim these.

I claim—

In a machine for sewing bags, tubes, or webs, the combination, with suitable stitching and feeding mechanism, of a sewing-table, B′, consisting of an elongated narrow structure secured to and suspended from the needle arm or head by means of a web-shaped vertical connection, B″, located on a line with the needles, substantially as shown and described.

In testimony whereof I have affixed my signature in presence of two witnesses.

LOUIS BOLLMANN.

Witnesses:

C. O. PAGET,

E. G. F. MOELLER.