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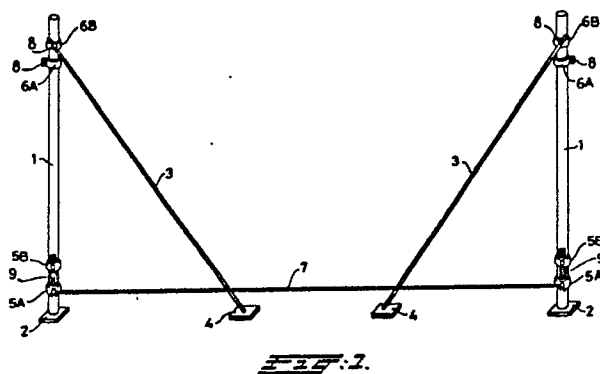
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54 **A method and an assembly for providing a guide wire along a wall to be built.**

57 A method and an assembly for arranging a guide wire (7) along a wall by means of vertical uprights (1). On each upright (1), two sliding pieces (5A, 5B) fastened thereon by means of a clamp, the guide wire (9) being tied to one of the sliding pieces (5A) of each upright (1), the other sliding pieces (5B) of these uprights (1) being connected with the associated first sliding piece (5A), by means of a distance piece (9), to be adjusted to a length corresponding with the thickness of a brick layer; after laying the first brick layer, the first sliding pieces (5A) are shifted against the associated second sliding pieces (5B) and are fastened again, after which the second sliding pieces (5B) are shifted again by a distance corresponding with the adjusted length of the distance piece (9), and are fastened again, which is repeated until the wall is completed.



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A method and an assembly for providing a guide wire along a wall to be built.

When laying bricks of a wall, a guide wire is always used which is tensioned horizontally along the wall portion to be made, and generally at the height of the upper side of a brick layer to be laid. A very old method for fixing the wire, which is specially suitable for smaller brickwork, comprises fixing the guide wire at the extremities of the brickwork after a brick of a new layer has been provided, and fixing can take place, for instance, by providing the wire extremities with a weight, and, sometimes, an end part of the wall will be made higher, and then the wire can be fixed by means of a nail inserted into the mortar of a joint.

For larger brickwork it is, however, customary to direct vertical uprights of wood or aluminium at the ends of the wall parts to be made, which are fixed in the desired position by means of least two struts, on which uprights the upper sides of the consecutive brick layers are indicated by pencil lines. The guide wire is, then, fixed to the upright in the location of a line, either by binding or by means of a nail driven into the upright, or by means of a pin inserted in a hole therein. The drawback thereof is that the life span of such uprights is small, that the pencil lines are inaccurate, and that the visibility thereof is impaired by cement attached thereto, or, when re-using, by the traces of previously made lines. The usefulness of these wooden uprights is, in particular, restricted by the fact that they do not retain their form, and will, in particular, warp. Finally, unfastening and refastening a guide wire is time-consuming.

It is an object of the invention to avoid the drawbacks of the known methods, and to provide a method and an assembly for tensioning a guide wire.

The method according to the invention comprises vertically erecting uprights at the ends of a wall part to be made by means of struts, and providing thereon means for connecting therewith a guide wire at the desired heights, which method is characterized in that, on each upright, two sliding pieces slidable thereon are provided and are fastened thereon by means of a clamp, in that the guide wire is, at least for the duration of the brick-laying, permanently tied at its extremities to one of the sliding pieces of an upright, these first sliding pieces then being fastened so that the guide wire is horizontally aligned in respect of a first brick layer to be made, in that second sliding pieces of these uprights are connected, by means of a distance piece, with the associated first sliding piece, said distance pieces being adjusted on a length corresponding with the thickness of a brick layer including a mortar layer, and are, thereafter, fas-

tened, which second sliding pieces can be arranged, by means of the associated distance pieces, at a distance from the first sliding pieces corresponding to the thickness of a brick layer, and in that, after laying the first layer, the first sliding pieces are shifted against the associated second sliding pieces and are fastened again, after which the second sliding pieces are shifted again by a distance corresponding with the adjusted length of the distance piece, and are fastened again, which is repeated until the wall is completed.

Furthermore the invention relates to an assembly for executing this method, said assembly comprising uprights with struts, adapted to be vertically arranged near the extremities of a wall portion to be made, and further comprising means for connecting a guide wire with said uprights at the desired height, said assembly being characterized by sliding pieces which are slidable along said uprights, and which can be fastened thereon by means of a clamp means in arbitrary points, said sliding pieces each being provided with at least one fastening element for fastening thereon permanently, at least for the duration of the operations, a guide wire, and furthermore provided with a mounting means for auxiliary elements, said auxiliary elements comprising a distance piece with a slot and a stop and a strut fixing means, a distance piece being adapted to be adjustably fastened by means of said slot parallel to the sliding axis of the fixing means of a sliding piece, said stop determining the adjusted maximum distance to another second sliding piece which can be shifted and fastened on the same upright, a strut mounting means being adapted to connect a strut at a suitable angle and with an adjustable length to a sliding piece.

In particular the guide wire fixing means can be adapted for connecting at least two guide wires with a guiding piece extending in two different, and in particular mutually perpendicular, directions.

The sliding pieces can be provided with flattenings extending at the angle which is desired between the guide wires, on each of which a fixing means for a guide wire is provided.

The uprights are, in particular, tubes, the sliding pieces then being provided with an aperture fitting around these tubes. In the aperture wall of each sliding piece a recess for a clamping plate can be provided, into which recess a hole for a tensioning screw opens, by means of which the tensioning plate can be tightened.

In the aperture wall of such a sliding piece a second recess can be provided which is intended for introducing a distance piece in the form of an elongate strip provided with a slot and a stop.

In this manner, shifting a guide wire along the brickwork is substantially simplified and accelerated, and in particular the horizontal alignment of the guide wire is to be performed only once, the distance piece, together with the second sliding pieces, providing an accurate shifting of the wire by the desired distance. The same sliding pieces can also be used for fixing struts for supporting said uprights.

The invention will be elucidated below by reference to a drawing, showing in:

Fig. 1 a simplified representation of an assembly according to the invention;

Fig. 2 a representation at a larger scale of a preferred embodiment of two co-operating sliding pieces of this assembly with an associated distance piece; and

Fig. 3 a top view, partially in section, of a sliding piece of Fig. 2.

In Fig. 1 a simplified representation of an assembly according to the invention is shown. This assembly comprises two uprights 1, each being supported on a footplate 2, and each being adapted to be vertically directed by means of two struts 3 and a ground attachment 4, for each upright 1 only one strut 3 being shown; the other ones are situated in a plane perpendicular to the plane of the drawing, and are not shown for reasons of simplicity.

On each upright 1 two pairs of sliding pieces 5A, B and 6A, B respectively are slidably provided, which pieces can be fastened on the upright 1 in question by means of a clamp to be described below.

The sliding pieces 5A are intended for fastening and shifting a guide wire 7, and the sliding pieces 6 are each intended for fixing a strut 3 in a manner to be described below, in order to vertically support the upright 1.

The sliding pieces 5A are, at first, fastened on the upright 1 in question in such a manner that the guide wire 7 connected therewith is horizontally directed. With each sliding piece 5B a distance piece 9 with an adjustable length to be described below, and being provided with a stop also to be described below, is connected which co-operates with the other sliding piece 5A. After aligning the sliding pieces 5A in respect of a first brick-layer to be laid, the sliding pieces 5B are shifted upwards until the stop of the distance piece 9 engages the first sliding piece 5A. When, after laying the first layer of bricks, the sliding pieces 5A are shifted upwards until each one engages the corresponding second sliding piece 5B, the guide wire 7 has been shifted by the brick layer thickness if the distance piece 9 has been adjusted accordingly. The second sliding pieces 5B are, then, shifted upwards again by a distance corresponding with the thick-

ness of a subsequent layer of bricks. Of course said sliding pieces are clamped again on the upright 1 in question after each shifting movement.

It will be clear that, after having initially being aligned horizontally, the guide wire 7 remains horizontally further on, and that the shifting of the wire 7 by the thickness of a layer of bricks requires only a simple manual operation, viz. loosening the sliding pieces 5A in question, shifting them until stopped by the second sliding pieces 5B, and fastening of the first sliding pieces 5A, and, subsequently after loosening, shifting the second sliding pieces 5B and fastening the latter, after the stop of the associated distance piece 9 has engaged the corresponding first sliding piece. This can be done extremely quickly, and no errors can be made because of aligning the guide wire on unclear or too thick pencil lines or the like.

The uprights 1 have a shape allowing shifting the sliding pieces 5 and 6 therealong. In practice round tubes, in particular made of aluminium, are preferred since such tubes have a circular symmetry, so that the sliding pieces can be rotated, if necessary, around these tube lengths in order to simplify the alignment of the guide wire 7 and the struts 3.

Figs. 2 and 3 show a preferred embodiment of the sliding pieces 5 and 6, intended for being arranged on an upright having a circular cross-section. These sliding pieces are adapted for connecting two mutually perpendicular directed guide wires therewith, as is required when making two mutually perpendicularly arranged wall portions. When making a single wall, only one thereof is to be used of course, and also other embodiments for guide wires directed in a different manner are possible.

Each sliding piece has an aperture 10 having an inner diameter which is slightly larger than the outer diameter of an upright 1. The outer wall comprises a, for instance, substantially circular portion 11 and two perpendicular flattenings 12 joining the former portion. On each flattening 12 a knob 13 is provided having an undercut 14, in which an extremity of a guide wire 7 can be wound, and a free end of the guide wire can be fastened in a clamping slot 15. These sliding pieces 5 and 6 consist, for example, of one piece of plastics, and the knobs 13 are unitarily formed thereon.

Moreover recesses opening in the inner wall of the aperture 10 are provided. The first recess 16 has a widening 17 with plane and parallel lateral walls, into which a clamping plate 18 made of stainless steel or the like is arranged, in which recess 16 a hole 19 opens in which a wing screw 20 is provided which is either engaging screw thread of the hole 19, or, as is preferred, engages screw thread of a plate 21 arranged in the recess

16 behind the clamping plate 18, which screw presses, with its extremity, against the rear side of the clamping plate 18. When turning the screw 20 the clamping plate 18 presses the edges of the recess 16 against the upright 1 inserted into the aperture 10, in order to clamp the sliding piece 5 or 6. The clamping plate 18 is preferably provided, at its extremities, with tongues 22 gripping around the screw plate 21 at its upper and lower side, so as to prevent this plate from falling out and being rotated, and also the clamping plate 18 is secured against falling out.

The second recess 23 is provided at an angular distance of 90° in respect of the first recess 16, and is, as shown, a straight recess. A through-hole 24 opens into this recess 23.

Into the recess 23, for instance, the head of a bolt can be inserted having a screw end which extends outwards and on which a strut 3 can be fixed by means of a wing nut. Preferably, however, a simple U-shaped metallic bracket is used gripping round a strut 3, which can be clamped thereon after turning on the wing nut. In this manner it becomes possible in a simple manner to adjust the length of the strut and to obtain an unambiguously fixation of said strut 3.

In the case of the sliding pieces 5, a distance piece 9 is inserted into the recess 23, said distance piece having the form of a metallic strip, in particular made of stainless steel, having an elongate slot 25 and an upturned extremity 26. This distance piece 9 is, then, fastened on a first sliding piece, for instance the stop sliding piece 5B, by means of a bolt 27 inserted through the hole 24 and a wing nut 28 screwed thereon. This distance piece 9 is arranged also in the other sliding piece 5A in the recess 23 thereof, and then the upturned end 26 will grip below this sliding piece 5A. The operative length of this distance piece is selected by shifting and fastening it in respect of the sliding piece 5B, and this in such a manner that a mutual shifting of these sliding pieces 5A and 5B is restricted to a maximum value by the upturned end 26 acting as a stop, which value corresponds with a desired brick layer thickness.

It will be clear that this distance piece can also be fastened on the sliding piece 5A, and then the upturned end 26 will grip behind the stop sliding piece 5B.

Therefore these sliding pieces can be used for fastening and aligning the guide wire 7 as well as for fixing the uprights 1 and the struts 3. This reduces the number of parts to a minimum.

The embodiment of the sliding pieces 5 and 6 shown has the advantage that the uprights 1 remain at some distance from the wall parts to be made, and the knobs 13 can be arranged so closely to said wall parts that the guide wire will be

directed along the brick layer also in the case of mutually perpendicular wall portions. The recesses 16 and 23 will, then, be situated at the side remote therefrom and will be readily accessible then.

It will also be clear that these sliding pieces can be provided with flattenings 12 directed at a different angle or having a larger number thereof. It is also possible to provide these sliding pieces with an eye or hook in the portion between the flattenings 12, and two guide wires 7 directed at an angle can then be connected therewith.

The assembly as described can, in particular, be used for making cavity walls, and then such an assembly will be arranged at both sides thereof. Such assemblies are suitable for long as well as for short walls, and the height of the uprights 1 is not subject to any restriction, and in particular extension tubes can be used. In the case of high buildings it is also possible to mount the uprights 1 and struts 3 on an intermediate floor, scaffold or the like, and then suitable outriggers, scaffold clamps or the like can be used.

The uprights 1 have a long long life-span, and can be repeatedly re-used. Also the sliding pieces 5 and 6 are very durable, and the price thereof can be so favourable that replacement thereof is not objectionable.

Claims

1. A method for arranging a guide wire along a wall to be made by brick-laying, comprising vertically erecting uprights at the ends of a wall part to be made by means of struts, and providing thereon means for connecting therewith a guide wire at the desired heights, which method is **characterized in that**, on each upright, two sliding pieces slidable thereon are provided and are fastened thereon by means of a clamp, in that the guide wire is, at least for the duration of the brick-laying, permanently tied at its extremities to one of the sliding pieces of an upright, these first sliding pieces then being fastened so that the guide wire is horizontally aligned in respect of a first brick layer to be made, in that second sliding pieces of these uprights are connected, by means of a distance piece, with the associated first sliding piece, said distance pieces being adjusted on a length corresponding with the thickness of a brick layer including a mortar layer, and are, thereafter, fastened, which second sliding pieces can be arranged, by means of the associated distance pieces, at a distance from the first sliding pieces corresponding to the thickness of a brick layer, and in that, after laying the first layer, the first sliding pieces are shifted against the associated second sliding pieces and are fastened again, after which the second sliding pieces are

shifted again by a distance corresponding with the adjusted length of the distance piece, and are fastened again, which is repeated until the wall is completed.

2. An assembly for executing this method according to claim 1, comprising uprights with struts, adapted to be vertically arranged near the extremities of a wall portion to be made, and further comprising means for connecting a guide wire with said uprights at the desired height, **characterized by** sliding pieces (5, 6) which are slidable along said uprights (1), and which can be fastened thereon by means of a clamp means in arbitrary points, said sliding pieces (5, 6) each being provided with at least one fastening element (13) for fastening thereon permanently, at least for the duration of the operations, a guide wire (7), and furthermore provided with a mounting means (27) for auxiliary elements, said auxiliary elements comprising a distance piece (9) with a slot (25) and a stop (26) and a strut fixing means (8), a distance piece (9) being adapted to be adjustably fastened by means of said slot (25) parallel to the sliding axis of the fixing means (27) of a sliding piece (5), said stop (26) determining the adjusted maximum distance to another second sliding piece which can be shifted and fastened on the same upright (1), a strut mounting means (8) being adapted to connect a strut (3) at a suitable angle and with an adjustable length to a sliding piece (6).

3. The assembly of claim 2, **characterized in that** the guide wire fixing means (13) can be adapted for connecting at least two guide wires (7) with a guiding piece (5) extending in two different, and in particular mutually perpendicular, directions.

4. The assembly of claim 3, **characterized in that** the sliding pieces (5) can be provided with flattenings (12) extending at the angle which is desired between the guide wires (7), on each of which a fixing means (13) for a guide wire (7) is provided.

5. The assembly of any one of claims 2..4, **characterized in that**, the uprights (1) are tubes, and in that the sliding pieces (5, 6) are provided with an aperture (10) fitting around said tubes.

6. The assembly of claim 5, **characterized in that** a recess (16) for a clamping plate (18) is provided in the wall of the aperture (10) of a sliding piece (5).

7. The assembly of any one of claims 2..6, **characterized in that** a second recess 23 is provided in the wall of the aperture of such a sliding piece, said recess being adapted for inserting a distance piece (9) in the shape of an elongate strip provided with a slot (25) and a stop (26).

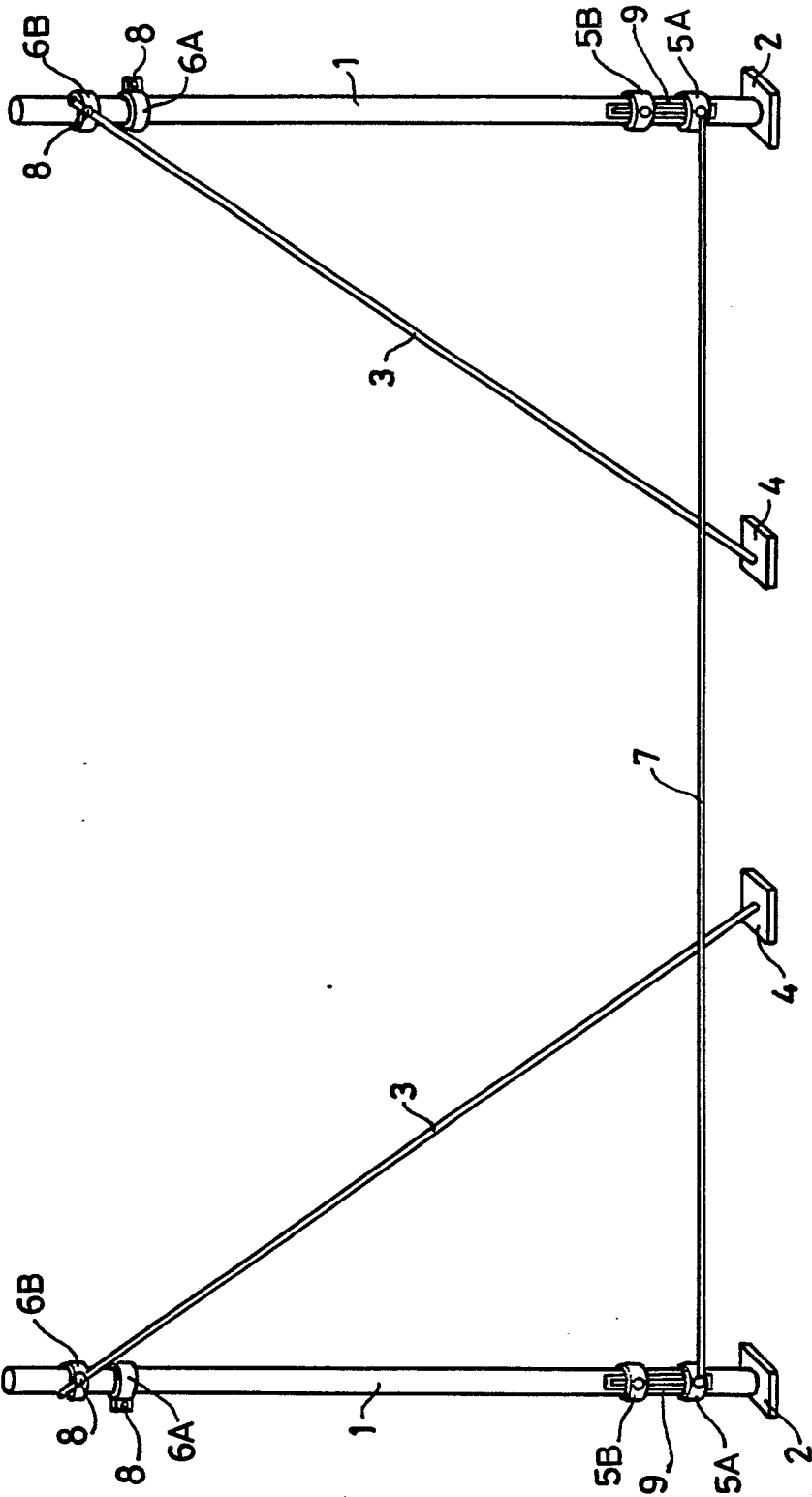


Fig. 2.

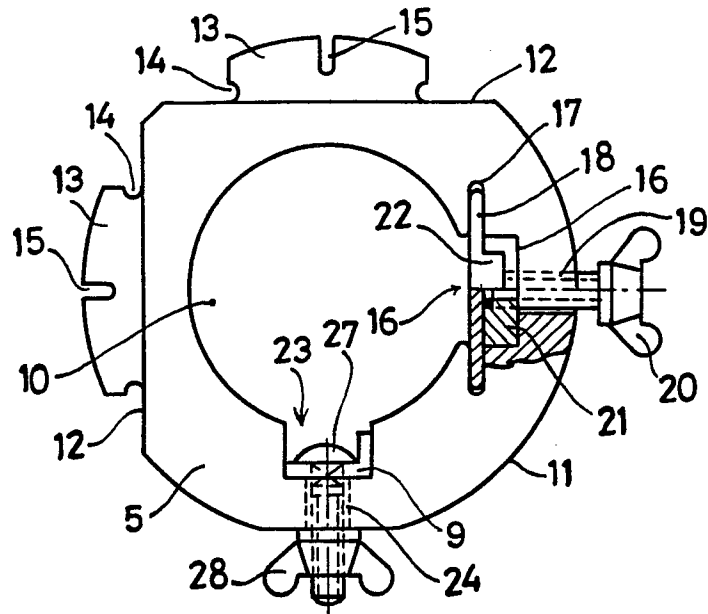


FIG. 3.

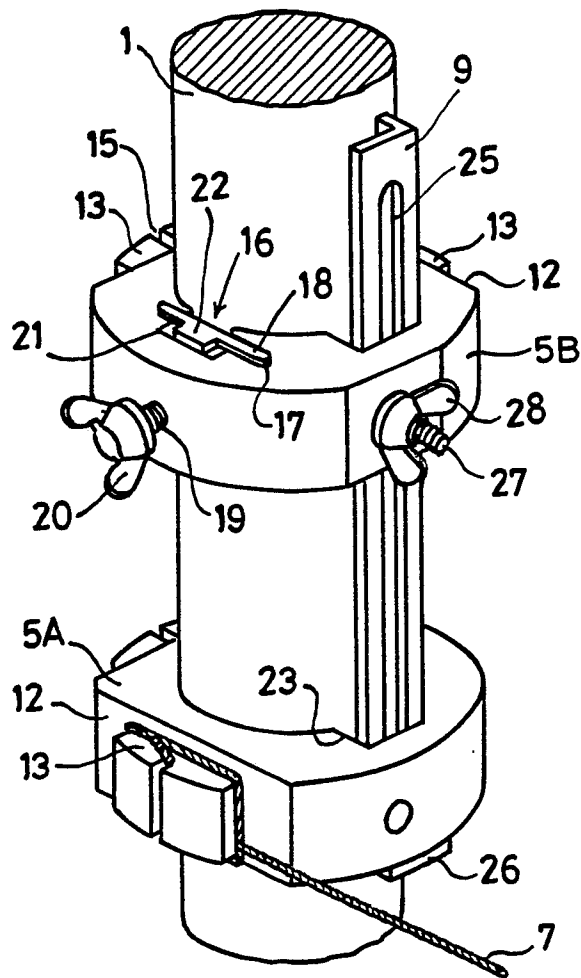


FIG. 2.



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	BE-A- 637 074 (DANNEEL) * Page 1; fig. *	1,4	E 04 G 21/18
A	---	2,7	
A	US-A-3 104 468 (SARLES) * Column 2, lines 42-73; columns 3,4; figures 1-4 *	2,5	
A	---		
A	US-A-2 612 695 (SCHNEIDER) * Column 3, lines 57-75; column 4, lines 1-22; figures 1,6,7,8 *	3	
A	---		
A	DE-A-2 353 267 (BORSTRÖM) ---		
A	US-A-1 641 854 (JARDOT) -----		
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 12-02-1990	Examiner VIJVERMAN W.C.
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