

(No Model.)

J. P. MALLETT.
COIL FOR ELECTRICAL MACHINES.

No. 589,845.

Patented Sept. 14, 1897.

Fig. 1.

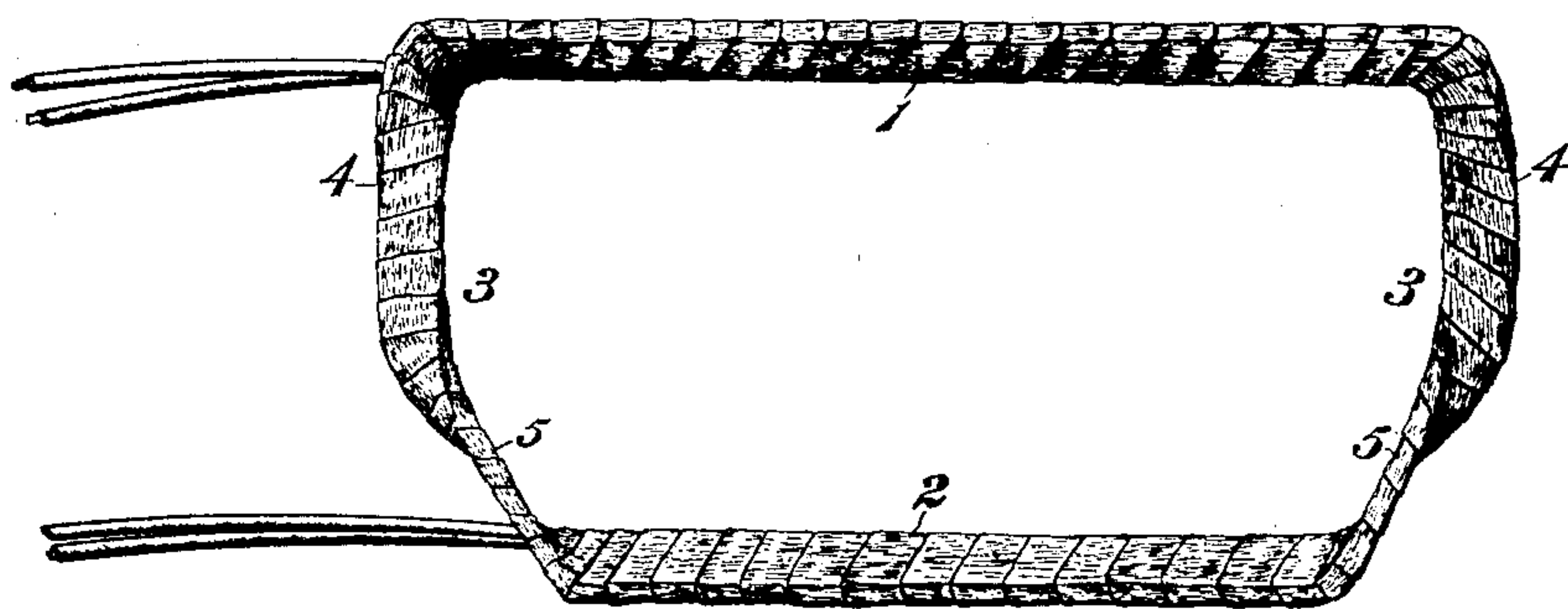
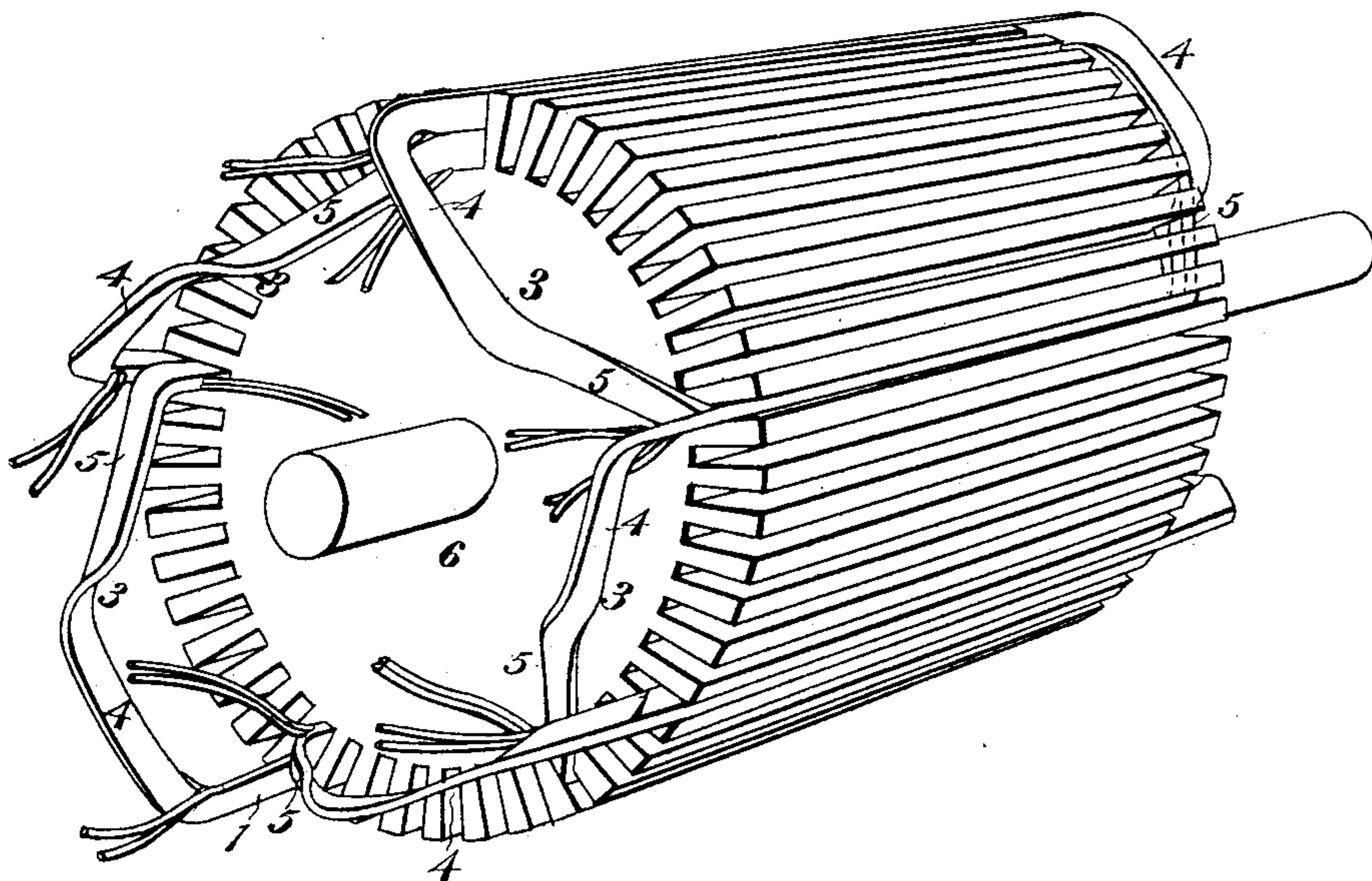


Fig. 2.



WITNESSES:

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COIL FOR ELECTRICAL MACHINES.

SPECIFICATION forming part of Letters Patent No. 589,845, dated September 14, 1897.

Application filed February 15, 1897. Serial No. 623,352. (No model.)

To all whom it may concern:

Be it known that I, JOHN P. MALLET, a citizen of the United States, residing in Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Coils for Electrical Machines, (Case No. 731,) of which the following is a specification.

My invention relates to windings for electrical machines, and has particular reference to windings composed of machine-wound coils and to the individual coils of which such winding is composed.

The object of my invention is to provide a coil so constructed that there is a minimum danger of rupturing the insulation and one that is so constructed as to form an element of a complete winding which occupies a minimum amount of space consistent with satisfactory ventilation and in which one side of each coil projects in straight lines beyond the ends of the core, so as to permit of the application of bands to such projecting ends.

In the accompanying drawings, Figure 1 is a plan view of a coil constructed in accordance with my invention; and Fig. 2 is a perspective view of an armature-core, showing a few of the coils in position thereon.

The coil constructed in accordance with my invention consists of a number of turns of wire wound in a mold or form and of such shape as to be applied to a core without any material bending from its original shape either before or after such application.

The coil consists of a long side 1, a short side 2, and ends 3 of like form and dimensions. Each portion of the coil is flat or oblong in cross-section, as indicated, and the opposing faces of the two sides 1 and 2 are inclined with reference to each other at such an angle as to accurately fit into slots in the core, which are separated a distance equal to the distance between the said sides 1 and 2. Each end 3 comprises a portion 4, which projects at substantially right angles to the side 1 and lies flatwise in the general plane of the coil or in a plane parallel thereto. Each end 3 is given a quarter-turn laterally at substantially its middle point, so that substantially

one-half of such end 3 constitutes a longitudinally-inclined portion 5, the flat sides of which lie in planes substantially perpendicular to the planes of the flat sides of the parts 4. When the coils are assembled in the slots of the core, the short sides 2 will lie in the inner portions of such slots and the long sides 1 in the outer portions. It will thus be readily seen that if retaining-bands are placed about the projecting ends of the sides 1 the whole winding will be securely held in position in the slots. As the short sides 2 are substantially the same length as the core and the sides 1 are only made of sufficiently greater length to give satisfactory clearance, it will be seen that the minimum space is occupied longitudinally. The form of the bends in the ends of the coil and the relative position of the parts 4 and 5 are such that there is little or no danger of injury to the insulation either by the bend imparted to the end of the coil or by reason of the rubbing together of either the adjacent coils or the leads projecting from their ends.

Since a maximum difference of potential exists between the two portions of the coils which occupy the same slot, the projection of the outer conductors materially beyond the inner ones is important. The adjacent leads may not only be more readily manipulated, but any injury to the insulation which may be caused by such manipulation will be much less likely to result in a burning out of the coils than is the case in the windings heretofore employed. The form of these ends is also such that the coils readily pass each other, and a well-ventilated compact winding is secured.

While I have shown the coils as applied to a drum-armature 6, I desire it to be understood that the invention is not limited as regards the particular shape or kind of core employed.

I claim as my invention—

1. A coil for electrical machines comprising straight parallel sides of unequal length the opposing faces of which lie in converging planes, and ends, each of which consists of a portion adjacent to the long side and approxi-

mately perpendicular thereto and a longitudinally-inclined portion joining said perpendicular end portion with the short side.

2. A coil for electrical machines having six
5 sides, each of which is oblong in cross-section, two of said sides being parallel, of unequal length and oppositely inclined laterally with reference to the general plane of the coil, two
10 being parallel, of equal length and lying in or parallel to the general plane of the coil and the remaining sides being laterally perpendicular to the general plane of the coil and oppositely inclined longitudinally with reference to the other sides.

15 3. A coil for electrical machines comprising two parallel sides of unequal length and ends joining the same, said ends being bent both laterally and longitudinally at approximately their middle points, so that the corresponding faces of the adjacent portions lie in planes
20 substantially perpendicular to each other.

4. A coil comprising a straight long side, a straight short side parallel thereto and ends
25 of substantially the same shape and dimensions, each of which embodies two substantially straight portions the corresponding side faces of which lie in planes substantially perpendicular to each other.

5. The combination with a slotted core, of

a set of coils each of which comprises a side 30 of substantially the length of the core and located in the inner portion of a slot, a side materially longer than the core and located in the outer portion of another slot and ends
35 projecting from the extremities of the long side at right angles to said side for approximately one-half the distance between the two sides and thence extending directly to the extremities of the short side.

6. The combination with a slotted core, of 40 a set of coils each of which comprises a side of substantially the length of the core and located in the inner portion of a slot, a side materially longer than the core and located
45 in the outer portion of another slot and ends bent both laterally and longitudinally at approximately their middle points, said sides and ends being oblong in cross-section and the broad faces of the adjacent end portions
50 being in planes substantially perpendicular to each other.

In testimony whereof I have hereunto subscribed my name this 12th day of February, A. D. 1897.

JOHN P. MALLETT.

Witnesses:

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HUBERT C. TENER.