F. JAECKLE AND P. MEHLHORN.

MANUFACTURE OF REENFORCEMENTS FOR WOODEN POLES, MASTS, ETC., WHICH ARE SET IN THE GROUND AND HAVE BEEN DAMAGED BY WEATHER INFLUENCES.

APPLICATION FILED JUNE 11, 1920.

1,416,641.

Patented May 16, 1922.

2 SHEETS—SHEET 1.

FIG. 1.

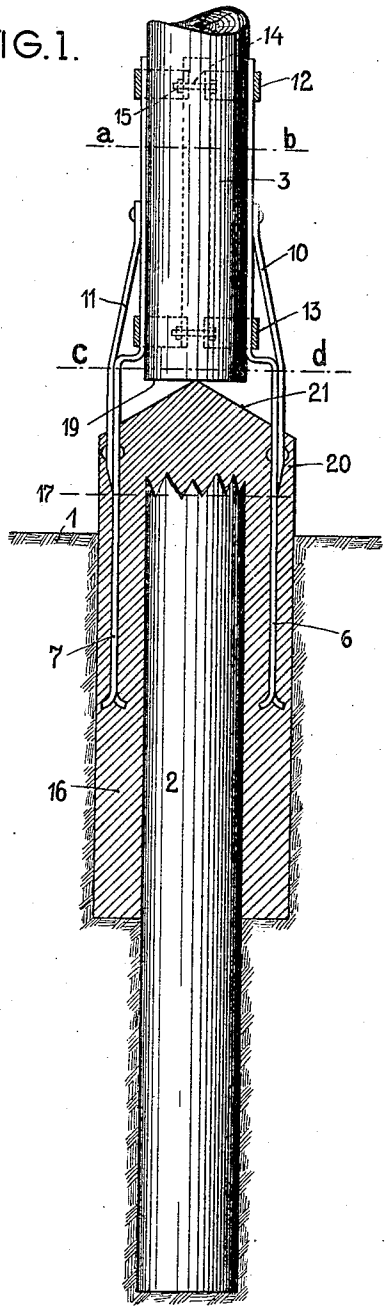


FIG. 2.

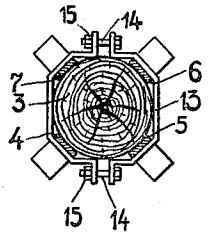
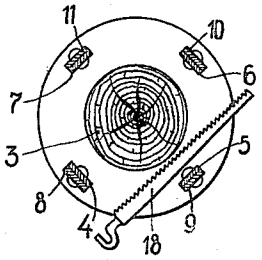


FIG. 3.



INVENTORS
PAUL MEHLHORN
FRIEDRICH JAECKLE
BY Munn & Co
ATTORNEYS

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2 SHEETS—SHEET 2.

FIG.4.

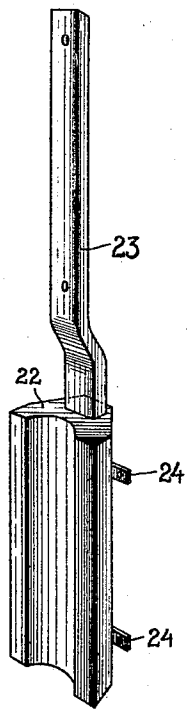


FIG.5.

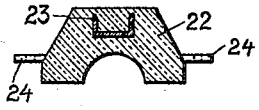
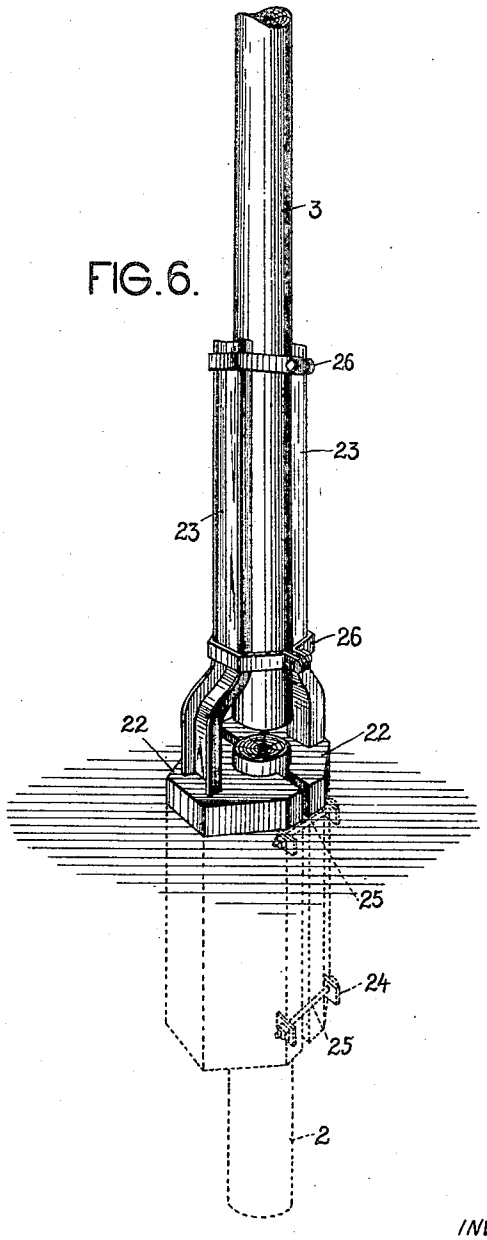


FIG.6.



INVENTORS
PAUL MEHLHORN
FRIEDRICH JAECKLE
BY Munn & Co
ATTORNEYS

UNITED STATES PATENT OFFICE.

FRIEDRICH JAECKLE AND PAUL MEHLHORN, OF FREIBURG, GERMANY.

MANUFACTURE OF REENFORCEMENTS FOR WOODEN POLES, MASTS, ETC., WHICH ARE SET IN THE GROUND AND HAVE BEEN DAMAGED BY WEATHER INFLUENCES.

1,416,641. Specification of Letters Patent. Patented May 16, 1922.

Application filed June 11, 1920. Serial No. 388,381.

To all whom it may concern:

Be it known that we, FRIEDRICH JAECKLE, a citizen of the Free State of Baden, in the German Republic, and PAUL MEHLHORN, a citizen of the Free State of Saxony, in the German Republic, both residing at Freiburg, in the Free State of Baden, Germany, have invented improvements in the manufacture of reenforcements for wooden poles, masts, etc., which are set in the ground and have been damaged by weather influences, (for which we have filed application in Germany February 6, 1918;) and we do hereby declare the following to be a full, clear, and exact description of the same.

Wooden poles, masts, telegraph posts and the like are subject to early decay at the surface of the ground where they have been erected, while the remaining portions of the mast or post, especially the part farther down in the ground, are still sound.

Until now such damaged masts, poles etc., have been repaired for further use by completely replacing the under-ground part including the damaged zone by a new one. To do this a rather large expenditure of work is required and the expenses to be incurred in this way are relatively high.

It has been also suggested heretofore to encase the rotten portion of the post by means of a rigid sleeve or any similar means, but this does not mean a real healing of the pole. The destruction goes on, and the zone of decay increases, so that the life of the pole, mast, etc., cannot be saved for any appreciable length of time.

The object of the invention is to provide a means for rigidly connecting the underground or bottom portion of the mast with the aerial portion thereof in a manner that the decayed and weakened intermediate portion near the surface of the ground will be reinforced thereby to ensure the mast a prolonged life, even if the said intermediate decayed portion is partially or wholly cut out.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims, hereto appended.

Figure 1 is an elevation of a mast with the new reinforcing arrangement, partly in section, partly in side view, the top of the mast being broken off;

Figure 2 is a horizontal section on the line *a*—*b* in Figure 1;

Figure 3 is a horizontal section on the line *c*—*d* in Figure 1;

Figures 4 to 6 illustrate a modified form of the reinforcing arrangement or device comprising two symmetrical or identical halves;

Figure 4 being an elevation of the one half,

Figure 5 a horizontal section through the lower portion thereof and

Figure 6 a perspective view of the two halves with the mast there between and the top of the mast broken off, as in Figure 1.

In order to apply the reinforcing device over the decayed portion intermediate between the underground portion 2 and the aerial portion 3 of a mast the soil 1 is excavated around the former to a depth of say 30 inches so that a hole is obtained. To the upper part 3 of the mast an iron armature is rigidly connected consisting of four bent bars 4, 5, 6, 7, with stays 8 to 11, riveted thereto to reinforce the bent portions of the bars, which are firmly connected with the mast 3 by means of two clamping bands 12, 13, each consisting of two halves interconnected by bolts 14 and nuts 15, as clearly shown in Figure 2.

The hole is filled with stamped concrete 16 up to a level indicated by the line 17, so that the lower ends of the bars are embedded therein. When the concrete has bound the mast 2 the decayed portion of the mast between the planes 17 and 19 may be cut out by means of a handy saw 18, as shown in Figure 3. The cut faces are impregnated with carbolineum or some similar material in the usual manner and thereafter a concrete cap 20 having a conical top 21 may be formed on the upper end of the concrete body 16. Instead of forming the concrete body 16 in a hole dug around the underground end of the mast, a concrete body formed in a mold and consisting of two halves may be employed. This modification is shown in Figures 4 to 6. It will be seen that in this case only two bars may be employed, one in each half of the concrete body.

The two halves or parts 22 of the latter are channel-shaped to snugly fit the cylindrical end 2 of the mast and an iron bar of

U-section is embedded in each part 22, as clearly shown in Figure 5. Besides that transverse iron lugs 24 with holes in their projecting ends are embedded in said parts 22. After the two parts have been put together, as shown in Figure 6, so that the pole is enclosed in their channels they are forced together to fit tightly on the mast end 2, by means of screw bolts 25 passing through the holes of opposite lugs 24. The upper ends of the bars 23 are bent inwards to properly fit the aerial portion 3 of the mast, and they are rigidly attached to the latter by means of clamping bands 26 which are of a construction similar to that shown in and described with respect to Figure 2.

After the mast has been firmly connected with the concrete base 22 and the bars 23, the decayed portion of the mast intermediate between the portions 2 and 3 may be cut out as before and that shown in Figure 1 may be applied over the stump of the mast portion 2 projecting from the concrete base. This cap, of course, is not indispensable, and the stump may be protected against moisture in some other way, such as by giving it a coat of asphalt, tar, or the like.

Having now described and ascertained the nature of our invention and the manner in which the same is to be performed we now declare what we claim and desire to secure by Letters Patent of the United States:

1. The method herein described of repairing poles, masts and the like which have been damaged by weather influences, consisting in anchoring a metal armor in a concrete base about the poles, securing the armor to the pole or mast above the damaged portion, severing the pole above and below the damaged portion and removing the damaged portion, and placing cement in the space occupied by the removed damaged portion.

2. The method herein described of repairing poles, masts and the like, consisting in anchoring metal bars in a concrete base about the pole, securing the bars to the pole or mast above the damaged portion, severing the pole or mast above and below the damaged portion and removing the damaged portion, and placing a member in the space occupied by the removed damaged portion.

3. The method herein described of repairing poles, masts and the like which have been damaged by weather influences, consisting in excavating around the post or mast, pouring concrete into the excavation about the pole or mast, anchoring metal bars in the concrete, securing the bars to the pole or mast above the damaged portion, removing the transverse section of the pole or mast which is damaged, and placing filling in the space occupied by the removed damaged section.

4. The method herein described of repairing poles, masts and the like which have been damaged by weather influences, consisting in excavating around the pole or mast, placing a concrete base having metal bars projecting vertically therefrom in the excavation around the pole or mast, securing the bars to the pole or mast above the damaged portion, severing the pole or mast above and below the damaged portion and removing the damaged portion, and placing concrete between the severed ends of the pole or mast.

5. The method herein described of repairing poles, masts and the like which have been damaged by weather influences, consisting in excavating around the pole or mast, placing a plurality of concrete members having metal bars projecting vertically therefrom in the excavation about the pole or mast, binding the members together around the pole or mast to form a concrete base, binding the upper ends of the bars upon the pole or mast above the damaged portion, severing the pole or mast above and below the damaged portion and removing said portion, and placing a concrete cap on the base with a portion of it between the severed ends of the pole or mast.

In testimony whereof, we have signed our names to this specification in the presence of two subscribing witnesses.

FRIEDRICH JAECKLE.
PAUL MEHLHORN.

Witnesses:
KARL BROCATTI,
JOH. BART. ZWICK.