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(71) Applicants:
• **MIKOLAJEK, Grzegorz**
34-210 Sleszowice (PL)

• **Pyzowski, Tomasz**
34-400 Nowy Targ (PL)

(72) Inventors:
• **MIKOLAJEK, Grzegorz**
34-210 Sleszowice (PL)
• **Pyzowski, Tomasz**
34-400 Nowy Targ (PL)

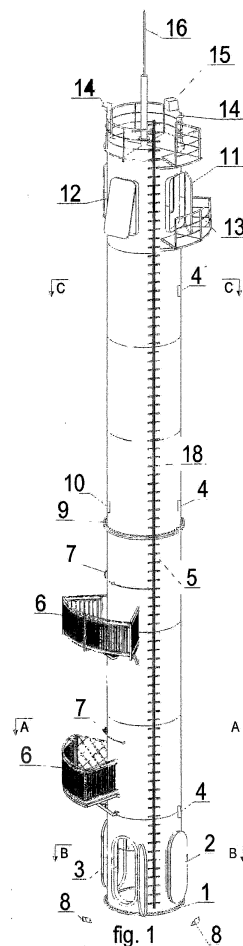
(74) Representative: **Grzaka, Andrzej**
Rzecznik Patentowy
Ul. Sadowa 7/11
31-542 Krakow (PL)

(54) **FIRE TOWER WITH THE DRYING AND CLIMB-TRAINING FUNCTION**

(57) The subject of the invention is a fire tower with a drying room and climbing facility. The tower was designed for drying fire hoses, firefighting clothes, ropes and as a training facility for learning rescue techniques. The tower is equipped with a climbing facility located outside the tower.

The tower consists of a concrete foundation with a steel anchor and two steel segments made by "carg" rolling. The first segment consists of four rolled steel sheets, longitudinally and butt welded to form a uniform block in the form of a cylinder. The lower part of the cylinder attached to the foundation in the form of a footing is equipped with four entry holes with a door made of stainless steel. These holes are used to operate winches and allow air to circulate inside the tower when the door is opened.

The second tower segment also consists of four rolled steel sheets, longitudinally and butt welded, forming a uniform block in the form of a cylinder, which is also equipped with a flange allowing the connection of both segments by means of a prestressed connection.



Description

[0001] The subject of the invention is a fire tower with a drying room and climbing facility. The tower was designed for drying fire hoses, firefighting clothes, ropes and as a training facility for learning rescue techniques. The tower is equipped with a climbing facility located outside the tower.

[0002] Various training devices for fire brigades are available, such as a training simulator in the form of a wall (patent number: PL221440). This wall enables firefighters to train on various fire hoses in the situation of a fire hazard. Its construction is adapted for stationary work and mobile transport on a car trailer. It is equipped with power and support units for the training simulator, such as gas and flammable liquid cylinders, gas hose or for the transport of flammable liquids. It also contains elements supporting the loading and unloading of the training simulator. Similar devices are described and presented in numerous patents, e.g. in DE 10 2006 020 944 B3, EP 1 037 190 A2 and DE 101 18 077 A1. Mentioned devices are generally used for training firefighters in different fire hazard situations.

[0003] Rectangular fire towers, most often built as part of the fire station and serving mainly as lookout points are also well known. However, there are no known solutions for fire brigades in round or angular metal facilities that would combine a training facility with a drying facility for the equipment and firefighter clothing after fire response.

[0004] The purpose of this invention is to build a fire tower, which on the one hand gives the possibility of rapid drying of fire hoses, ropes and firefighting clothes using gravitational method (while not causing any damage during the drying process) and on the other hand enables training of rescue techniques by using a climbing facility located outside the tower. Currently, hoses, ropes and firefighters' clothes are usually dried in a horizontal position.

[0005] The goal set for the construction of the fire tower meets the solution according to the essential features of the invention, which are characterized in that the tower is in the form of a cylinder or a prism consisting of two segments permanently connected to each other.

[0006] Preferred embodiment of the tower consists of a concrete foundation with a steel anchor and two steel segments made by "carg" rolling.

[0007] The first segment consists of four rolled steel sheets, longitudinally and butt welded to form a uniform block in the form of a cylinder. The lower part of the cylinder attached to the foundation in the form of a footing is equipped with four entry holes with a door made of stainless steel. These holes are used to operate winches and allow air to circulate inside the tower when the door is opened. The second tower segment also consists of four rolled steel sheets, longitudinally and butt welded, forming a uniform block in the form of a cylinder, which is also equipped with a flange allowing the connection of

both segments by means of a prestressed connection.

[0008] In a preferred embodiment, the bottom segment mounted on the base plate 1 has four entrance doors with engraving made of stainless steel 2 arranged symmetrically along the entire perimeter of the cylinder slightly above the base (Fig. 4). Outside the tower, at the level of the entrance door, there is a panel controlling the tower (3) equipped with a touch screen for controlling the tower's functions such as winches (17), external lighting (8), internal backlighting, aviation lighting (14), weather station (15), temperature sensors measuring temperature inside the tower at three different levels (4), air flow sensor, ventilation flap actuators (12). Fire tower (18) according to the invention is equipped with a "Soll" ladder located on the outside, reaching from base (1) to the top platform. The top platform is equipped with a guardrail and a spotlight outdoor lighting (14). On the outer surface of the cylinder of the first (bottom) segment of the first tower, there are two training platforms (6), used for training rescue techniques. Above each training platform there is a railing (7) used to attach a rope during fire training.

[0009] The tower illumination (8) is located at the bottom of the tower, at the level of the base plate (1). Both lower (I) and upper (II) tower sections (18) are made of hot-galvanized sheet steel and are connected by a prestressed flange (9) allowing the two segments to be assembled together. Tower (18) painted with red paint with a thickness up to 160 μ is equipped with an air flow sensor (10) located inside the upper segment above the flange (9). In the upper part of the upper segment, there is an inspection platform (13) on the outside, which leads to the service room door (11) located inside the tower and equipped with three hinged ventilation flaps (12), controlled by mechanical actuators from the control panel (3). On the top platform, next to the guardrail equipped with an outdoor spotlight (14) there is a mounted weather station for measuring wind speed and direction, humidity and temperature. There is also a lightning rod (16) located in the center of the top platform. The tower (18) according to the invention has four winches (17) (fig. 2) equipped with heads for assembly hoses, ropes and firefighting clothing.

[0010] In another preferred embodiment, the bottom segment is attached to the foundation in the form of a glass, depending on the subsoil.

[0011] In another embodiment, both segments consist of edge bent steel sheets, welded longitudinally, forming a uniform block in the form of a prism.

[0012] An example of a useful embodiment of the tower according to the invention is shown in the drawings. Fig. 1 shows the fire tower with a drying room and climbing facility in general view, Fig. 2 shows the cross-section of the second (upper) tower segment below the inspection platform at the service room, Fig. 3 shows the cross-section of the first (lower) tower segment between the training platforms, Fig. 4 shows cross-section of the first (lower) tower segment below the training platforms.

[0013] The advantage of the tower according to the invention is the possibility of quick drying of fire hoses and ropes thanks to hanging and gravitational drying. The height of the tower allows hanging the hoses without "breaking" them, which significantly extends their life-time. Winches with variable lift speeds located in the tower allow mounting hoses easily in the head and to easily pull them up. An additional advantage is the possibility of using training platforms to practice rescue techniques and to practice on various types of rescue equipment such as a boom or ladder.

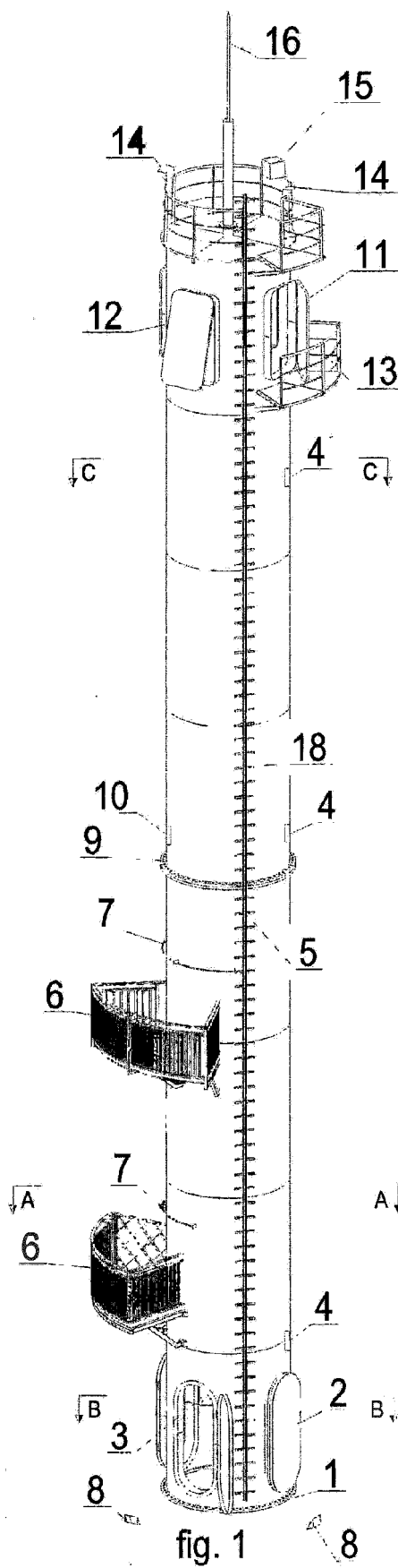
[0014] The tower presented in the embodiment of the invention, according to the essential features of the invention, does not exhaust all its possible implementation variants. This detailed description of the preferred two cylindrical and angular varieties, as well as detailed examples of its implementation, should not be interpreted as limiting the essential inventive idea described in the general part of this description.

Claims

1. Fire tower with a drying room and climbing facility, designed for drying fire hoses, firefighting clothes and ropes, consisting of a concrete foundation with a steel anchor and two steel segments, **characterized in that** the bottom segment mounted on the base plate (1) has four access doors (2) arranged symmetrically around the entire perimeter and the upper segment has a top platform, the bottom segment has two training platforms (6) attached to the outside, used for training rescue techniques, and above each training platform there is a railing (7) used to attach a rope during fire training.
2. The fire tower according to claim 1, **characterized in that** the steel segments are made as cylindrical elements made by "carg" rolling or angular elements made by edge bending.
3. The fire tower according to claim 1 or 2, **characterized in that** both tower segments (18) are joined by means of a prestressed flange connection (9).
4. Fire tower according to claims 1 or 2 and 3, **characterized in that** it has four winches (17) (fig. 2) equipped with heads for assembling hoses, ropes and firefighting clothes.
5. Fire tower according to claims 1 or 2 and 3 and 4 **characterized in that** outside the tower at the level of the entrance door there is a panel controlling the tower (3). equipped with a touch screen for controlling the tower's functions such as winches (17). controlling external lighting (8), internal, backlight, aviation lighting (14), weather station (15), temperature sensors (4), air flow sensor, ventilation flap actuators

(12).

6. Fire tower according to claims 1 or 2 and 3 and 4 and 5 **characterized in that** it is equipped with a ladder (5) located on the outside, reaching from the base (1) to the top platform, fenced with a guardrail equipped with spotlight outdoor lighting (14).
7. Fire tower according to claims 1 or 2 and 3 and 4 and 5 and 6 **characterized in that** in the upper part of the upper segment, there is an inspection platform (13) on the outside, which leads to the service room door (11) located inside the tower and equipped with three hinged ventilation flaps (12) controlled by mechanical actuators from the control panel (3).
8. The fire tower according to claims 1 or 2 and 3 and 4 and 5 and 6 and 7, **characterized in that** on the top platform, next to the guardrail equipped with a spotlight (14), there is a mounted weather station for measuring wind speed and direction, humidity and temperature. There is also a lightning rod (16) located in the center of the top platform.



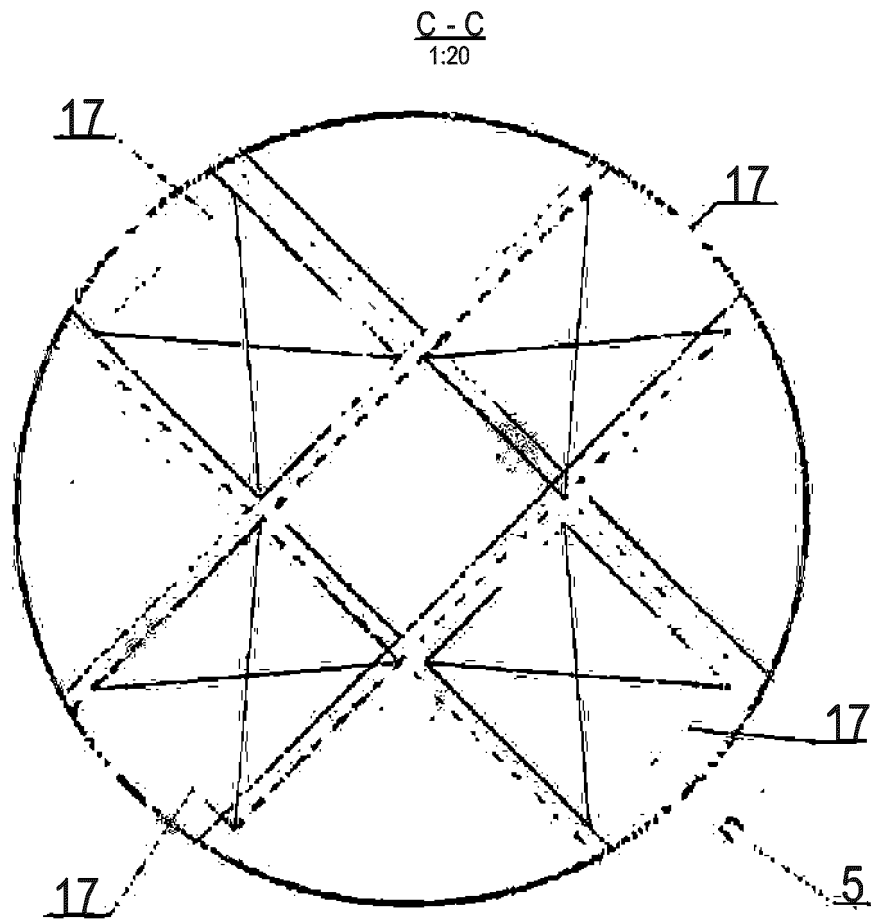


fig. 2

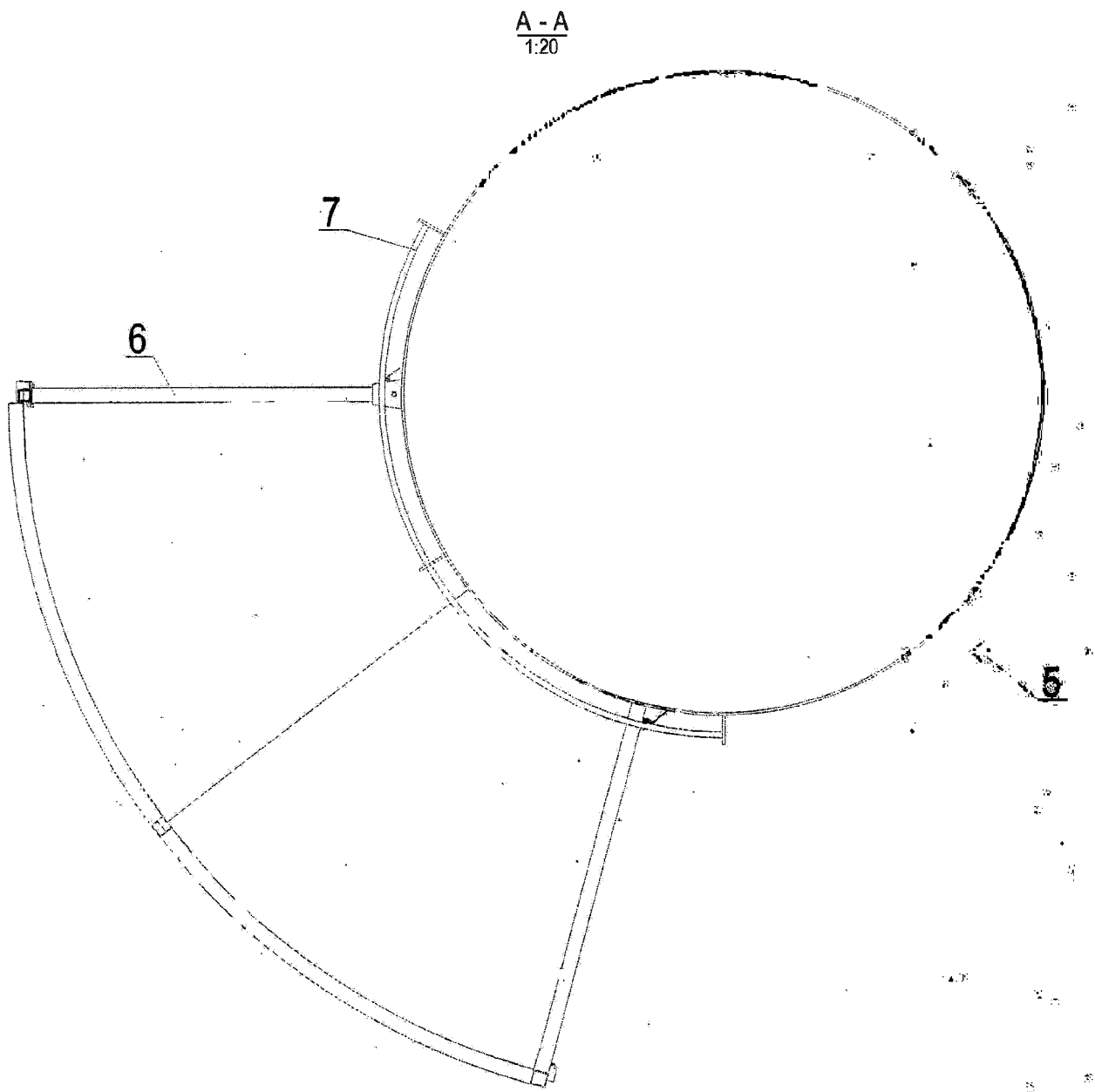


fig. 3

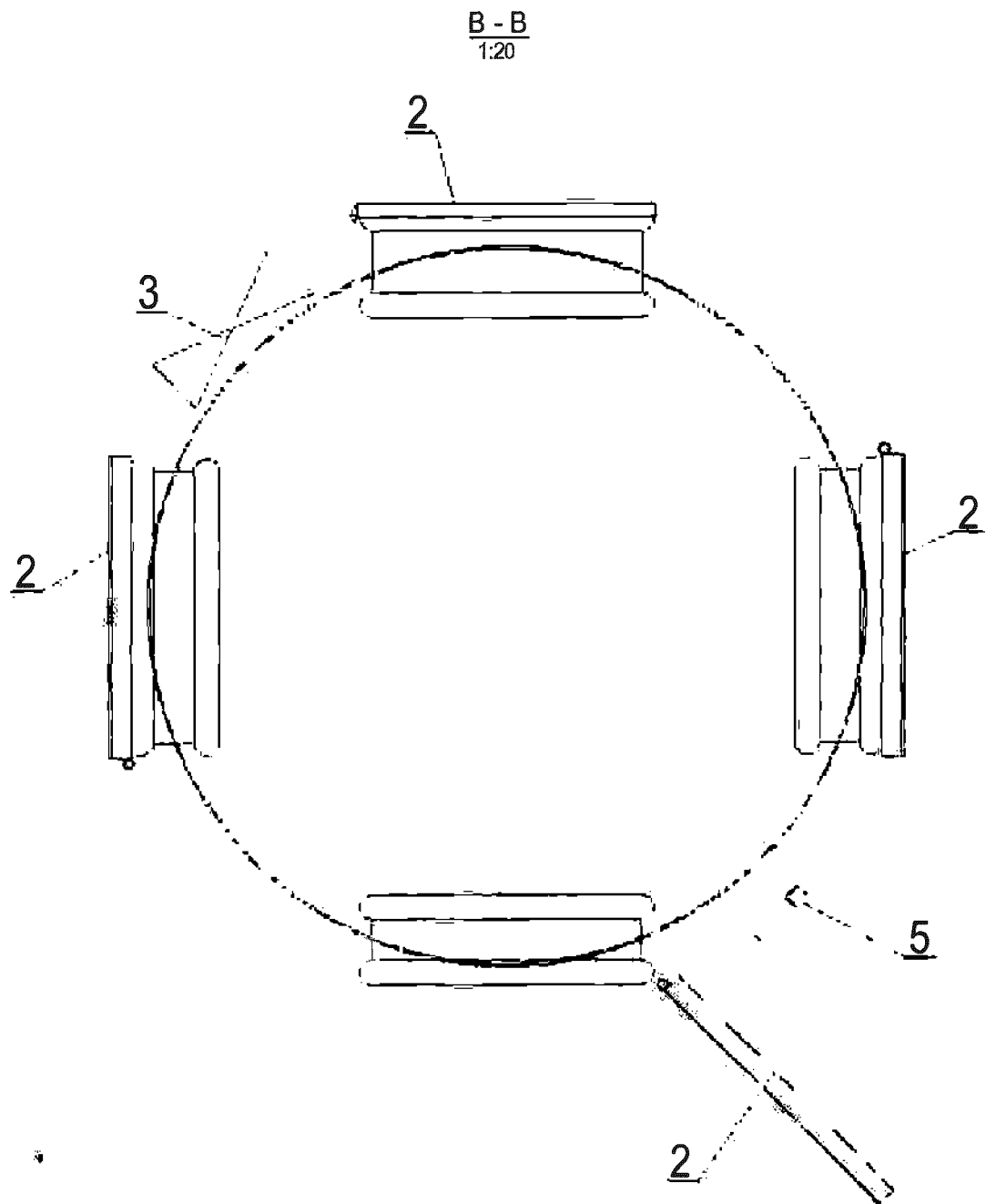


fig. 4



EUROPEAN SEARCH REPORT

Application Number
EP 19 46 0054

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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 19 May 2020	Examiner Valenta, Ivar
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 19 46 0054

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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19-05-2020

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