Sept. 29, 1931. E. A. HOBART 1,825,064

ELECTRIC WELDER

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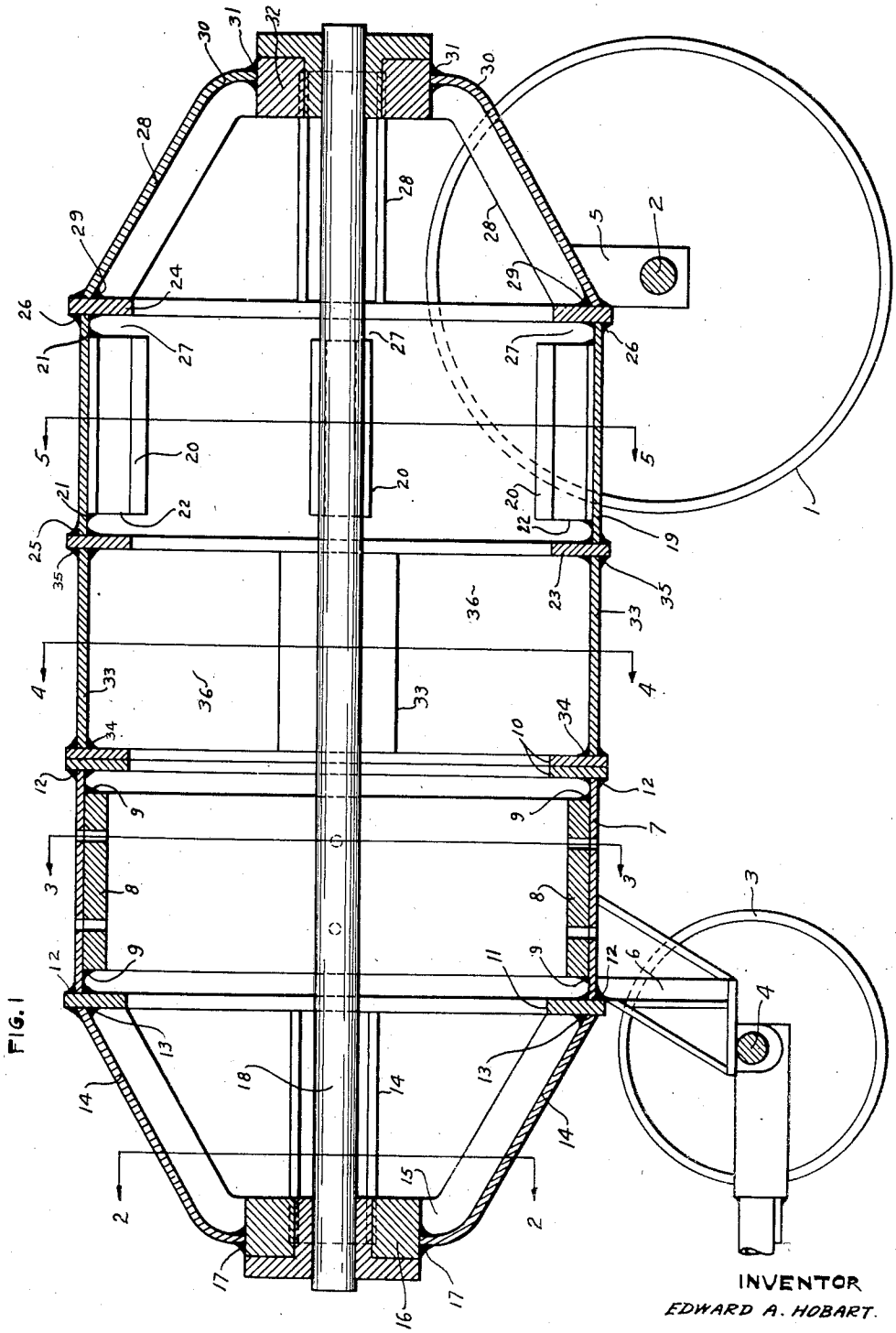


FIG. 1

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FIG. 2.

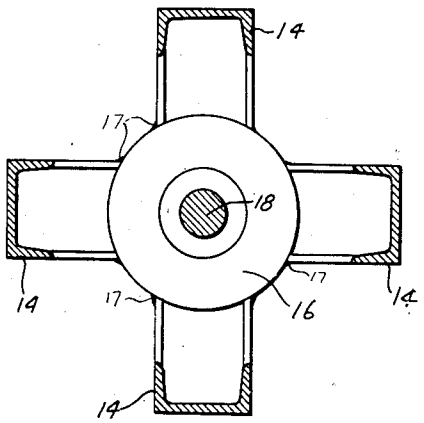


FIG. 3.

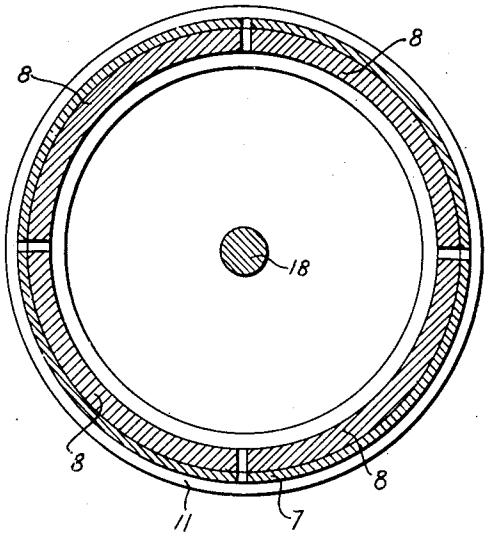


FIG. 4.

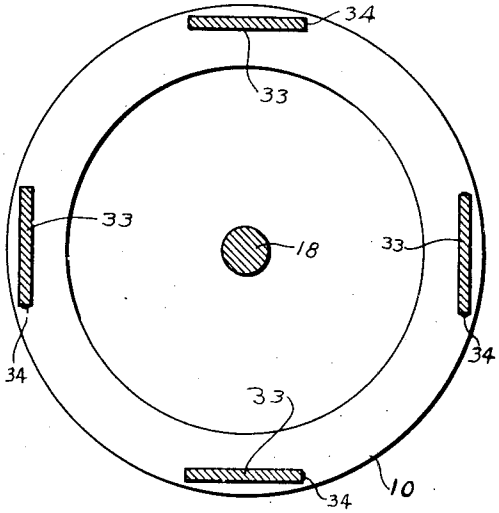
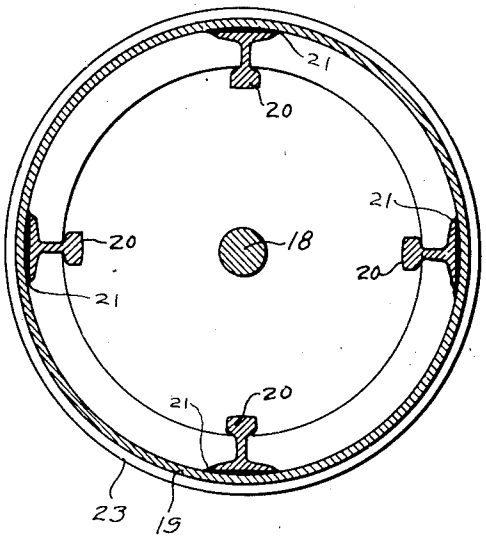


FIG. 5.



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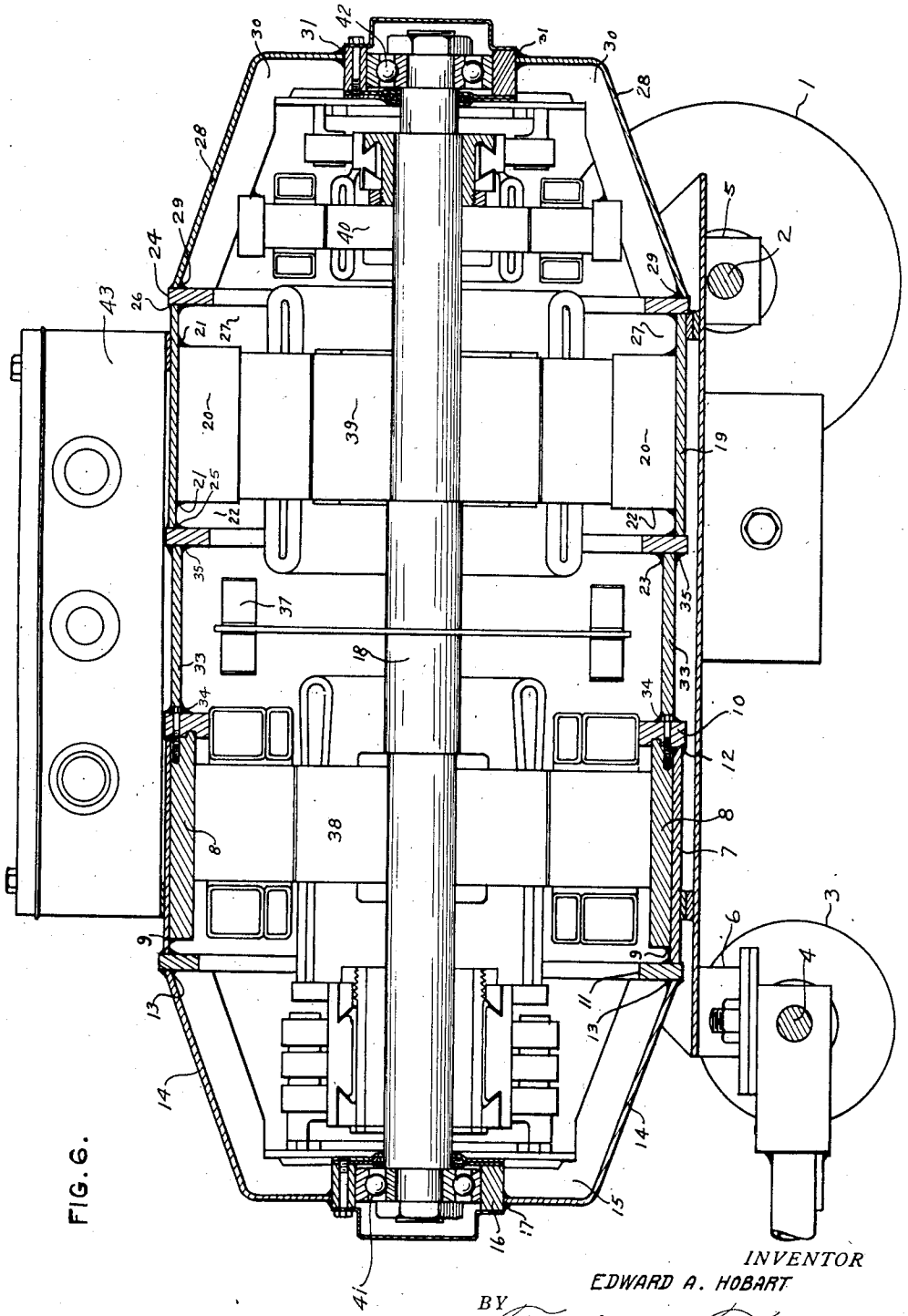


FIG. 6.

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1,825,064

UNITED STATES PATENT OFFICE

EDWARD A. HOBART, OF TROY, OHIO, ASSIGNOR TO THE HOBART BROS. CO., OF TROY, OHIO, A CORPORATION OF OHIO

ELECTRIC WELDER

Application filed July 19, 1929. Serial No. 379,374.

My invention relates to electric welders and in particular for the frames thereof.

It is the object of my invention to make an all steel frame for an electric welder, to eliminate the heavy cast iron frames heretofore made, and to permit of the assembly of the frame in successive sections, thereby economizing in weight while still maintaining magnetic qualities by reason of the construction of my frame. I correspondingly reduce cost. I eliminate all patterns and casting stocks. I utilize in the construction of my new frame bars and flats that can be obtained from any warehouse stock. I eliminate danger from broken castings in freight shipments.

It is a further object of my invention to provide in a single unitary housing a single armature shaft for the motor, generator and exciter, thereby eliminating the extra equipment heretofore necessary when exciters were mounted upon welders by bolts and other attaching means which required two shafts and three or more bearings.

It is another object of my invention to provide a single shaft with spaced bearings carried in the end frames of the welder frame-work.

It is the further object of my invention to provide the strength of a solid structure by having the rolled cylinder construction, the abutting flats rolled on edge and welded to the ends thereof, giving a T construction which makes a very rigid frame, while at the same time providing for a full ventilation of the entire structure by reason of the open frame-work which joins the two rolled steel cylinders.

The general construction is of the telescopic type with only one joint so that perfect alignment is maintained. Thus my object is accomplished of being able to chuck either half in a lathe and bore the bearing seat and stator housing or direct current yoke all at the same time, thereby insuring perfect alignment of these three parts. I then join the two halves of the structure in the middle, giving a perfect alignment from end to end.

It is my further object to provide for the separation of these two halves at the center and for the placing of a large diameter fan for ventilation at this point.

Referring to the drawings, Figure 1 is a section through the structure of the frame without the generator motor and exciter.

Figure 2 is a section on the line 2—2 of Figure 1.

Figure 3 is a section on the line 3—3 of Figure 1.

Figure 4 is a section on the line 4—4 of Figure 1.

Figure 5 is a section on the line 5—5 of Figure 1.

Figure 6 is a section through the completed apparatus showing the method of installation of the central ventilation fan, motor, generator and exciter.

Referring to the drawings in detail, 1 indicates the rear wheels mounted on the rear axle 2, and 3 the forward wheels mounted on the forward axle 4. Brackets 5 and 6 respectively support the rear and front ends of the welder frame hereinbefore described. The motor section is comprised of a rolled steel drum 7 in which is pressed a heavy steel ring 8, welded at 9 to the ring 7. This ring 7 has welded on either end thereof at right angles thereto the rings 10 and 11. The welds are indicated at 12. The rings 10 and 11 project beyond the periphery of the drum 7 and form with it a T-shaped structure.

On the ring 11 at equal points of the compass are welded as at 13 the inwardly converging channel irons 14 which are turned towards each other as at 15 and welded to a bearing support 16, as indicated at 17. This bearing support for the shaft 18 may be of any character, alternate constructions being indicated in Figures 1 and 6.

Turning to the right hand side of the machine where the generator and exciter are housed, I provide a rolled steel drum 19 on the interior of which there are mounted in spaced position rails 20 that are welded as at 21 to the interior of the drum 19. The ends 22 of these rails are spaced from the ends of the steel drum 19 and from the end

rings 23 and 24 which are welded thereto as at 25 and 26, my purpose being to provide a support for the generator stator but to leave spaces 27 for the free circulation of air for ventilation purposes.

Channel members 28 which inwardly converge are welded as at 28 to the ring 24 and have their inwardly extending ends 30 welded at 31 to the bearing 32 which supports the other end of the shaft 18.

The generator and motor halves are joined together by a plurality of spaced members 33 which are welded to the rings 10 and 23 at 34 and 35 respectively.

Spaces 36 are left between the plates 33 for the free circulation of air. This air is caused to circulate by the fan 37 which is mounted on the shaft 18 between the motor 38 and the generator 39.

The exciter is generally designated 40.

In Figure 6 ball bearings 41 and 42 are provided for supporting the shaft 18. The box for the control mechanism is mounted on the frame at 43.

It will be understood that I desire to comprehend within my invention and within the scope of my claims such modifications as may be fairly comprehended within such claims and invention due to necessary modifications to adapt my invention to varying conditions of use and to varying purposes.

Having thus fully described by invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a welder frame, in combination with an armature shaft, a drum generator section, a drum motor section, spaced bars interconnecting said sections and welded steel frames mounted on the opposite ends of said sections for supporting said armature shaft, a generator means, an exciter and a motor, all mounted upon such shaft within said frame.

2. In a welder frame, in combination with an armature shaft, a drum generator section, a drum motor section, spaced bars interconnecting said sections and welded steel frames mounted on the opposite ends of said sections for supporting said armature shaft, a generator means, an exciter and a motor, all mounted upon such shaft within said frame, and means to support the generator stator away from its drum section and the sides thereof to insure ventilation.

3. In a welder frame, in combination with an armature shaft, spaced steel drums, rings welded to the ends of said drums projecting on either side thereof, longitudinally disposed spaced bars welded at their ends to the adjacent rings and channel iron cage members welded to the other rings on said drums to form bearing supports for said armature shaft.

4. In a welder frame, in combination with an armature shaft, spaced steel drums, rings welded to the ends of said drums projecting on either side thereof, longitudinally disposed spaced bars welded at their ends to the adjacent rings and channel iron cage members welded to the other rings on said drums to form bearing supports for said armature shaft, said channel members having inwardly converging ends and bearing rings welded thereto for supporting said shaft.

5. In a welder frame, in combination with an armature shaft, spaced steel drums, rings welded to the ends of said drums projecting on either side thereof, longitudinally disposed spaced bars welded at their ends to the adjacent rings and channel iron cage members welded to the other rings on said drums to form bearing supports for said armature shaft, rails welded within the generator drum circle to the longitudinal axis thereof but spaced at the ends from the rings on the drum.

6. In a welder frame, in combination with an armature shaft, spaced steel drums, rings welded to the ends of said drums projecting on either side thereof, longitudinally disposed spaced bars welded at their ends to the adjacent rings and channel iron cage members welded to the other rings on said drums to form bearing supports for said armature shaft, rails welded within the generator drum circle to the longitudinal axis thereof, but spaced at the ends from the rings on the drum, and a steel stator ring for the motor mounted within the motor drum.

7. In a welder, a welded steel frame, a shaft mounted in bearings on either end thereof and a generator, motor and exciter utilizing said shaft as a common armature shaft, and all of which are mounted within said frame between the bearing supports for said shaft.

8. In a welder, a welded steel frame, a shaft mounted in bearings on either end thereof and a generator, motor and exciter utilizing said shaft as a common armature shaft, and all of which are mounted within said frame between the bearing supports for said shaft, said frame having openwork at either end and in the center thereof.

9. In a welder, a welded steel frame, a shaft mounted in bearings on either end thereof and a generator, motor and exciter utilizing said shaft as a common armature shaft, and all of which are mounted within said frame between the bearing supports for said shaft, said frame having openwork at either end and the center thereof, and a fan member mounted on the center of said armature shaft for circulating air through said frame.

10. In a welder frame, in combination with an armature shaft, spaced drum supports for a generator and a motor, an open framework welded thereto to connect said

drums, open framework on opposite ends of said drums welded thereto having bearings for supporting said armature shaft, and exciter, generator and motor mounted on said shaft, said exciter being mounted within one of the open end frameworks, and said motor and generator being mounted within said respective drums.

In testimony whereof, I affix my signature.

EDWARD A. HOBART.