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BRACKET FOR SUPPORTING TILTABLE CRUCIBLES OR CONVERTERS

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FIG. 1

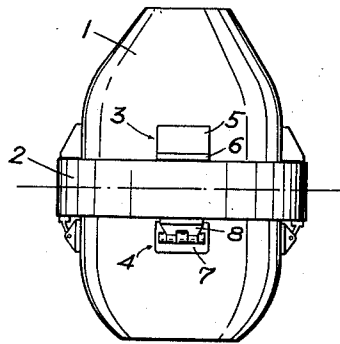


FIG. 2

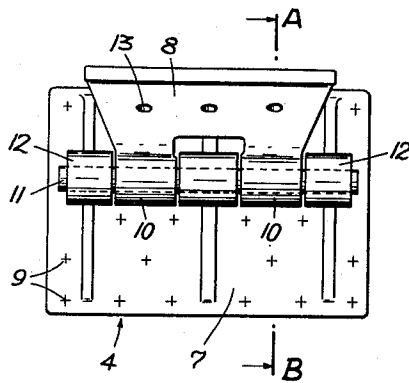
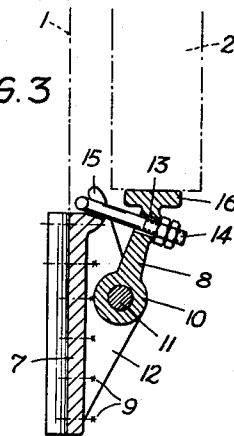


FIG. 3



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**BRACKET FOR SUPPORTING TILTABLE
CRUCIBLES OR CONVERTERS**

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A 7,812/61

3 Claims. (Cl. 266-36)

Tiltable crucibles or converters for refining crude iron consist of a cylindrical or pear-shaped vessel having a refractory lining. For supporting the crucible, a trunnion ring extends around the crucible shell approximately in the latitude of the center of gravity and is rigidly connected with two trunnions. The crucible must be tiltable from the approximately vertical blowing position into the upside-down discharging position and back into the upright position by means of electro-mechanical or hydraulic drive means acting on the trunnions. To this end, the crucible is mounted in the trunnion ring by means of a number of brackets, which are spaced around the periphery of the crucible shell and are preferably arranged in pairs. In the known constructions, these brackets consist of angular iron carriers, which are secured to the crucible shell with one flange or leg, and with the other flange or leg which protrudes from the crucible wall butt against the upper and lower faces of the trunnion ring.

With these known constructions it may occur that, during use, a clearance is formed between the bracket supports and the trunnion ring, as a result of heat expansion and warping. This may cause various difficulties and necessitates permanent control.

It is an object of the invention to avoid these disadvantages and difficulties; a special aim of the invention is to support the crucible so as to permit of a replacement and thus meet a desire frequently expressed by steel-producing enterprises.

The subject matter of this invention is a bracket for supporting tiltable crucibles or converters on a trunnion ring, which comprises a plate member secured to the crucible shell, and a flap member which is hingeably mounted on said plate member. All of the brackets of the crucible may be designed in the manner of the invention. In some cases, however, a crucible having rigid upper brackets and lower brackets designed as flap brackets is to be preferred.

With the bracket support according to the invention, the angular adjustment of the flap member relative to the plate member or to the crucible shell, respectively, is preferably variable, namely by means of screws, preferably hammer bolts, which are mounted with one end in an abutment of the plate and are passed through bores of the flap member with their other end. By tightening the screws, a load-transmitting connection is established between the crucible and the trunnion ring.

The construction according to the invention is illustrated in the accompanying drawing by way of an embodiment.

FIG. 1 is a showing of a crucible for carrying out surface-blowing processes, provided with rigid upper brackets and having lower brackets designed as flap brackets.

FIG. 2 is a front view of the supporting bracket on a larger scale, and

FIG. 3 is a sectional view along line A-B of FIG. 2. Trunnion ring 2 is mounted to surround the crucible

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1 approximately in the latitude of its center of gravity. Spaced around the periphery of the shell, a number of upper brackets 3 and lower brackets 4 are provided in pairs. The upper bracket consists of the conventional L-shaped angle type, the leg 5 being rigidly secured to the crucible wall and the protruding leg 6 resting against the trunnion ring 2 from above. The lower bracket consists of a plate member 7 rigidly connected with the crucible wall and of a flap member 8. The connection between the plate member and the crucible may be effected by means of a number of screws 9. The flap member 8 has an annular bearing lug 10 through which the shaft 11 passes. This shaft or axle 11 is mounted in cheeks 12 of the plate member 7. The flap member is provided with bores 13, through which tension screws, preferably hammer bolts 14, are passed; with their other ends these tension bolts 14 are mounted in an abutment 15 of the plate member of the bracket. As is obvious from the drawing, the angular adjustment of the flap member 8 can be varied by tightening the screws 14. Thus, by tightening the screws, a load-transmitting connection is accomplished between the crucible and the trunnion ring 2. The flap member has a T-shaped cross section, the cross beam 16 resting against the trunnion ring 2 from below.

The advantages of the construction according to the invention reside in that, owing to the pre-stressing of the screws, a load-transmitting connection between the carrying parts always is ensured. Any clearance which may arise in the bracket support can be quickly eliminated by tightening the nuts. With a suitable design of the trunnion ring there is the possibility of an easy relining of the crucible.

What I claim is:

1. A bracket for supporting tiltable crucibles or converters on a trunnion ring, comprising a plate member rigidly secured to the crucible shell, a flap member which is hingeably mounted on said plate member, for engaging the trunnion ring, and means for adjustably securing the flap member in a predetermined position in engagement with the trunnion ring to provide a load bearing connection.

2. A bracket for supporting tiltable crucibles or converters on a trunnion ring, comprising a plate member rigidly secured to the crucible shell and a flap member which is hingeably mounted on said plate member, for engaging the trunnion ring, the angular adjustment of said flap member relative to said plate member being variable by means of screws which are mounted in an abutment of the plate member with one end and with their other end are passed through bores of said flap member, to provide, by tightening the screws, for a load-transmitting connection between the crucible and the trunnion ring.

3. A bracket for supporting tiltable crucibles or converters on a trunnion ring, comprising a plate member rigidly secured to the crucible shell and a flap member which is hingeably mounted on said plate member, for engaging the trunnion ring, the angular adjustment of said flap member relative to said plate member being variable by means of hammer bolts which are mounted in an abutment of the plate member with one end and with their other end are passed through bores of said flap member, to provide, by tightening the bolts, for load-transmission between the crucible and the trunnion ring, said flap member having an approximately T-shaped cross section, the cross beam being destined for resting against

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the trunnion ring, and being provided with an annular bearing lug through which an axle which is mounted in cheeks of the plate member, is passed.

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JAMES H. TAYMAN, JR., *Examiner.*