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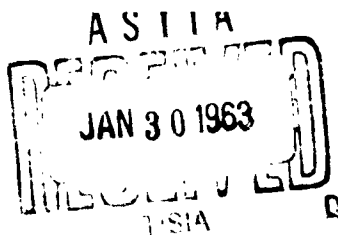
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A MAGNETIZABLE CERAMIC FLUX

By

V. P. Zvyagintsev



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# UNEDITED ROUGH DRAFT TRANSLATION

A MAGNETIZABLE CERAMIC FLUX

BY: V. P. Zvyagintsev

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## A MAGNETIZABLE CERAMIC FLUX

V. P. Zvyagintsev

Magnetizable ceramic fluxes for semi-automatic welding of low-carbon and low-alloy steels, for instance, fluxes of types FMK-NL and FMK-3, are well known. Type FMK-3 flux contains the following whole dry mixture weight percentages of the: electrode marble 40%, fluorspar 25%, ferromanganese 6%, ferrosilicon 9%, iron powder 20%, water glass 15%. When there is moisture or rust on the edges of the article to be welded, however, such fluxes are not effective enough.

Seven to nine percent of quartz and 7-9% ferrotitanium is added to the described flux to improve the weld quality in articles not moisture or rustfree. Owing to this, the metal fused on becomes denser, poreless, and free from gas bubbles. When metal fused with the described flux by means of an E 42 type electrode was physically tested it was ascertained that its ultimate strength was 49-52 kg/mm<sup>2</sup>; relative elongation, 30-33%; and impact toughness 13-16% kg/cm<sup>2</sup>; which is completely satisfactory.

Thus, the following components enter into the composition of the flux (parts by weight):

1. electrode marble 34-38

2. fluorspar	20-24
3. quartz	7- 9
4. ferrotitanium	7- 9
5. ferromanganese	4- 5
6. ferrosilicon	5- 7
7. iron powder, class OM or M, type A	18-22
8. water glass, class A, specific gravity 1.25 to 1.30	15% of weight of dry mixture

The described flux enables us to weld along moist metal edges with rust on the edges to be welded and with 15% hygroscopic moisture content in the flux without changing the technological properties of the flux or worsening the quality of the weld seams.

#### Subject of the Invention

A magnetizable ceramic flux containing electrode marble 34-38%, fluorspar 20-24%, ferromanganese 4-5%, ferrosilicon 5-7%, iron powder 18-22%, and water glass 15%, with this difference that, in order to improve the quality of the weld on articles contaminated by moisture or rust, there be introduced into it 7-9% of quartz and 7-9% of ferrotitanium.

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