

UNITED STATES PATENT OFFICE.

JOHN J. RIDDLE, OF MADISONVILLE, OHIO.

MOLDER'S FACING.

SPECIFICATION forming part of Letters Patent No. 335,628, dated February 9, 1886.

Application filed July 2, 1884. Renewed July 10, 1885. Serial No. 171,328. (No specimens.)

To all whom it may concern:

Be it known that I, JOHN J. RIDDLE, of Madisonville, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Molders' Facings, of which the following is a specification.

My invention is a molder's facing for molds made from sand or other suitable material to have the configuration of any desired pattern, for casting molten metals, such as iron, copper, brass, zinc, or other metals.

The desideratum of molders' facings is to produce the castings with a perfect impression, with as smooth a surface as possible, with the least work, and in the shortest period of time.

My facing is what molders term a "one-bag facing," needing neither lime as a foundation, nor any other material for the return-facing.

Molders now use, in making fine castings, lime for a foundation, and from two to five other different facing-coats. With all this work and care they cannot make as smooth and perfect castings as can be made with my one-bag facing herein described, for the reason that my invention does not stick or blow off, or is not floated up, does not wash off by the pouring of the molten metal, and is not in the least burned into or to the metal while in a liquid state.

By the use of this facing most of the surface of the metal castings comes out of the sand mold very clean, leaving on the castings but little of the facing, and that adheres so slightly that it is easily brushed off.

My molder's facing is composed of very finely-divided silica, oxide of calcium or quicklime, magnesia or baryta, oxide of iron or manganese, (the black oxide or sesquioxide of iron or manganese being preferred,) charcoal, and soda or potash, (the carbonate being preferred.) I also add common rosin, which has been made very deep in color and brittle, (in other words, rosin which has been converted into colophoric acid.) Its omission detracts but little from the usefulness of the facing. I find by repeated experiments that the materials mixed with the finely-divided silica have a wide range of proportions, owing to the fact that the heated metal converts these materials into artificial plumbago, and com-

bine with the silica and lime to form the facing.

One formula is as follows: one hundred parts of finely-divided silica; oxide of iron, from five to thirty parts; oxide of calcium, or quicklime, from five to fifteen parts; charcoal, ten to one hundred parts, well mixed, with about one-tenth as much soda or potash, with or without rosin in moderate quantity. This makes a facing which causes the castings to be very smooth and perfect. Hard or soft coal, well pulverized, may be successfully used instead of the charcoal and soda.

My preferred formula is: silica, finely divided, one hundred parts; black magnetic iron ore, blacksmiths' scales, brown hematite iron ore, sesquioxide of manganese, or black oxide of manganese, one hundred to one hundred and fifty parts, (I generally use one hundred and eighteen parts;) charcoal, forty parts, combined with soda, four parts; quicklime, ten to fifteen parts, (I generally use fifteen,) the whole to be pulverized and thoroughly mixed by mechanical means. The silica, iron, charcoal, and quicklime have a wide range of proportions, which are entirely practical.

The essential parts of my facing are oxide of iron and silica. The other parts are added as a finish. About one-half per cent. of rosin is preferably added, to give the facing a good body and cause it to adhere to the sand under heat.

I claim--

1. A molding-facing consisting, essentially, of silica and oxide of iron, substantially as described.

2. A molding facing consisting of silica, oxide of iron, carbon, and quicklime, substantially as described.

3. A molding-facing composed of silica, black oxide of iron, quicklime, charcoal, and soda, finely pulverized and mixed, substantially as described.

4. A molding-facing composed of silica, black oxide of iron, quicklime, rosin, charcoal, and soda, finely pulverized and mixed, substantially as described.

In testimony whereof I have hereunto set my hand.

JOHN J. RIDDLE.

Witnesses:

J. S. ROEBUCK, Jr.,
ROBERT ZAHNER.