

# UNITED STATES PATENT OFFICE.

PHILIP KEENAN, OF CHARTIER TOWNSHIP, ALLEGHENY COUNTY, AND  
EDWARD O'CONNOR, OF WEST PITTSBURG, PENNSYLVANIA.

## IMPROVEMENT IN PUDDLING-FURNACES.

Specification forming part of Letters Patent No. **50,937**, dated November 14, 1865; antedated  
August 26, 1865.

*To all whom it may concern:*

Be it known that we, PHILIP KEENAN, of Chartier township, and EDWARD O'CONNOR, of West Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Compounds for Preparing Puddling or Boiling Furnaces Used in the Manufacture of Iron; and we do hereby declare that the following is a full and exact description thereof.

The nature of our invention consists in the use of pulverized ore in combination with "German clay" or its equivalent, said ore and clay being used and compounded in the manner hereinafter described.

In preparing our compound for the puddling or boiling furnace we take a good ordinary iron ore and pulverize it into a powder so that its particles shall be about the size of ordinary gunpowder. We then take German clay, or clay such as is used in making crucibles for melting glass or steel, and pulverize it into a fine powder. We then take about fifteen parts of the pulverized ore and one part of the pulverized clay and mix the ore and clay well together, and then add sufficient water to make the whole mass into a thick tough paste, resembling dough for baking bread. We then prepare and "fix" the furnace in the usual

way, using the ordinary tools used for "fixing" and preparing puddling or boiling furnaces.

The advantages of our "fix" or compound over the ordinary fix are as follows: We can prepare or fix the furnace hot or cold. We can prepare and fix a furnace with our improved fix or compound in from ten to fifteen minutes. The ordinary fix and mode requires from three to six hours. We can start the furnace to work in fifteen minutes after being prepared with our fix or compound. The ordinary mode requires three to four hours firing of the furnace before it can be used for puddling or boiling. We avoid the use of scrap-iron. The old fix requires it. We save fuel, time, labor, and greatly expedite the whole process of puddling or boiling iron.

What we claim as of our invention is—

The use of the ingredients herein named when prepared and used in connection with puddling or boiling furnaces for the manufacture of iron, substantially as described, and for the purpose set forth.

PHILIP KEENAN.  
EDWARD O'CONNOR.

Witnesses:

JAMES J. JOHNSTON,  
ALEXANDER HAYS.