

No. 879,839.

PATENTED FEB. 18, 1908.

F. S. SANDERSON.

MECHANICAL ORE FEEDER FOR BLAST FURNACES.

APPLICATION FILED AUG. 9, 1906.

2 SHEETS—SHEET 1.

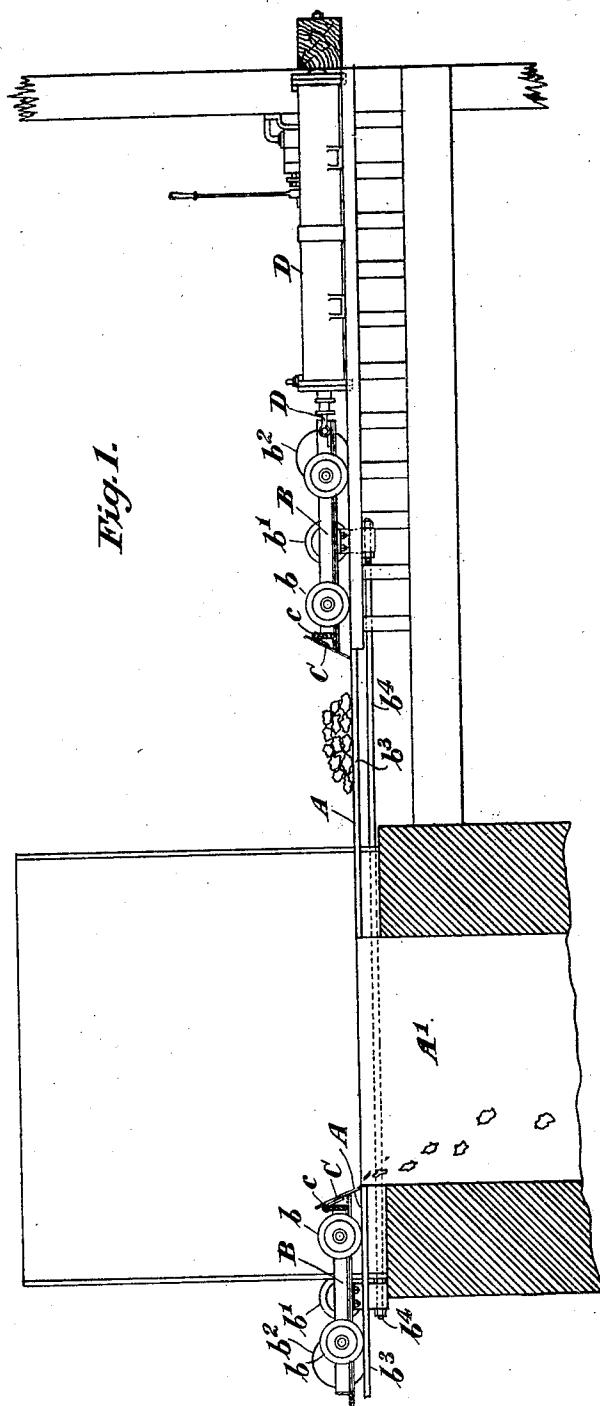


Fig. 1.

Witnesses:
Leonard W. Novander
Arthur H. Boettcher,

Inventor
Frederick Seaborne Sanderson
By Charles A. Brown
Attorney

No. 879,839.

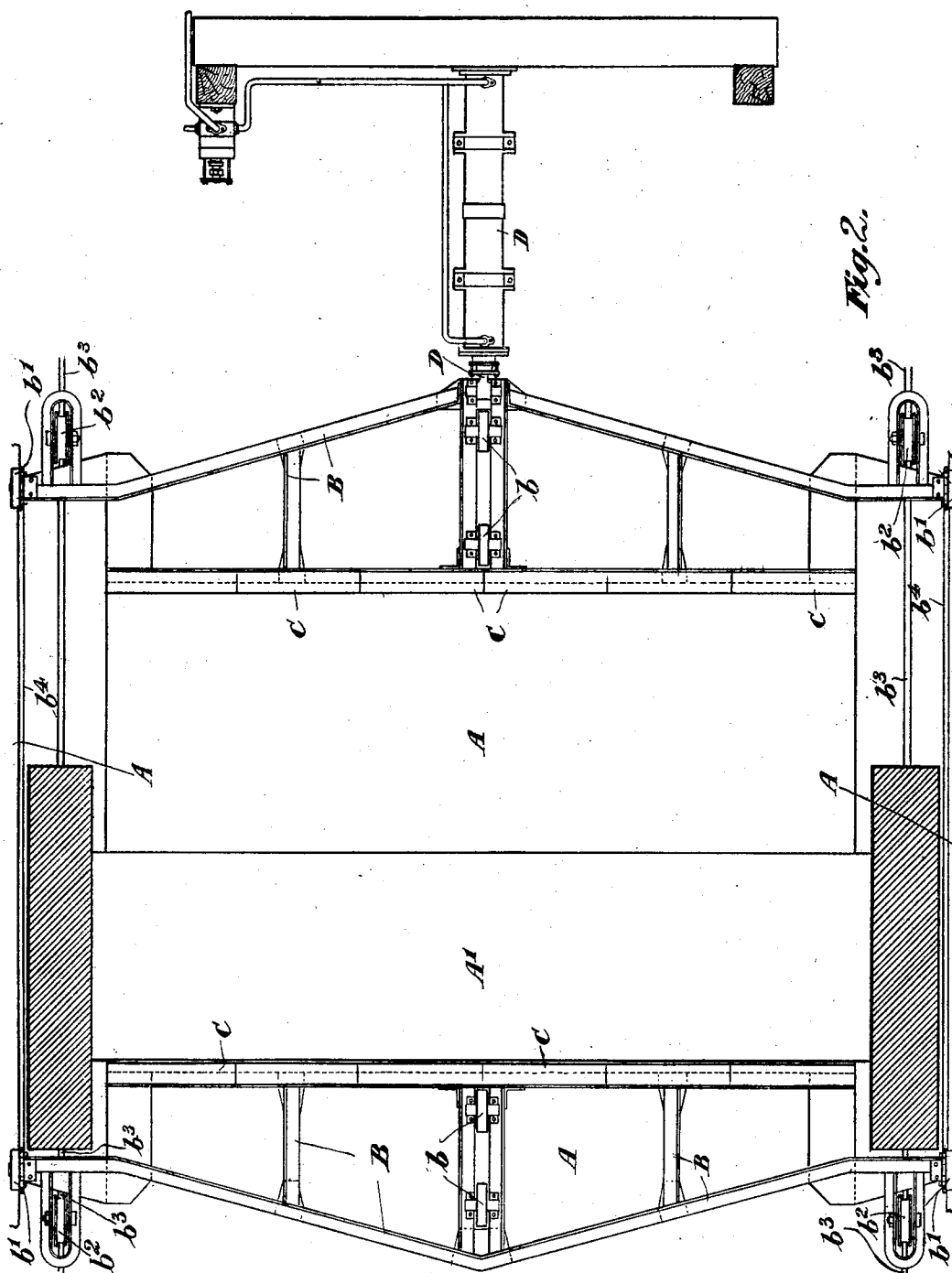
PATENTED FEB. 18, 1908.

F. S. SANDERSON.

MECHANICAL ORE FEEDER FOR BLAST FURNACES.

APPLICATION FILED AUG. 9, 1906.

2 SHEETS—SHEET 2.



Witnesses:
Leonard W. Novander.
Arthur H. Boettcher

Inventor
Frederick Seaborne Sanderson
By Charles A. Maw
Attorney

UNITED STATES PATENT OFFICE.

FREDERICK SEABORNE SANDERSON, OF QUEENSTOWN, TASMANIA, AUSTRALIA, ASSIGNOR
TO THE MOUNT LYELL MINING AND RAILWAY COMPANY LIMITED, OF MELBOURNE, AUSTRALIA.

MECHANICAL ORE-FEEDER FOR BLAST-FURNACES.

No. 879,839.

Specification of Letters Patent.

Patented Feb. 18, 1908.

Application filed August 9, 1906. Serial No. 329,812.

To all whom it may concern:

Be it known that I, FREDERICK SEABORNE SANDERSON, a subject of the King of Great Britain and Ireland, residing at Queenstown, State of Tasmania, Commonwealth of Australia, draftsman, have invented a new and useful Improved Mechanical Ore-Feeder for Blast-Furnaces, of which the following is a specification.

This invention relates to an improved mechanical ore feeder for blast furnaces; it consists of a series of plates or pushers or scrapers arranged in a line and hinged or otherwise supported at the front of a wheeled metal frame which is arranged in front of each furnace-opening, and said frame is pushed or pulled forward by such as a hydraulic ram along the surface of the charging floor in order that by the forward movement of said pushers, scrapers or plates, the ore or ore mixture lying on the charging floor will be shoved or thrust along and over into the furnace.

The apparatus has been designed mainly for feeding blast furnaces with, such as lead and copper ores.

The invention will now be fully described aided by a reference to the accompanying sheets of drawings in which:—

Figure 1 is a longitudinal sectional view of an ore feeder as arranged about a furnace and Fig. 2 a plan of same.

An apparatus embodying above described principle is constructed by assembling on the charging floor A of furnace a metal frame as B for each furnace opening, said frame being borne on wheels b and b^1 , and guide sheaves b^2 , and arranged with the front part of each lying parallel one on each side of the furnace opening. The guide sheaves b^2 for said frames run on rails b^3 sunk in the floor, while the supporting wheels $b—b^1$ run on the floor; further the frames B, when two are employed, are coupled together by tie rods b^4 which lie under the charging floor A. Each frame B is provided at its front with a line or series of hinged push plates or scrapers C, which are hinged at their back upper part at c to the frame B, and said line of push plates or scrapers extend across the space corresponding to the full width of the furnace opening A^1 , and thus said plates C form a metal wall which lies at suitable angle to, and just about touches, the charging floor A upon which the ore is delivered from the bins

in the usual manner. Said sliding frames B may be operated by such as a hydraulic ram D or by other suitable power, and when in motion the hinged plates C push, scrape or thrust the ore which is in front of them forward and into the furnace opening A^1 , and by said push or scraper plates C being hinged their lower edges on their return stroke will ride over any material which may have escaped being pushed forward into the furnace A^1 during the forward travel of the apparatus on that side.

By the sliding frames B being arranged one at each side of the furnace shaft A^1 it allows the line of plates C at one side of furnace to be feeding the ore into the shafts while the charging floor A at the other side of furnace will be clear to receive a further supply of ore.

It is to be understood that the construction of apparatus herein described may not be closely adhered to as other constructions of apparatus may be devised which will support and carry forward the line of hinged push or scraper plates C upon the charging floor A for feeding the ore to the furnace.

Having now described my invention what I claim as new and desire to secure by Letters Patent is:—

1. A mechanical ore feeder for blast furnaces consisting of a series of push plates or scrapers assembled in line one in front of each oppositely located furnace feed opening, each line of push plates being supported by hinges upon a frame borne on wheels which carry the said frame above the charging floor and about the furnace and the frame being capable of being worked to and from the furnace feed openings by aid of a hydraulic ram substantially as described and shown.

2. A mechanical ore feeder for blast furnaces, consisting of a series of push plates or scrapers assembled in line one in front of each oppositely located furnace feed opening, each line of pusher plates being supported upon a frame carried on wheels which convey said frame above the charging floor and about the furnace, and means for reciprocating said frame to and from the furnace feed opening.

3. A mechanical ore feeder for blast furnaces, consisting of a series of push plates or scrapers assembled in line one in front of each oppositely located furnace feed opening,

each line of pusher plates being supported upon a frame carried on wheels which convey said frame above the charging floor and about the furnace, said frame being adapted to be reciprocated to and from the furnace feed openings by the aid of hydraulic mechanism.

4. A mechanical ore feeder for furnaces, consisting of a series of push plates or scrapers assembled in parallel lines one in front of each oppositely located furnace opening, movable frames for suitably supporting said pusher plates, means for connecting together said frames, and mechanism for reciprocating said frames to and from the furnace feed openings.

5. A mechanical ore feeder for furnaces, consisting of push plates or scrapers assem-

bled in parallel lines one in front of each oppositely located furnace opening, said pusher plates being hinged to suitable movable frames, wheels attached to said movable frames for conveying said frames above the charging floor and about the furnace, tie rods connecting said frames together, and hydraulic mechanism for reciprocating said frames to and from the furnace feed openings.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FREDERICK SEABORNE SANDERSON.

Witnesses:

W. J. S. THOMPSON,

I. D. TIRTSCHKE.