

*J. Player,
Treating Slag.*

No. 103650.

Patented May. 31. 1870

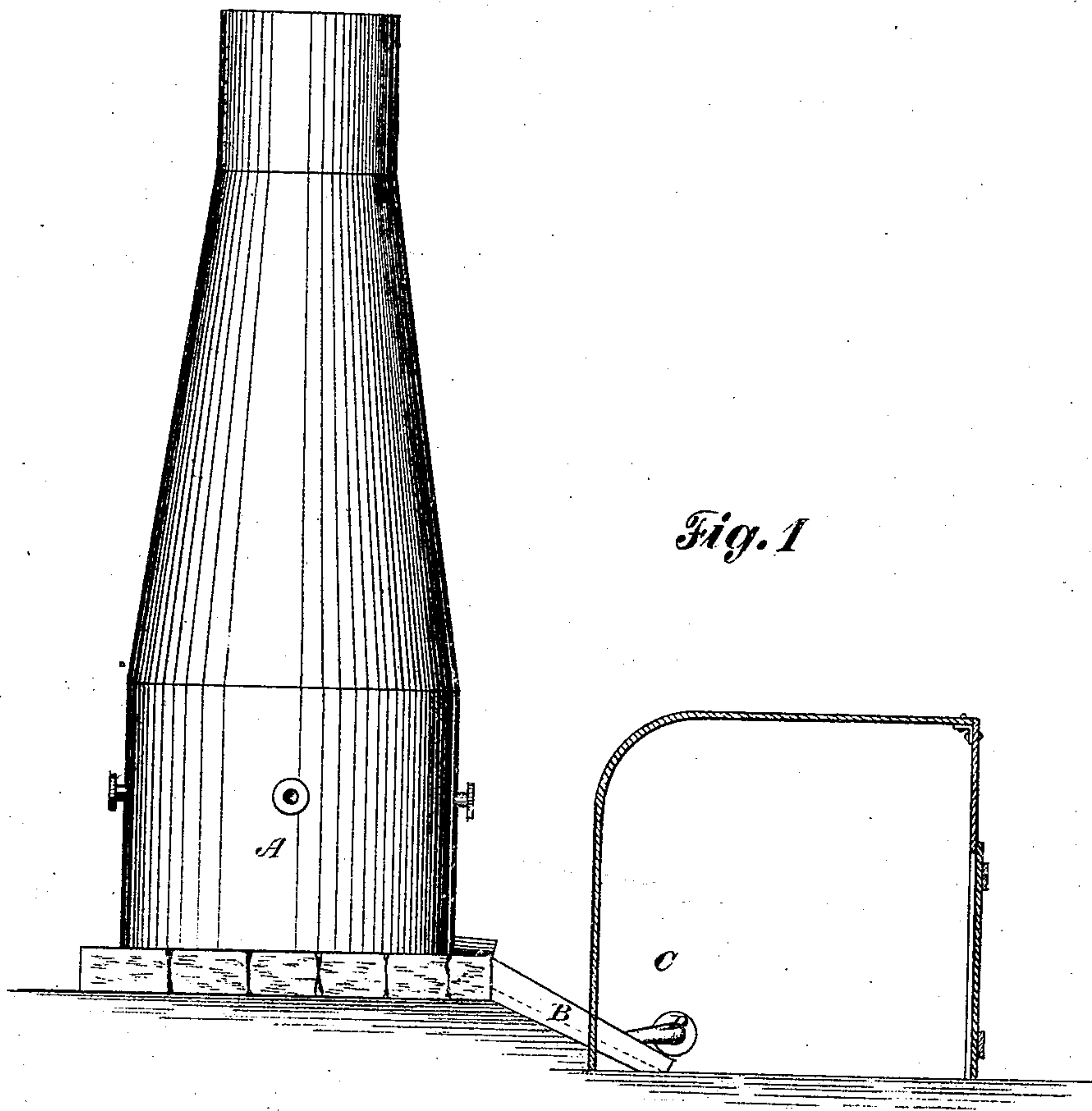
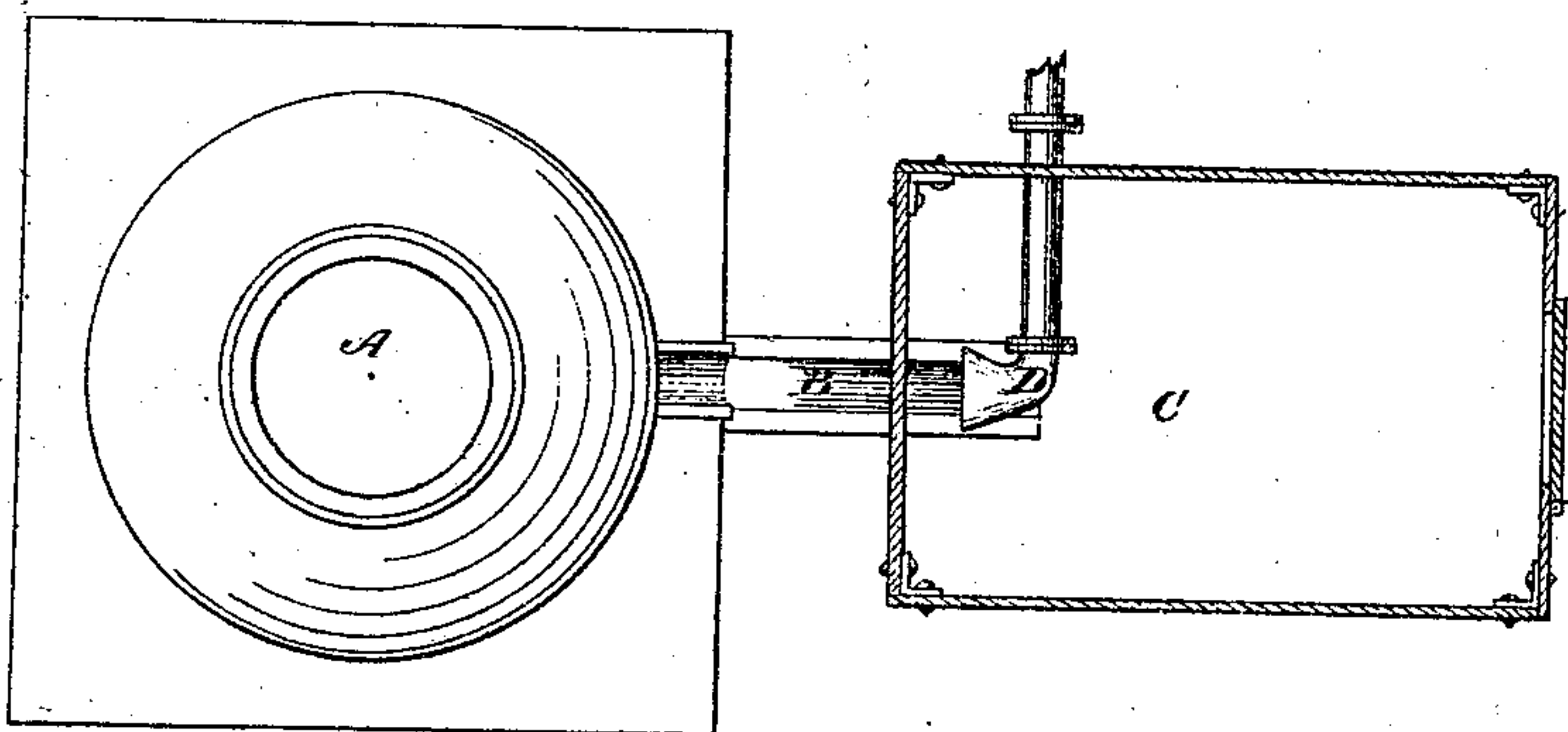


Fig. 1

Fig. 2



*Witnesses:-
Wm H. Rowe.
Joe S. Peyton.*

*Henry Baldwin, &
Atty for J. A. Player
& H. C. Allen
Administrators
of John Player
Inventor.*

UNITED STATES PATENT OFFICE.

AUGUSTA AMELIA PLAYER AND HENRY McALLISTER, JR., OF PHILADELPHIA,
PENNSYLVANIA, ADMINISTRATORS OF JOHN PLAYER, DECEASED.

IMPROVEMENT IN TREATING SLAG FROM IRON AND GLASS FURNACES FOR PRODUCING A USEFUL
MATERIAL.

Specification forming part of Letters Patent No. 103,650, dated May 31, 1870.

To all whom it may concern:

Be it known that JOHN PLAYER, deceased, sometime of Norton, near Stockton-on-Tees, in the county of Durham, in England, and a subject of the Kingdom of Great Britain, late of the city and county of Philadelphia, in the State of Pennsylvania, was in his lifetime the inventor or discoverer of a certain new and useful method of producing what he designated as vitreous fiber or mineral-wool from the slag of blast-furnaces, or other scoria or scoriaceous substances.

The abundance and cheapness of the ready-made vitrified material afforded by the vast waste of slag or scoria at blast-furnaces and glass-works will doubtless render it unnecessary to prepare scoriaceous substances expressly for this process; but, should it be deemed or found more economical or otherwise desirable, a mixture of silicious, calcareous, and other ingredients may readily be made and vitrified after various well-known formulæ.

From the slag or scoria, subjected to the process hereinafter described, is obtained a vitrified fibrous material, highly non-conducting, entirely incombustible, and very especially adapted to many uses, of which it may suffice to enumerate the covering or jacketing of steam-pipes, steam-boilers, hot-blast pipes, and the like; the lining of refrigerators, the filling of fire-proof safes, and other similar applications for preventing the transmission of heat or arresting the spread of fire.

This material may be used in bulk, or formed into sheets or pads, in the same manner as hair, felt, or cotton wadding is formed, or it may be spun into rope or yarn and applied in various ways that are obvious.

The invention consists in melting slag, scoria, or scoriaceous substances in a cupola or furnace of any ordinary construction, adapted to the purpose, and from which a suitable conduit is provided, so that the melted mass may be allowed to flow from the cupola or furnace in a small stream. Upon this flowing mass a stream or blast of air—by preference, a hot blast—is directed by any suitable device, and this blast of air, acting upon the flowing slag, separates or subdivides it into exceedingly fine filaments or fibers, which are blown off into and retained in a suitable

chamber or room provided over the blast. From this receptacle it may be removed to be packed, or for use.

Instead of a blast of air, or hot air alone, a jet of air and steam, or of steam alone, either ordinary or superheated, may be directed upon the flowing slag, without affecting the result otherwise than, perhaps, in degree.

The annexed drawing will show the form of apparatus which the said JOHN PLAYER had devised for the conduct of this process.

Figure 1 is an elevation of a furnace with the chamber for receiving the mineral-wool in section; Fig. 2, a plan with the chamber in section.

The blast of air or jet or steam, or of air and steam, may be obtained or derived from a fan, or from a boiler and fan, or in any other well-known way.

The slag or scoria is melted or produced in a suitable furnace, A, and flows down an inclined hearth, B, into a chamber, C, where it is exposed to a blast or jet from a pipe, or nozzle, or tuyere, D. The fibrous material produced by the blast, being very light, is blown against the wall of the chamber next the furnace, and deflected into the chamber behind the blast-pipe, where it accumulates until removed.

It is obvious that the blast or jet might be applied to the slag as it runs from an ordinary blast-furnace, and thus save the reheating of the slag, and this would, perhaps, constitute the simplest application of the invention.

The apparatus above described, however, forms no part of the subject-matter herein claimed, as the same may be varied at the dictates of convenience or economy; but

What is claimed herein, as the invention of the said JOHN PLAYER, is—

The method, hereinbefore set forth, of producing mineral-wool or vitreous fiber by subjecting a stream of melted slag or scoria to a blast or jet, substantially in the manner herein described.

AUGUSTA AMELIA PLAYER,
HENRY McALLISTER, JR.,

Administrators of John Player, deceased.

In presence of—

WM. B. DAYTON,
J. SNOWDEN BELL,