

UNITED STATES PATENT OFFICE

WILLIAM NELSON REDDOUT, OF RUSHVILLE, NEW YORK, ASSIGNOR TO
ARTHUR B. BURTIS, OF CLEVELAND, OHIO, AND FRANK HAMMOND, OF
PHELPS, NEW YORK.

CORE FOR CASTING.

SPECIFICATION forming part of Letters Patent No. 418,750, dated January 7, 1890.

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To all whom it may concern:

Be it known that I, WILLIAM NELSON REDDOUT, a citizen of the United States of America, residing at Rushville, in the county of Yates and State of New York, have invented certain new and useful Improvements in Cores for Casting, of which the following is a specification.

My invention relates to the manufacture of
10 cores for producing castings with cavities, orifices, depressions, &c.

The object of my invention is to obtain a core, either solid or hollow, of a permanent or indestructible character—that is to say, a
15 core which can be readily drawn without injury thereto, and can be repeatedly used, and one which will give to the casting a finished surface, that facilitates the drawing of the core and precludes the necessity for subsequent reaming or dressing, and which leaves
20 the metal of the casting in a condition to be easily tapped or dressed if the same is desired.

To this end the invention, generally stated, consists in a core composed of asbestos without admixture of other matter, whereby
25 a dense, polished, uniform, refractory, non-sealing or non-shelling, non-cracking, permanent core is produced.

Heretofore, so far as I am aware, asbestos,
30 wherever employed in this character of devices, has been used largely as a binder to hold together frangible or friable material mixed therewith—such as graphite, kaolin, clay, mica, and like refractory material—and
35 with a cement—such as shellac, pitch, silicate of soda, or its equivalent—the whole mass being molded or dried, either with or without pressure, and productive of what may be termed a “composition” or “combination”
40 core. In the first place, such cores are not what I term “permanent” cores, as they are destroyed in their removal from the casting and cannot be repeatedly used; they are durable only in the sense that they will
45 stand the pressure of the molten metal in the operation of casting; secondly, being of two or more different materials, they are unequally affected by the molten metal, and will warp, crack, and sheli, leaving the metal of differ-

ent character at different points and the
50 casting as rough and unfinished as the old and well-known sand cores, necessitating first the destruction of the core for its removal, and after that the reaming or dressing of the casting. Such cores cannot be drawn so as to
55 remain in condition for further use—first, owing to their composition, and, second, owing to the character of the casting.

I do not claim composition or combination cores of the class or character specified of
60 which asbestos is only an element.

Having thus indicated and acknowledged what has heretofore been done, I will now proceed to describe specifically the best manner
known to me of applying my invention.

I take the asbestos first as it is mined, selecting by preference that which is most free from admixture with silica, lime, or other extraneous matter, as the less foreign matter
present the better will be the result. The
70 asbestos is shredded or reduced to a fine flocculent mass, and, if desired, may be washed and purified by any of the several well-known methods. It is then reduced to
an adhesive condition or slightly plastic
75 mass by adding thereto a vehicle which can be readily expelled therefrom—such as water or linseed-oil—and is subject to high pressure (preferably hydrostatic pressure) in a suitable mold, and, preferably while under pressure,
80 it is subjected to heat sufficient to expel the water, linseed-oil, or other vehicle used to render the mass plastic, or to expel as much as possible thereof and reduce the rest to an
innocuous matter, which will constitute a very
85 insignificant and inappreciable portion of the core, leaving the core for all practical purposes with exterior surfaces of pure asbestos.

A core produced substantially or entirely of the material as herein specified will have
90 a perfectly hard smooth surface, and its density or compactness will depend to a certain extent on the amount of pressure exerted in its formation. Its surface, being of the same smooth and uniform finish as metal,
95 will impart a like surface to the casting, which enables the core to be readily drawn and leaves it (the core) in condition for repeated

use. Unlike composition cores, it will not
scale, shrink, or crack, and therefore, if care
has been taken in forming the core, the cast-
ing, when the core is drawn, is ready for im-
5 mediate use, as the cavity therein is perfect
and smooth and an exact reproduction of the
core; hence there is great saving of time and
labor, not only in the repeated use of the core,
but also in the reduction of labor required in
10 fitting or finishing up the casting. Further-
more, while capable of and possessing the
smooth surface of a metal core, it is unlike
metal, sand, or composition cores, in that it
does not harden or otherwise affect the char-
15 acter of the metal cast, leaving the surface
which was in contact with the core uniformly
smooth, tough, and soft throughout and
readily workable—a great advantage if tap-
ping, reaming, boring, or subsequent treat-
20 ment of the casting is desired.

The invention as above described is ap-
plicable to the manufacture of any shape or

character of cores desired, whether solid or
partible, and can be readily applied by the
skilled core-maker without other instruction 2;
than that given.

Having thus described the nature and ad-
vantages of my invention, what I claim, and
desire to secure by Letters Patent, is—

1. A core for casting, said core having a 30
smooth hard exterior surface composed en-
tirely of asbestos, substantially as specified.

2. A core for casting, said core having a
smooth dense surface of a polished, uniform,
non-scaling character, composed entirely of 35
condensed and compacted asbestos, substan-
tially as and for the purposes specified.

In testimony whereof I affix my signature in
presence of two witnesses.

WILLIAM NELSON REDDOUT.

Witnesses:

S. S. CATLIN,

W. M. TAYLOR.