

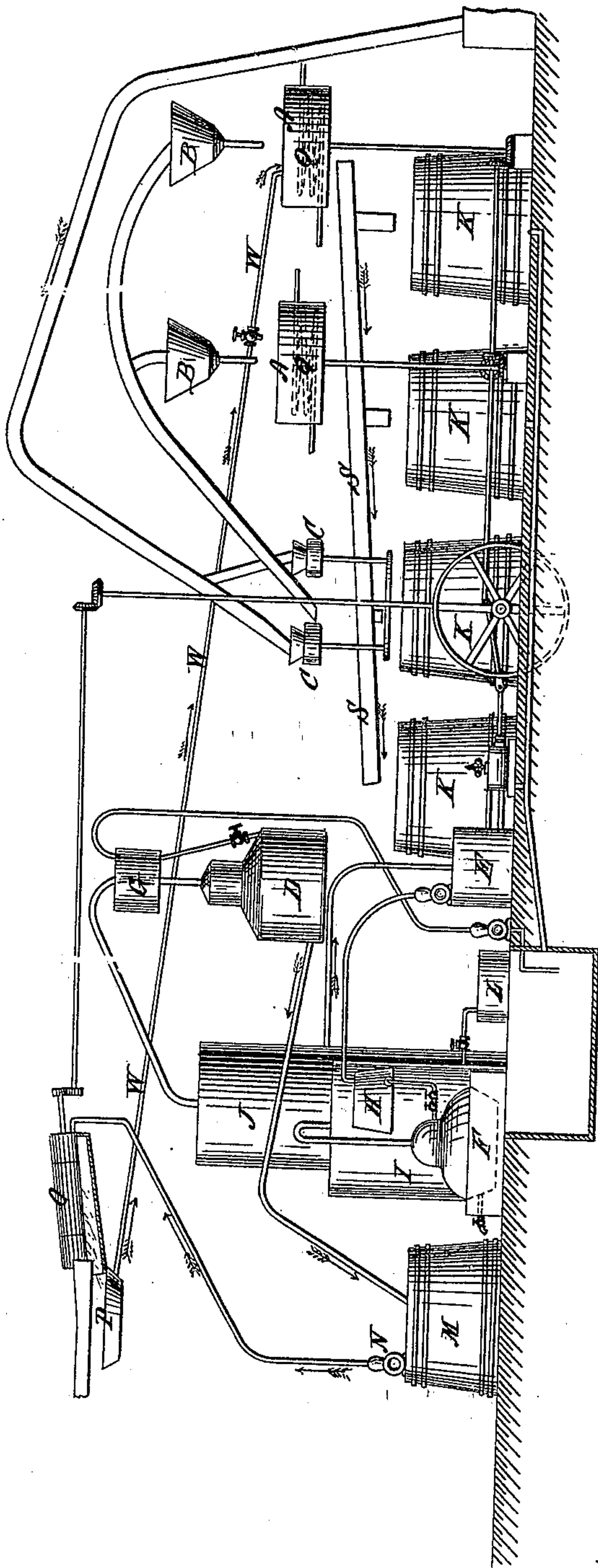
(No Model.)

M. J. ALLEN & W. E. BRADLEY.

PROCESS OF MAKING WHISKY.

No. 335,267.

Patented Feb. 2, 1886.



Witnesses:
Geo. H. Mott
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Inventor.
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UNITED STATES PATENT OFFICE.

MARSHALL J. ALLEN, OF NEW YORK, N. Y., AND WILLIAM E. BRADLEY,
OF FRANKFORT, KENTUCKY, ASSIGNORS TO THE FRANKFORT WHISKY
PROCESS COMPANY.

PROCESS OF MAKING WHISKY.

SPECIFICATION forming part of Letters Patent No. 335,267, dated February 2, 1886.

Application filed February 20, 1885. Serial No. 156,569. (No model.)

To all whom it may concern:

Be it known that we, MARSHALL J. ALLEN,
of the city, county, and State of New York,
and WILLIAM E. BRADLEY, of the city of
5 Frankfort, county of Franklin, State of Ken-
tucky, have invented a new and useful Im-
provement in the Process of Making Whisky,
of which the following is a full, true, and ex-
act description, reference being had to the ac-
10 companying drawing.

The object of our invention is to increase
the yield of whisky from a given amount of
grain by utilizing, in subsequent processes, the
refuse products of previous processes.

15 In all those methods of making whisky in
which the entire grain introduced passes
through the entire process, and is delivered as
a refuse product at the end of the operation,
it has been generally customary, except in fol-
20 lowing the processes previously patented to
us, to reject the spent beer or slop, which con-
tains very valuable ingredients, at the end of
the operation. Among the reasons why this
has been done is, first, because, if the slop is
25 returned in subsequent processes, containing
all the chaff or coarse particles blown out with
it, the process will not be possible of continu-
ous operation, because of the continually-in-
creasing thickness of the beer. On the other
30 hand, if the slop is allowed to stand, as has
been at times customary, so as to be cooled by
the action of the air, it will be found that at
the end of that period it has become contami-
nated with certain classes of ferments which
35 are injurious to its subsequent use in processes
of whisky-making.

We have heretofore taken patents for im-
provements in the art of whisky-making on
the 6th day of July, 1880, No. 259,653, and
40 on the 22d day of August, 1882, No. 263,087,
and on the 23d day of October, 1883, No.
287,213. In these patents we have pointed
out the difficulties arising from allowing the
spent beer to stand so long as to become con-
45 taminated, as above mentioned, and have
pointed out a method of preventing these evil
results by cooling the spent beer by apparatus
independent of the apparatus used in the pro-
cess of whisky-making.

50 The present process is an improvement upon

the process which is particularly pointed out
in Patent No. 263,087, August 22, 1882.

In the process of making whisky or high-
wines, after the grain has been mashed at a
high temperature it is customary to cool the 55
mash to a temperature between 70° and 80°. We
have discovered that this temperature is
a suitable one to which to reduce the slop, to
prevent the formation of injurious ferments,
to which reference has been made. 60

In carrying out this process practically, we
are not compelled to add to the ordinary ap-
paratus of a distillery any especial cooling-
coils or any other apparatus, except the neces-
sary means for insuring a separation of the 65
coarse particles from the spent beer or slop.

The sheet of drawings hereto annexed rep-
resents a general view of a part of a distillery
arranged for the practice of our improved pro-
cess. We do not limit ourselves, however, to 70
the special apparatus for carrying out the pro-
cess, but show one form of apparatus by which
it may be carried into effect.

We shall not go into detail in the descrip-
tion of this apparatus, as the arrangement 75
will be easily understood by those acquainted
in the art.

The drawing represents a side view of the
apparatus, in which A represents the mash-
tubs. These are provided with cooling-coils 80
Q, through which cold water is passed. These
coils may be arranged in any convenient way,
or the mash may be cooled in apparatus inde-
pendent of the mash-tub without changing
our invention; B, the mill-hoppers; C, the mill- 85
stones; D, the beer-still; E, low-wines receiv-
er; F, doubler-still; G, beer heater and charger;
H, low-wines charger for doubling-still; I,
doubling-still, condenser, and flake-stand; J,
beer-still; K, fermenting-vats; L, whisky-re- 90
ceiver; M, hot-slop or spent-beer receiver;
N, hot-slop pump for forcing slop up to strain-
er; O, slop-strainer; P, strained-slop receiv-
er; S, trough for conveying mash to ferment-
ers; W, pipe for hot-strained slop for mashing. 95

The movement of the liquid through the
pipes is indicated by the arrows.

It will of course be understood that the pres-
ent drawing does not represent all the appa-
ratus of a distillery, but only so much of it as 100

is used in connection with our improved process.

In carrying out our process practically, we proceed as follows: The slop or spent beer, as it is blown from the still, is run through a straining apparatus, similar to the bolting-machine in a flour-mill, provided with a copper-wire straining cloth of about thirty wires to the inch. The thick portion strained out is rejected, and may be used as feed for cattle. The liquid portion is run by the pipe *w* to the mash-tubs A A, where it is used with or without the addition of hot water in scalding the mash. The mash having been completed, the said mash and the returned slop are cooled by means of a suitable cooling apparatus to a temperature low enough to interfere with the formation of the injurious ferments to which we have referred, and to practically preserve it in a sweet and uncontaminated condition.

The temperature should be reduced to preferably about 76°, but in any event below 85°. The subsequent processes may be of any of the well-known kinds used in the making of whisky or high-wines, the object of our invention being to remove the coarse particles from the slop and to cool the slop before fermenting in the process of whisky-making, so as to interfere with the formation of the injurious ferments to which we have referred.

It is obvious that we are not limited to any particular apparatus in carrying out this process, though we show a strainer as a suitable means for separating the coarse particles, which is the best means known to us. We may employ any other means by which that result can be accomplished. We may, for instance, separate the coarse particles by gravity instead of by a strainer. It is obvious, likewise, that we can omit the separation of the coarse particles altogether without losing all the beneficial results of our process; but we then find

the difficulty of the clogging of the process, to which we have previously referred. The cooling of the slop, which we use back, is, however, absolutely essential in our process, and cannot be omitted, and in this process is first artificially done in connection with the mash. "Using back," occurring in this specification, means the return into the subsequent processes of the material which has passed through previous processes.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In the manufacture of whisky, the process described, which consists in using back the slop in the mash-tubs, and in artificially cooling this slop for the first time by mechanical means, together with the mash, before fermentation, substantially as described.

2. In the manufacture of whisky, the process described, which consists in separating the coarse particles from the spent beer, and in using back said slop in the mash-tubs, and in artificially cooling this slop for the first time by mechanical means, together with the mash, before fermentation, substantially as described.

3. In the manufacture of whisky, the process described, which consists in mechanically separating the coarse particles from the spent beer, and in using back said slop in the mash-tubs, and in artificially cooling this slop for the first time by mechanical means, together with the mash, before fermentation, substantially as described.

MARSHALL J. ALLEN.
WILLIAM E. BRADLEY.

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