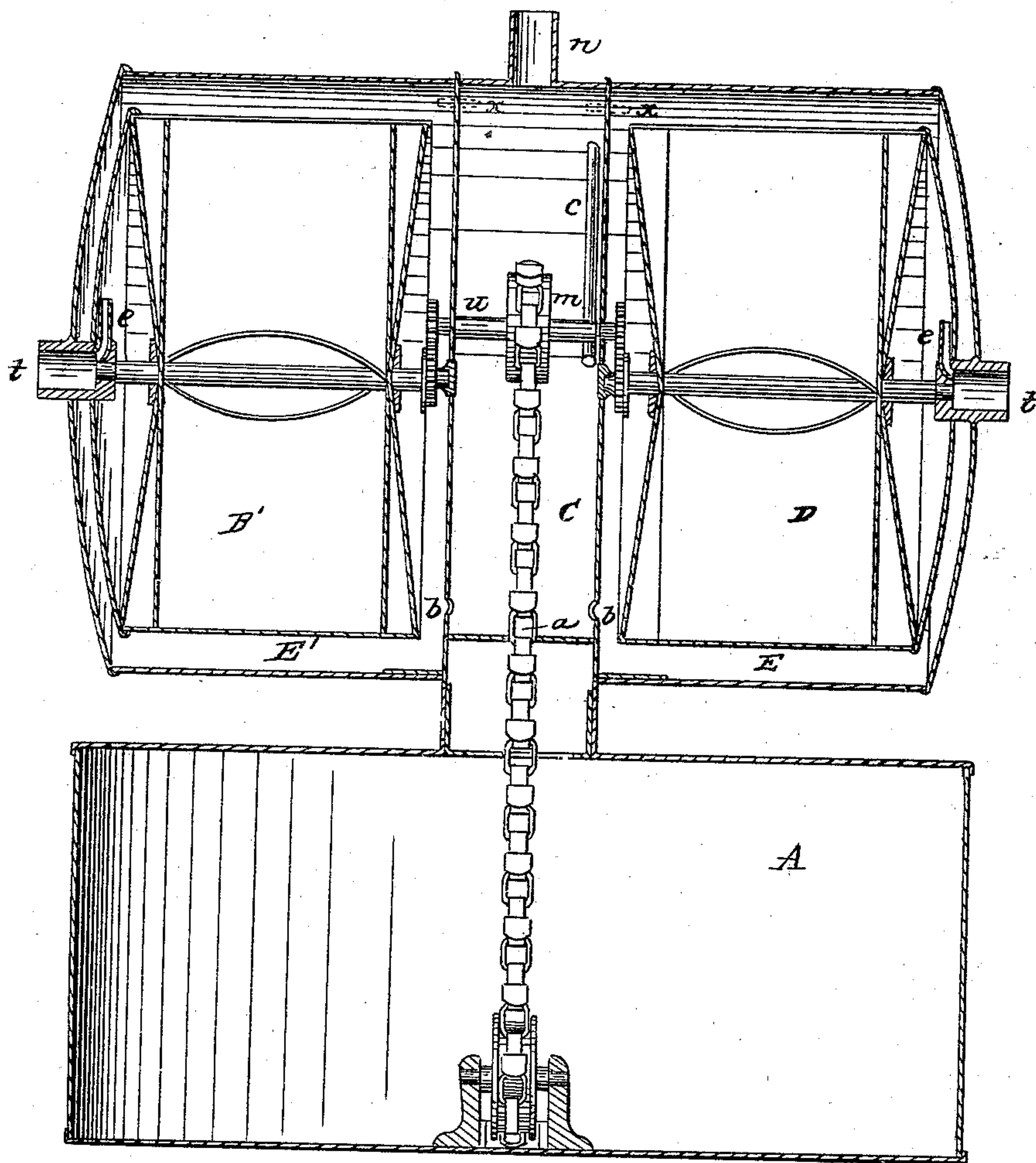


L. STEVENS.

Treating Gas for Illuminating and other Purposes.

No. 56,116.

Patented July 3, 1866.



Witnesses
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Inventor
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UNITED STATES PATENT OFFICE.

LEVI STEVENS, OF FITCHBURG, MASSACHUSETTS.

IMPROVEMENT IN TREATING GAS FOR ILLUMINATION AND OTHER PURPOSES.

Specification forming part of Letters Patent No. 56,116, dated July 3, 1866.

To all whom it may concern:

Be it known that I, LEVI STEVENS, of Fitchburg, in the county of Worcester and State of Massachusetts, have invented a new and useful Machine for Improving Inflammable Gas by Combining Atmospheric Air with Illuminating Coal-Gas, such as is used for lighting streets, after the atmospheric air has been carbonized and the illuminating-gas supercarbonized by being brought in contact with hydrocarbon, as gasoline or coal-oil of suitable quality; and I do declare that the following is a full and exact description thereof, reference being had to the accompanying drawing, and to the letters of reference marked thereon, said drawing making a part of this specification.

The drawing represents a vertical section of the machine, in which A is a reservoir for receiving the gasoline or other hydrocarbon. *a* is a chain-elevator, with buckets attached for raising the hydrocarbon from the reservoir A and emptying it into the receiver C, from which it flows through apertures *b b* into the outer cases of two common gas-meter wheels, E and E'.

The reservoir A extends to the top of the machine, while the receiver C extends only to a line a little above the axes of the meter-wheels B and B', and hence the hydrocarbon in the cases E and E' cannot rise higher than the top of the receiver C.

The tube *c* is designed for the passage of hydrocarbon into the reservoir A.

Common illuminating-gas is introduced by proper connections into the orifice *t*, and thence through the tube *e* into the meter-wheel B'. The pressure of the gas is sufficient to set in motion the wheel B', the lower half of which revolves in hydrocarbon in the case E', while the upper half of the case E' will be filled with the gas, which, by contact with the hydrocarbon, becomes supercarbonized.

The shaft of the meter-wheel B' is connected by proper gearing with the shaft *u*, which carries the sprocket-wheel *m*, over which the endless-chain elevator *a* passes.

The shaft *u* is connected by proper gearing with the shaft of the meter-wheel B, which is thus moved by the power of the gas introduced into the meter-wheel B', but in the opposite direction. Consequently the office of the meter-wheel B is to draw in atmospheric air through the orifice *t'*, which is delivered

through the tube *e'* into the upper part of the case E. The lower half of the case E being filled with gasoline or other hydrocarbon, the air in the upper part of the case E is in a degree carbonized.

The red lines *x* and *x'* represent two tubes, through one of which the carbonized air, and through the other the supercarbonized gas, passes into the upper part of the reservoir A, where the gas and carbonized air are mixed.

The tube *n* represents the delivery-pipe for the distribution of gas to the burners.

By this invention the quality of illuminating-gas is greatly improved and its cost diminished.

The chain-elevator *a* is the same substantially as the chain-elevator described by me in my application for a patent January 12, 1865.

The gas-meter wheel has been long known and is in common use, and for the purposes herein described the meter-wheels may be propelled by weights or other power instead of gas.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of two or more gas-meter wheels propelled by gas or other power, for the purpose of carbonizing atmospheric air and supercarbonizing ordinary illuminating coal-gas, so that when combined and mixed the whole will become an illuminating-gas, substantially in the manner and for the purposes described.

2. The combination of two or more gas-meter wheels propelled by gas or other power with a chain-elevator, and all with a tank or reservoir for holding hydrocarbon and for receiving and mixing supercarbonized gas and carbonized atmospheric air for the production of an illuminating-gas, in the manner and for the purposes described.

3. The combination of two or more gas-meter wheels propelled by gas or other power with a chain-elevator, *a*, and the receiver C, and all with the reservoir A, in such manner that the gasoline or other hydrocarbon may be kept at the desired height in the cases of the gas-meter wheels, in the manner and for the purposes described.

LEVI STEVENS.

Witnesses:

GEO. S. BOUTWELL,
EDM. F. BROWN.