

UNITED STATES PATENT OFFICE.

CHARLES C. MENGEL, SR., OF BAY CITY, MICHIGAN.

PROCESS OF REFINING PETROLEUM AND ANALOGOUS OILS.

SPECIFICATION forming part of Letters Patent No. 465,703, dated December 22, 1891.

Application filed January 24, 1889. Serial No. 297,407. (No specimens.)

To all whom it may concern:

Be it known that I, CHARLES C. MENGEL, Sr., a citizen of the United States, residing at Bay City, in the county of Bay and State of Michigan, have invented certain new and useful Improvements in Processes of Refining Petroleum and Analogous Oils, of which the following is a specification.

This invention relates to new and useful improvements in the process of refining petroleum and analogous oils, all as more fully hereinafter described, and specifically set forth in the claim.

My process is used in connection with the ordinary process of refining petroleum by distillation; and it consists in introducing into the still or goose-neck during the process of distillation carbonic-acid gas, either pure or mixed with air or nitrogen, as when obtained by using the products of combustion of coal, coke, natural gas, or other fuel. These gases I introduce in a heated condition at a temperature corresponding to the distilling-point of petroleum, and, if necessary, I use suitable mechanical means—such as a pump or injector—to force sufficient quantities of such gases into the still to mix with the vapors of the petroleum or other oils. Simultaneously with the introduction of such gases into the still I retort the condensation by carrying the mixture of gases and vapors through pipes, boxes, or other suitable conduits of sufficient length to heat the same to a suitable temperature to

prevent condensation, and give the gases and vapors ample time to become thoroughly mixed, which is necessary to produce the desired effect, the vapors being then carried through a condenser, as in the usual manner, and the gases allowed to escape. Where the carbonic-acid gas is generated, the necessary pressure is readily obtained to force it into the still; or in using the products of combustion the same have to be washed before using to free them from mechanical impurities and introduced into the still in sufficiently large quantities by mechanical means. My process of refining also improves the color of the refined oil.

What I claim as my invention is—

The herein-described process of refining petroleum and analogous oils, consisting in vaporizing the oils, introducing into the vapor previously-washed carbonic-acid gas under pressure and in a heated state, conducting the mixture into extended pipes, subjecting the same to additional heat, and discharging the mixture into a condenser, substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses, this 8th day of January, 1889.

CHAS. C. MENGEL, SR.

Witnesses:

J. PAUL MAYER,
P. M. HULBERT.