A. ZINDLER.

MANUFACTURE OF GAS.

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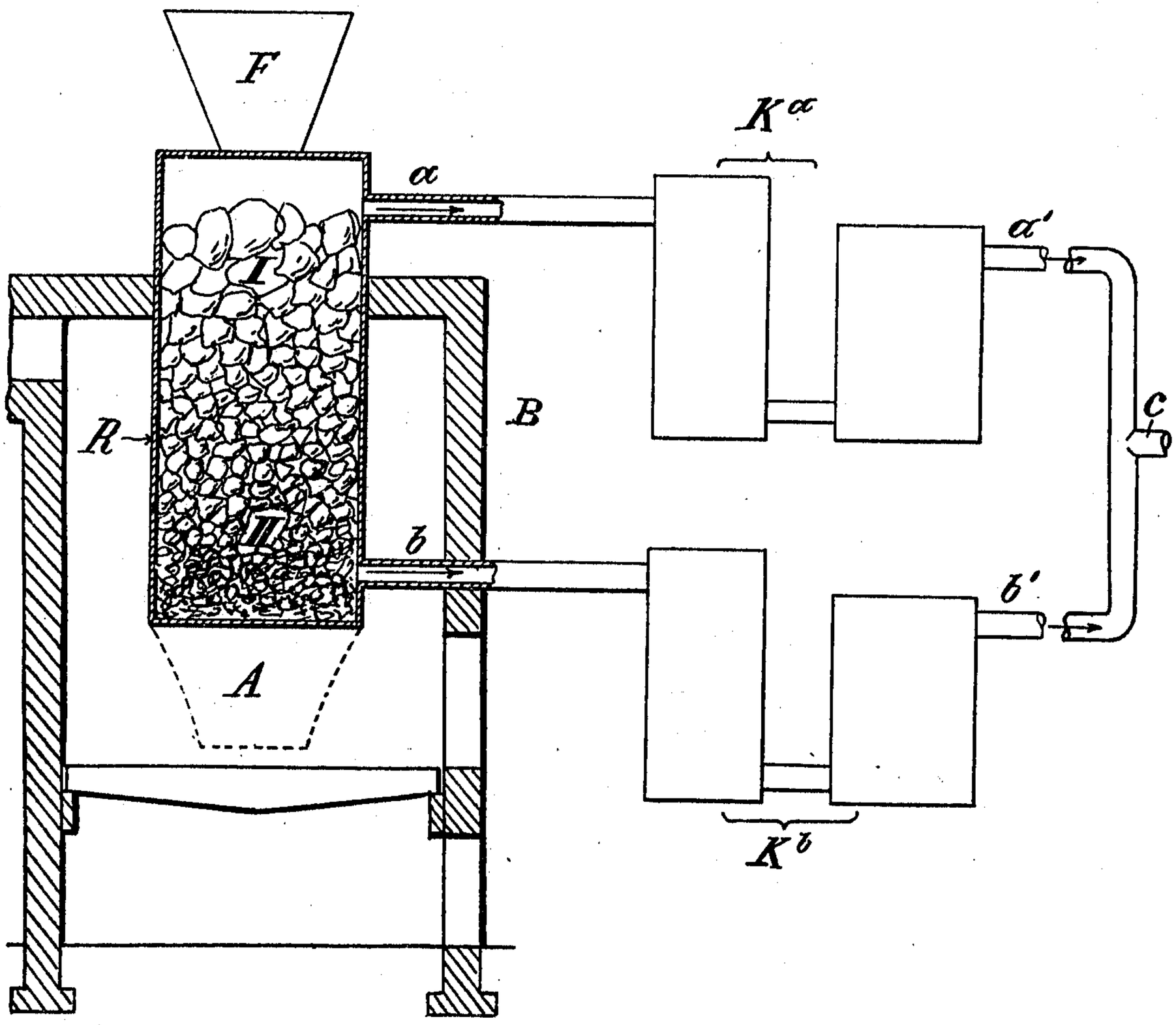
956,019. **Patented Apr. 26, 1910.**



Witnesses

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UNITED STATES PATENT OFFICE.

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MANUFACTURE OF GAS.

956,019. Specification of Letters Patent. Patented Apr. 26, 1910.

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To all whom it may concern:

Be it known that I, ADOLF ZINDLER, a subject of the German Emperor, and residing at New York, in the State of New York, have invented certain new and useful Improvements in Manufacture of Gas, of which the following is a specification.

My invention relates to manufacturing gas by the dry distillation of fuel.

In the dry distillation of shales, peat, wood and all bituminous matter by the continuous process, it is usual to take the gases, by suction, from different parts of the furnaces or retorts, but to conduct them collectively through one main to the cooling and purifying apparatus. In the gas-main the hot gases are mixed with comparatively cold gases, and it is well-known that the latter are decomposed and deteriorated by the former.

A primary object of my invention is to prevent this deterioration.

The invention will be described in connection with the accompanying drawings, in which the figure is a diagrammatical view showing this invention.

The apparatus consists of a suitable retort R provided with a filling hopper F and a discharge chute A. The retort R may be of any suitable construction, and may be a device of any suitable type other than that shown. It is, therefore, to be understood that this invention is not to be limited to any specific gas producing device. In the specific construction shown this retort is heated externally by means of a furnace B. The fuel placed in the retort will as the gas is distilled pass downwardly and through the discharge chute A. This discharge chute is shown in dotted lines and may extend laterally and downwardly outside of the furnace so that the distilled fuel may be raked out. The gas as generated is drawn from the retort by means of a plurality of conduits or pipes *a*, *b*. These conduits connect with the retort at the upper and lower zones I, II, respectively, these being zones of different temperatures, that is, the lower zone is at a higher temperature than the upper zone. In the specific embodiment shown these zones of different temperatures are shown as upper and lower zones respectively. It is to be understood, however, that this invention is not limited to this specific embodiment, since any construction in which conduits connect with zones of different temperatures comes within the scope of this invention.

The gases derived from the different zones are independently passed through apparatuses K^a K^b, which separately treat the gases. These apparatuses may be of any suitable form and may treat the gas in any suitable manner. In the specific construction shown these apparatuses are each composed of coolers and scrubbers. The gases as they issue from these treating apparatuses may be utilized in any suitable manner. They may be kept apart and discharged into separate reservoirs or holders, or they may be mixed and discharged into a common holder. In the specific embodiment shown, the gases issuing from the treating apparatuses through the conduits or pipes *a'*, *b'*, may discharge into a common main *c*, and hence may be utilized or discharged into a common holder.

It will thus be seen that the gases derived from zones of different temperatures in the retort are conducted away separately and treated separately before they are utilized or before they are mixed, where such mixture takes place. The decomposition of the cold gases by the hot gases is thus prevented. In this way the distillation of the tar regained from the colder gas derived from the zone of lowest temperatures and the splitting up of this tar is prevented. In prior methods where the gases derived from zones of different temperatures are mixed as they leave the retort—that is, when they are at different temperatures—the tar etc. is either distilled or split up; or the tars etc. from the separate gases which are of different qualities are mixed, thus necessitating fractional distillation to separate these different qualities. By separately treating the gases derived from the different zones, it is possible to obtain tar etc. of different qualities, and therefore special and fractional distillation of the tar etc. is obviated.

Having thus described the invention, what is claimed is:

1. The herein described process of manufacturing gas which consists in generating the gas, separately conducting away the portions of the gas derived from zones of different temperatures in the retort, and separately treating said portions before utilizing the same.

2. The herein described process of manufacturing gas which consists in generating

the gas, separately conducting away the portions of the gas derived from zones of different temperatures in the retort, and separately cooling said portions before utilizing the same.

3. The herein described process of manufacturing gas which consists in generating the gas, separately conducting away the portions of the gas derived from zones of different temperatures in the retort, and passing said portions separately through cooling apparatuses before they are mixed.

4. The herein described process of manufacturing gas which consists in generating the gas, separately conducting away the portions of the gas derived from zones of different temperatures in the retort, and passing said portions separately through apparatuses which treat them before they are mixed.

5. The herein described process of manufacturing gas which consists in generating the gas in a retort, separately conducting away the portions of the gas derived from the upper and lower zones of the retort, and separately treating said portions before utilizing the same.

6. The herein described process of manufacturing gas which consists in generating the gas, separately conducting away the portions of the gas derived from zones of different temperatures in the retort, and separately cooling and scrubbing said portions before utilizing the same.

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

ADOLF ZINDLER.

Witnesses:

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