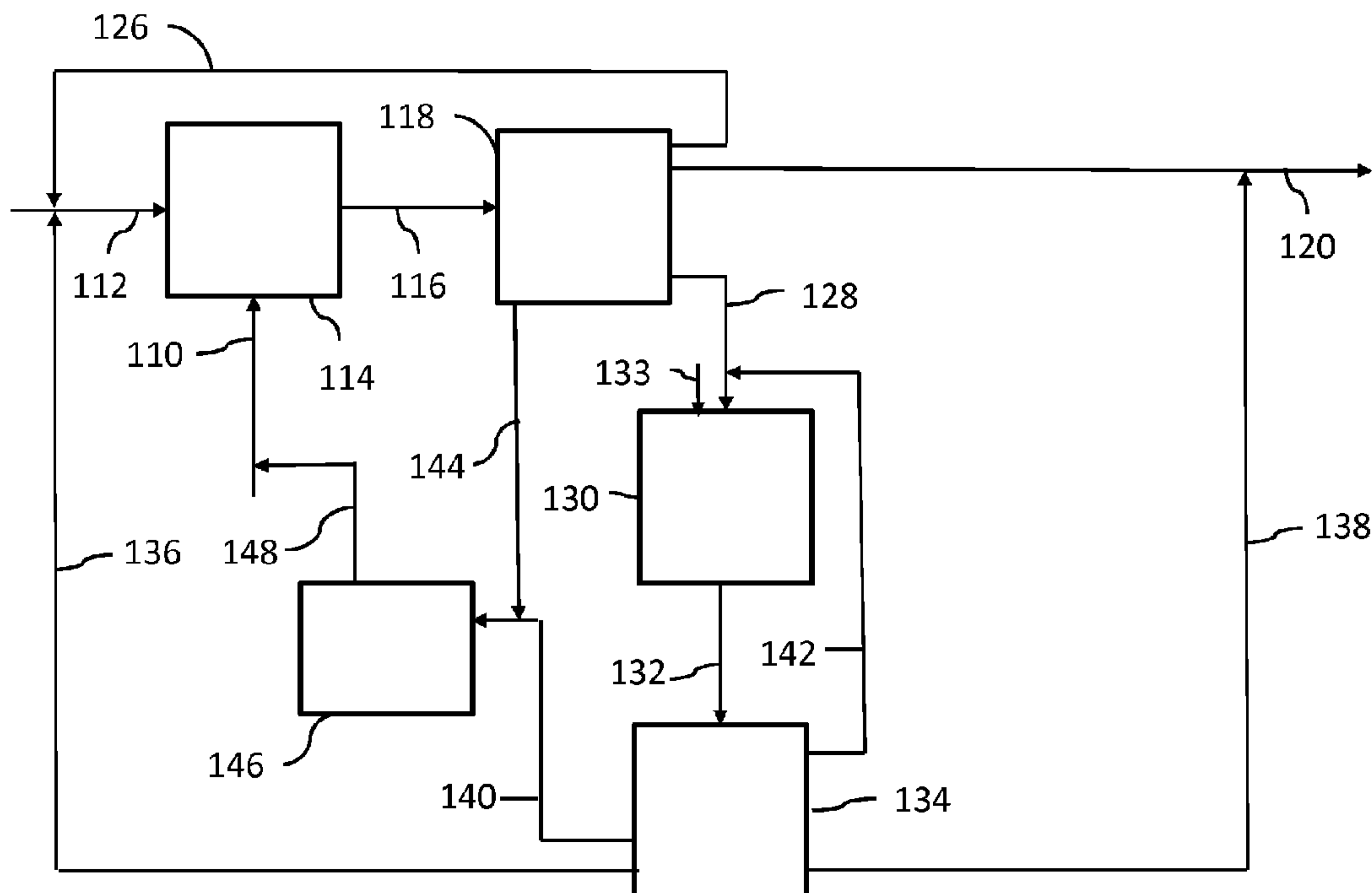




(86) **Date de dépôt PCT/PCT Filing Date:** 2015/06/09
(87) **Date publication PCT/PCT Publication Date:** 2015/12/17
(45) **Date de délivrance/Issue Date:** 2019/07/02
(85) **Entrée phase nationale/National Entry:** 2016/12/08
(86) **N° demande PCT/PCT Application No.:** US 2015/034904
(87) **N° publication PCT/PCT Publication No.:** 2015/191580
(30) **Priorité/Priority:** 2014/06/12 (US62/011,252)

(51) **Cl.Int./Int.Cl. C07C 1/32** (2006.01)
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(54) **Titre : PRODUCTION DE 1,3-BUTADIENE**
(54) **Title: PRODUCTION OF 1,3-BUTADIENE**



(57) **Abrégé/Abstract:**

Olefins and diolefins, such as 1,3-butadiene, may be produced by a method utilizing a series of bromination and dehydrobromination reactions. Bromine may be reacted with n-butane to form dibromobutane. The dibromobutanes may be dehydrobrominating to form 1,3-butadiene. The method may include reacting butene with bromine to form bromobutenes, and dehydrobrominating the bromobutenes to form 1,3-butadiene. The method may include reacting butene with hydrogen bromide in the presence of oxygen to form bromobutenes, and dehydrobrominating the bromobutenes to form 1,3-butadiene. The method may include reacting butene with bromine to form dibromobutanes, and dehydrobrominating the dibromobutanes to form 1,3-butadiene.

PRODUCTION OF 1,3-BUTADIENE

CROSS-REFERENCE TO RELATED APPLICATIONS

- 5 [0001] This application claims priority from U.S. provisional patent application number 62/011,252, filed June 12, 2014.

FIELD

- [0001A] The present disclosure generally relates to methods of producing olefins and diolefins utilizing halogenation and dehydrohalogenation. In particular, the present disclosure
10 relates to methods of producing 1,3-butadiene from n-butane or butenes utilizing bromination and dehydrobromination.

BACKGROUND

- [0001B] Conventionally, one method of obtaining 1,3-butadiene is by extraction from a crude C₄ stream produced as a co-product of steam cracking. Because 1,3-butadiene has
15 physical properties that are close to other C₄ species in such crude C₄ streams, extractive distillation is often utilized to separate 1,3-butadiene from the other C₄ species. Such extractive distillations typically utilize solvents, such as N-methylpyrrolidone or acetone.

- [0001C] Another conventional method of obtaining 1,3-butadiene is by dehydrogenation of n-butane and butenes. For example, 1,3-butadiene may be prepared industrially by the so-called CATADIENE® (Houdry) process. Such a process generally involves dehydrogenation
20 of n-butane or 1-butene and 2-butenes over a fixed or fluidized catalyst.

- [0001D] Additionally, 1,3-butadiene may be obtained by conversion of ethanol. For example, 1,3-butadiene may be produced by the Lebedev method, in which ethanol is converted catalytically to 1,3-butadiene. Such methods generate byproducts including
25 hydrogen and water.

