

# (19) United States

# (12) Patent Application Publication (10) Pub. No.: US 2022/0368344 A1 Theivendran et al.

(43) Pub. Date: Nov. 17, 2022

### (54) BARREL COMPACTOR SYSTEM, METHOD AND DEVICE

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(21) Appl. No.: 17/868,657

(22) Filed: Jul. 19, 2022

## Related U.S. Application Data

(63) Continuation of application No. 16/786,608, filed on Feb. 10, 2020, now Pat. No. 11,424,759, which is a continuation of application No. 15/917,284, filed on Mar. 9, 2018, now Pat. No. 10,581,455, which is a continuation of application No. 14/675,728, filed on Mar. 31, 2015, now Pat. No. 9,954,551.

#### **Publication Classification**

(51) Int. Cl. H03M 7/30 (2006.01)

(52) U.S. Cl.

CPC ...... H03M 7/3059 (2013.01); H03M 7/6011 (2013.01)

#### (57) ABSTRACT

A packet processing system having a barrel compactor that extracts a desired data subset from an input dataset (e.g. an incoming packet). The barrel compactor is able to selectively shift one or more of the input data units of the input dataset based on individual shift values for those data units. Additionally, in some embodiments one or more of the data units are able to be logically combined to produce a desired logical output unit.

