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(54) Title: METHOD OF MAPPING BULK MATERIAL IN A BIN USING MACHINE LEARNING

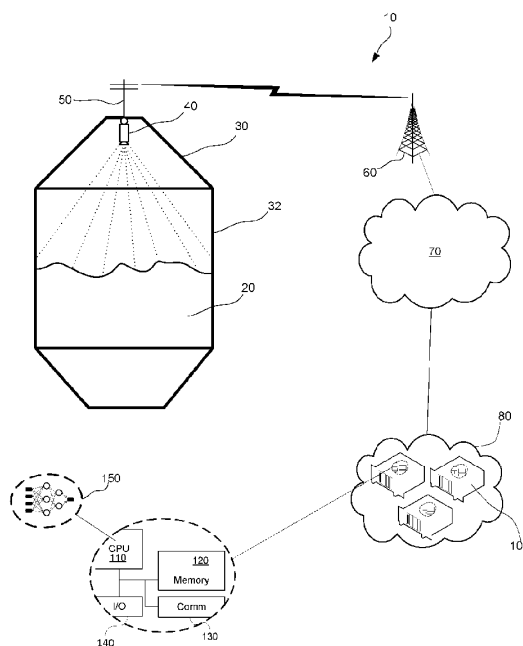


FIG. 1

(57) Abstract: Disclosed is a method of mapping a bulk material in a storage bin having a wall for containing the bulk material. The method entails capturing a plurality of training images of various topologies of bulk material in the storage bin using a depth-map-capturing sensor such as a time-of-flight camera, each of the plurality of training images being defined by an array of pixels. An artificial neural network is trained on the plurality of training images to develop an artificial intelligence model capable of discriminating between the wall and a surface of the bulk material. The method further entails capturing one or more images of bulk material to be mapped in the bin or another similarly shaped bin using the depth-map-capturing sensor (e.g. time-of-flight camera) and then mapping the bulk material in the bin or another similarly shaped bin using the artificial intelligence model to discriminate between the wall and the bulk material in the bin or another similarly shaped bin.

[Continued on next page]

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