type it is possible to both elevate and lower material and discharge the load automatically at any floor either up or down stairs.

The same idea is utilized in the Humphrey automatic passenger elevator commonly used in flour mills. The passenger standing on a platform attached to the belt and steadying himself thereon by means of a handle attached to the belt at the proper height—and then watching and stepping off at the right place when the belt is slowly moving either up or down.

I will not attempt to say anything about passenger or freight platform elevators as these are entirely out of my field. Other methods of handling material are by buckets and tubs on cables, etc., and by means of cars on a track system often pulled along by wire cables, etc., but I will adhere strictly to elevating and conveying machinery.

A combination of the systems I have endeavored to describe are often units in a complete installation. For instance a bucket elevator or a grab bucket may discharge onto a belt conveyor which in turn can discharge into a screen or crusher and from thence taken by another elevator or conveyor and discharged into bins. To illustrate the idea and give an illustration of the saving effected I would like to describe an actual installation of elevating and conveying machinery as follows.

The unusual conditions prevailing at the power house of the Peoria Gas and Electric Co., a corporation operating over 4,100 horse power of boilers, supplying the light and power at Peoria, Ill., necessitated a special type of mechanical equipment for the conveying of their coal directly from the cars to the fires under the boilers and handling the ashes from the ash pits.

It was designed to handle fifty tons of either coal or ashes per hour, but as a matter of fact it is frequently handling double that tonnage.

The fuel that is being used is "run-of-mine" coal, which is delivered alongside the plant in 30-ton railway cars. The cars may be either dunped into a track pit or unloaded direct from the car by a grab bucket, (see Fig. 6), which is operated by cable and electrically driven double drum hoist situated on a cantilever tower.

The coal is dumped from the bucket through a receiving hopper placed in the tower to a two-roll crusher, electrically driven. This is accomplished by means of a reciprocating plate feeder equipped with a perforated bottom, which allows the fine coal to by-pass around the crusher, delivering only the large lump coal to the crusher rolls. The coal passing through the rolls is delivered to a belt conveyor, which deposits