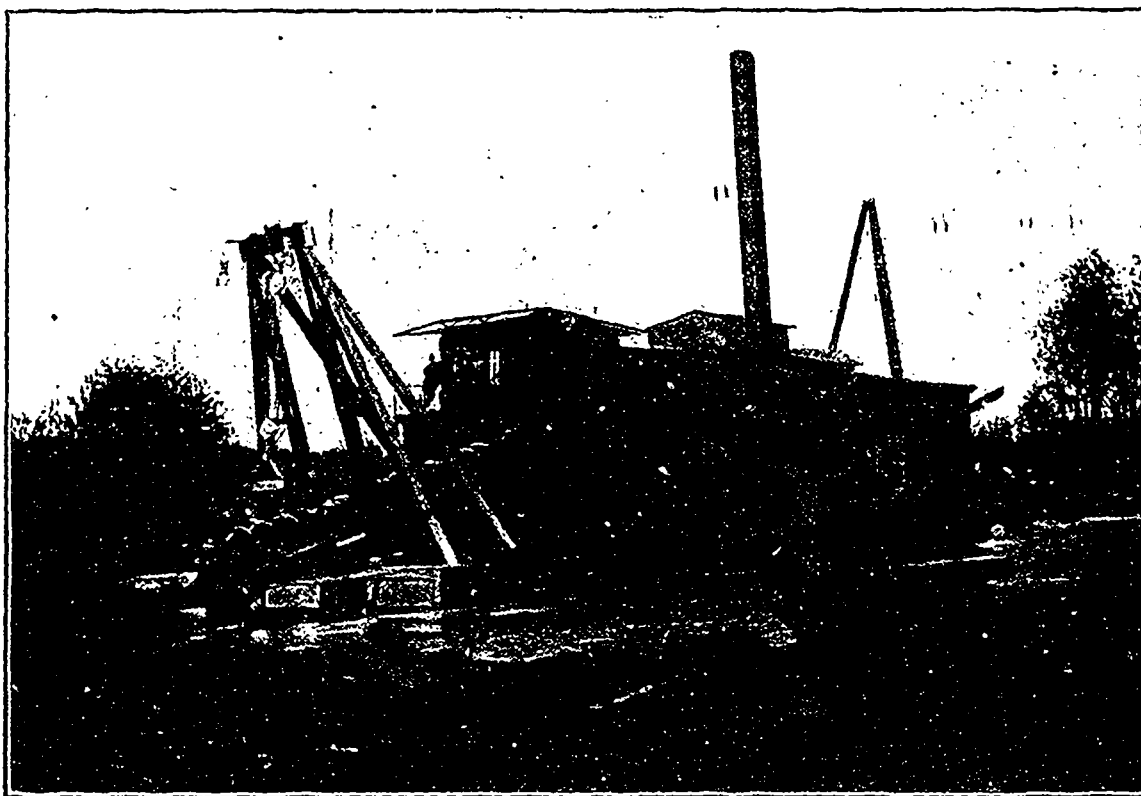


iron as possible. The result is a dredge that is light, strong, easily handled, economical to transport and erect, and that can be depended on to do its work continuously and with light repairs. This dredge made a run of 76 per cent. actual working time during her trial period of 30 days. The total delays thus amounted to 24 per cent. of the time, and included all the time lost in adjusting the new machinery, and in correcting small defects, which when once done would not occur again, so that it is expected that in regular work much better time will be made. Old established dredges on regular runs, seldom average more than 75 per cent. running-time on account of incidental and unavoidable delays.

The dredge herein illustrated and described is the property of the Gold Bond Dredging Company, J. B. Austin, president, Ransom's Bridge, N.C. It is at work in an alluvial flat forming the bottom of a low valley and through which runs a small brook which would readily pass through an 8 inch pipe, and which keeps the pond supplied. The ground is covered with heavy pine timber which when cut yields fuel for the

tumbler shaft is of hammered steel and runs in enclosed bearings in the end of the ladder-frame; these bearings also have renewable bushings. The upper tumbler is of cast steel five-sided, and is fitted with Robinson's patent driving faces, by means of which the driving power of the tumbler is applied directly under the centre of the bucket-pins, instead of the usual over-hang due to the links working on the polygonal faces. The strain and wear on both buckets and tumblers is thus reduced. The buckets run at a speed of 24 per minute. This is equal to buckets of 6 cu. ft. capacity of the open-connected type, running at 12 per minute. The buckets discharge through a steel hopper into the revolving screen, which is 4 feet 6 in. by 16 feet. This screen is made with interchangeable, perforated plates on a steel frame, so that the plates may be removed without taking down the screen.

The head-frame and driving gear for the buckets and screen are strong and simple, there being but two working shafts and four bearings in the entire machinery, including tumbler and screen drives. These



Robinson Gold Mining Dredge Working in an Alluvial Flat.

dredge, and the stumps are readily dug out by the dredge itself. Gold is found in good paying quantities, and is of varying degrees of fineness.

The hull is of wood 94' x 32' x 7'. It is very strongly built, and the well sides are carried aft the whole length of the boat to form bulkheads. There are also steel hog-rods forming two fore and aft trusses. The ladder-frame is of steel and long enough to dredge in thirty feet of water. The buckets are of Robinson's Patent Improved Close-connected type of 3 cu. ft. capacity each. The back of the bucket is of cast steel. The pins are 3 inches diameter of steel, and the bushings are of manganese steel. These bushings are specially made to slip in or out of recesses shaped to a half circle, so as to be readily renewed. The lower

two shafts are the upper tumbler shaft, and secondary, or pinion, shaft. The main gearing is of steel, and a steel-rimmed pulley of large diameter on the end of the pinion-shaft is directly belted to the main engines on deck. The revolving screen is driven from the secondary shaft, which passes directly above it. On the screen is a cast steel spur gear of 2" pitch and 6" face, which also has a flange or roller-patch attached to it. The screen is mounted on adjustable steel rollers running in dirt-protected bearings. An adjustable friction clutch is provided at the main pinion, which will slip in case of sudden strain, but the bolt transmission also furnishes a safeguard.

The main engines are of 50 h.p. of vertical marine type. In this case they are double cylinder high