cessful, the possibilities are that the near future will see many new companies formed for the purpose of carrying on this most modern style of placer mining. A description, therefore, of some of the latest and most approved machinery for the purpose may not come amiss.

The most important feature leading to success in this work, next to securing suitable dredging ground, is securing suitable dredging machinery. It has been thoroughly demonstrated in the past that, no matter how good the ground might be, that the success of the venture is entirely dependent on the machinery used and its It is also true that, owing to the careful operation. character of the work and the excessive wear and tear upon parts of the machinery, due to the action of grit and gravel to which it is exposed, and in which it must to a certain extent work, the machinery must be made strong and substantial beyond the possibility of breakage, the moving parts must be protected as far as possible from contact with the grit and the parts which must necessarily be worn by contact with the gravel

astern and carried down by the current to a point where they will not interfere with the operation of the boat. The fines containing the values pass through the screen upon four double under currents or sluices which are arranged according to the nature of the gold which is to be saved with riffles or burlaps upon which the values may be concentrated.

The cut illustrates but one style of dredge, a sort of standard type for the usual run of work. Where special difficulties are to be coped with, special machinery must be designed for the purpose, and, in fact, almost every placer presents some especial features which make it desirable that the machinery should be made to suit actual existing conditions. No one machine can be made which will successfully and economically work in any and all placers.

The details of the machinery as furnished by the Link-Belt Company have been very carefully worked out, and especial pains have been taken to make these machines powerful, substantial and durable. The Ewart guaran-



THE LINK BELT COMPANY'S GOLD DREDGING MACHINERY .- FIG. 1.

must be easily renewable with a minimum of expense and delay. The items of expense for repairs and delays arising from breakdowns and from worn parts have heretofore been the largest factors of expense with which the dredger has been forced to contend.

The Link-Belt Machinery Company, of Chicago, U. S. A., have recently placed upon the market a modern, carefully designed and constructed, placer dredge, a general view of which is shown in outline in Fig. 1. The gravel is excavated and raised by the endless chain of buckets and delivered to two screens which extend across the hull about midship. These screens are of the shaking or the revolving type, according to the nature of the gravels which they are to separate. The gravel being washed and screened, the tailings are delivered to a sluice or conveyor and carried to a stacker which overhangs the stern of the boat. In river dredging the stacker is not commonly necessary and the coarse tailings may be delivered over the side of the boat by a chute from the end of the screen, the fines being sluiced teed friction clutches are used in place of the square-jaw clutches commonly in use for this class of work. The shafting and transmission machinery are of exceptional quality. The bearings are of the improved self-oiling and chain-oiling type and require but little attention. All gearing used on the dredge is of the best quality of cast steel. The Link-Belt patent equalising gears are used to transmit power to the head shaft and equalise the strains in the excavating chain. The tumblers for the excavating chain are provided with removable steelwearing faces.

The bucket chain is the design of Mr. G. L. Holmes, assistant engineer of the company, and patents have been taken out covering the essential points. Mr. Holmes has given much time to the study of his class of work and has designed a bucket chain having many desirable features. The joints of the chain are absolutely grit proof; the pins, which are large in diameter, are completely enclosed, there being no unprotected passage by which sand or other grit may enter the bear-