

UNITED STATES PATENT OFFICE.

BERTRAM F. KRAMER, OF CHARLESTON, SOUTH CAROLINA.

ROCK-BREAKER.

SPECIFICATION forming part of Letters Patent No. 278,801, dated June 5, 1883.

Application filed January 26, 1883. (No model.)

To all whom it may concern:

Be it known that I, BERTRAM FREDRICK KRAMER, of Charleston, in the county of Charleston and State of South Carolina, have
5 invented certain new and useful Improvements in Rock-Breakers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable
10 others skilled in the art to which it pertains to make and use the same.

My invention relates to machinery for breaking up or disintegrating rock or other hard substances found in the beds of rivers.

The object of the invention is to dislodge or
15 disintegrate embedded rock by means of a breaker or chisel-bar, as will be hereinafter fully described; and the invention consists in the combination, with a suitable support or derrick, of a chisel-bar, and means for allow-
20 ing said bar to fall by its own weight for insertion into the rock, and for tripping said bar to dislodge the rock.

The drawing represents a portion of a lighter having my improvement applied thereto.

25 A represents the lighter, provided with the derrick-beam *a*, which latter is provided at its upper end with a pulley, *a'*, and near its lower end with a pulley, *a''*. The lighter A is also provided with a downwardly-inclined
30 boom, B, adapted to project into the water, as illustrated in the drawing.

C represents the breaker or chisel-bar, provided at its upper end with a link, *c*, to which are secured, respectively, the ropes D and E.
35 The rope D passes over the pulley *a'* of the beam *a* to any suitable drum or hoisting device on the lighter A. The rope E passes around a pulley, *b'*, supported at the end of the boom B, and thence over the pulley *a''* of
40 the beam *a* to any suitable operating-drum on the lighter. The beam *a* and boom B are

suitably braced together and to the lighter by braces F.

The operation of the device as thus constructed is as follows: The breaker or chisel-
45 bar C is controlled by means of the rope D, and is hoisted by a steam-engine or other means carried upon the lighter, and allowed to drop of its own weight to penetrate the rock or other hard substance. After the bar is thus
50 embedded it is tripped or thrown from its vertical position by means of the rope E, as shown in dotted lines in the drawing, thus forcing up the rock or other substance behind the point of the chisel-bar. The bar C, I
55 preferably construct of steel, or iron with a steel point.

I do not limit myself to the appliances herein shown and described for operating the chisel-
60 bar, nor to the application of my improvement to the breaking up of the hard substances of river-beds, as the improvement may be applied to many purposes on land.

Having fully described my invention, what I claim as new, and desire to secure by Letters
65 Patent, is—

The combination, with a lighter provided with a derrick and a downwardly-projecting inclined boom, of a breaker or chisel-bar suspended from said derrick, and adapted to fall
70 by its own weight for insertion into a bed of rock or other hard substance, and a rope passing around a pulley of said boom for tripping said bar, substantially as set forth.

In testimony whereof I have signed this speci-
75 fication in the presence of two subscribing witnesses.

BERTRAM FREDRICK KRAMER.

Witnesses:

S. G. NOTTINGHAM,
GEORGE COOK.