

E. A. WALL.
DIFFERENTIAL RECIPROCATING BUMPING MECHANISM.
APPLICATION FILED JULY 28, 1911.

1,011,680.

Patented Dec. 12, 1911.

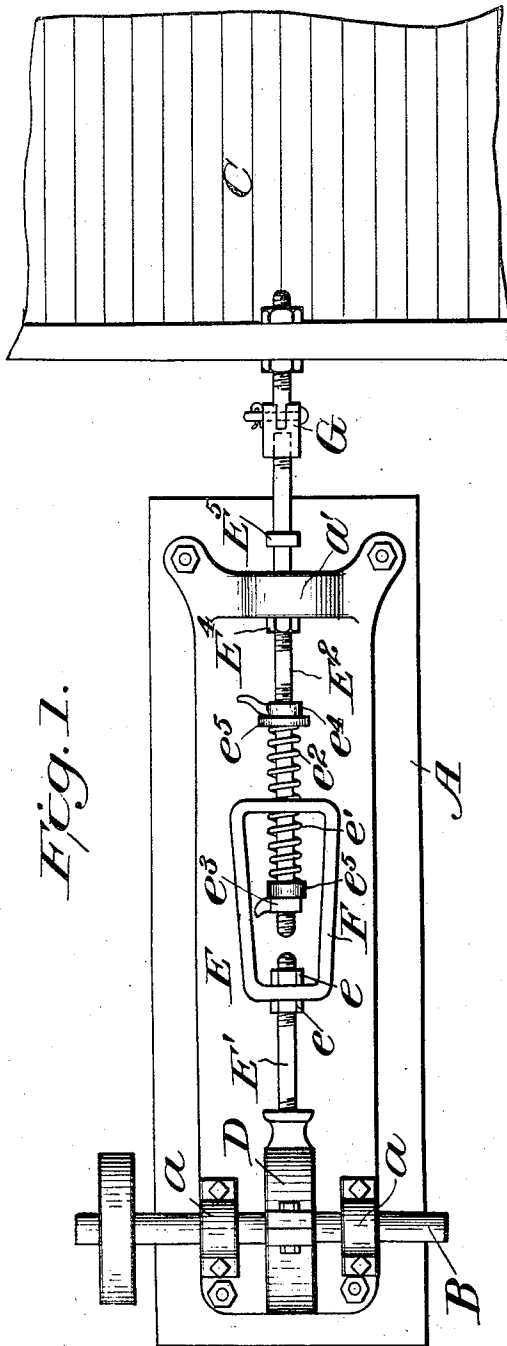


Fig. 1.

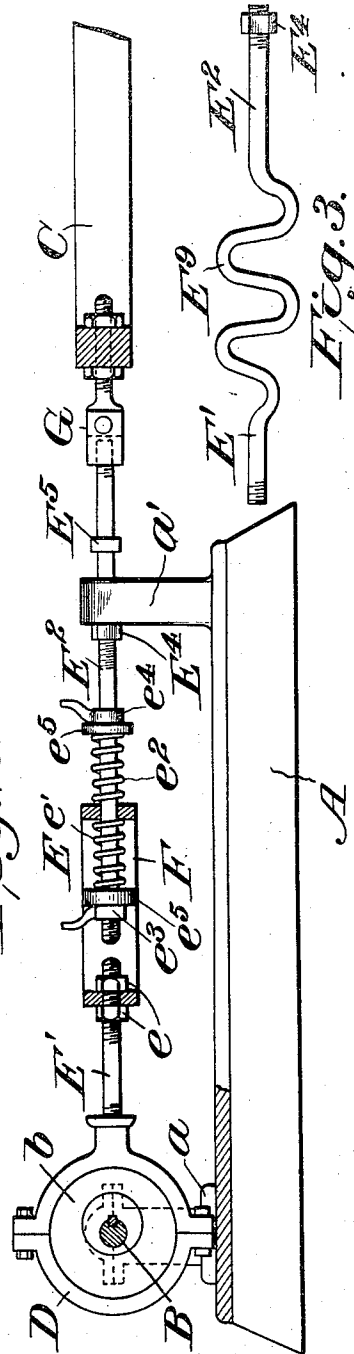


Fig. 2.



Fig. 3.

WITNESSES

C. M. Walker
H. F. Rueth

INVENTOR

E. A. Wall
by Geo. H. Egan
Attorney

UNITED STATES PATENT OFFICE.

ENOS A. WALL, OF SALT LAKE CITY, UTAH.

DIFFERENTIAL RECIPROCATING BUMPING MECHANISM.

1,011,680.

Specification of Letters Patent.

Patented Dec. 12, 1911.

Application filed July 28, 1911. Serial No. 641,025.

To all whom it may concern:

Be it known that I, ENOS A. WALL, a citizen of the United States, residing at Salt Lake City, in the county of Salt Lake and State of Utah, have invented certain new and useful Improvements in Differential Reciprocating Bumping Mechanism, of which the following is a specification.

My invention relates to mechanism for reciprocating ore concentrators, screens, and other devices to which it is desired to impart a differential-reciprocating, bumping, or jerking action.

The main object of the invention is to provide a longitudinally yielding or expansible and contractible connecting rod between the operating crank and the device to be reciprocated, which rod is provided with one or more bumpers adapted to contact with a fixed buffer, as will be hereinafter described and claimed. This object is attained by the mechanism illustrated in the accompanying drawing, in which—

Figure 1 is a plan thereof; Fig. 2 is a central vertical longitudinal section; and Fig. 3 is a plan of a modified form of connecting rod.

A designates a suitable base provided at its outer end with shaft bearings a , a , in which is mounted a shaft B, provided with an eccentric b , or other form of crank, and a' designates a buffer at the inner end of the base or frame A.

C designates the table, screen or other device to be reciprocated.

D designates the eccentric strap and E the two-part connecting rod, the outer member E' of which is rigidly connected at its outer end to the strap D, while its inner end is rigidly connected to the outer end of a yoke F by means of the nuts e , e , or otherwise. The inner member E^2 of the connecting rod E passes loosely through the inner end of the yoke F, and is provided at opposite sides thereof with helical or other springs e' , e^2 , which bear at their opposite ends against the adjusting or tension nuts e^3 , e^4 ; wear plates e^5 being interposed between the said springs and nuts. The inner section E^2 of the rod E is provided next to the outer face of the buffer a' with a bumper E^4 , in the

form of a heavy adjustable nut, and if it is desired to produce a bumping action in both throws of the connecting rod, a similar bumper E^5 is provided beyond the inner face of the fixed buffer a' .

A suitable connection between the connecting rod and the device C, to be actuated, is shown at G.

It will be seen from the foregoing that when the eccentric or crank throws the connecting rod E, to the right, the two parts of the rod will move as one until the bumper E^4 strikes the fixed buffer a' , when the further travel of the rod will stop and its members E' , E^2 will yield owing to the compression of the spring e^2 . After the eccentric has moved past its point of greatest throw and starts back, the spring e' will receive the throw. When the bumper E^4 strikes the buffer a' , the forward movement of the table, or other device, will be suddenly checked to dislodge and agitate the material thereon. Where it is desired to produce this bumping or jerking action in the rearward movement of the table or screen, as well as in the forward movement, the bumper E^5 is provided and then the spring e' takes up the shock of the rod E in its outward travel or throw.

The length of throw of the rod E may be varied by adjusting its two members E' , E^2 toward or from each other by means of the nuts e^3 , e^4 .

I do not restrict myself to the particular means shown for taking the strain from the connecting rod after its bumper has struck the fixed buffer a' , as various means may be employed for this purpose. In Fig. 3, for instance, the two parts E' , E^2 of the rod E are connected by an integral spring E^6 formed by bending the rod in serpentine or zig-zag form. In both forms the rod is adapted to yield longitudinally after its bumper has struck the fixed buffer. The bumping contact may be made at any point in the throw of the eccentric by adjusting the proper nuts.

What I claim is:

A differential-reciprocating bumping mechanism comprising, a longitudinally-yielding rod adapted at its inner end for connection

with the device to be operated, means for reciprocating the rod, a bumper on the rod between its yielding portion and inner end, and a stationary buffer in the path of said bumper; whereby the rod will be cushioned after its bumper has contacted with said buffer.

In testimony whereof I affix my signature in presence of two witnesses.

ENOS A. WALL.

Witnesses:

CHARLES B. JACK,
SAMUEL H. BOYLAN.
