

A. HUNTER.

Apparatus for Separating and Concentrating Ores.

No. 47,828.

Patented May 23, 1865.

FIG. 1

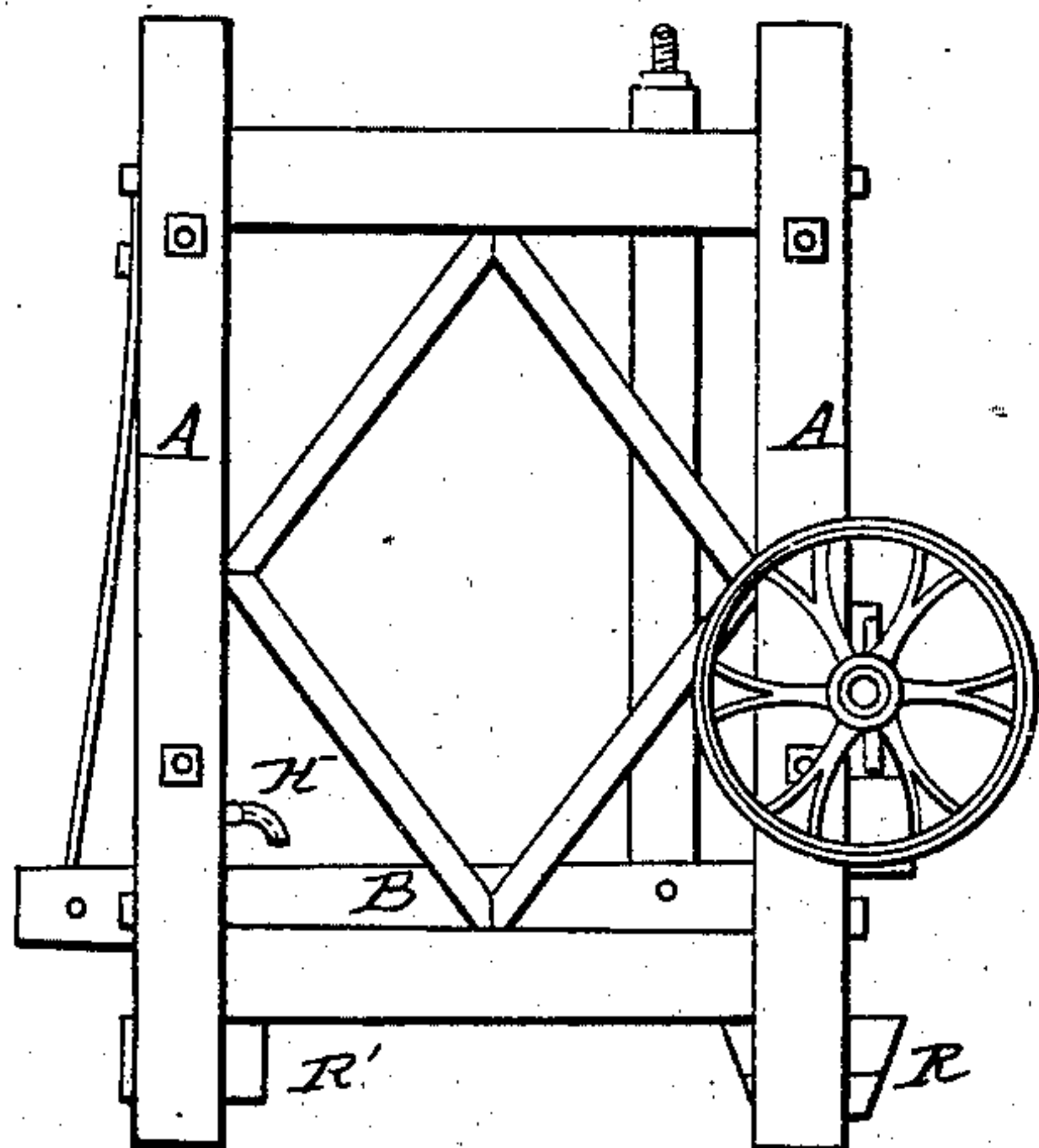


FIG. 2

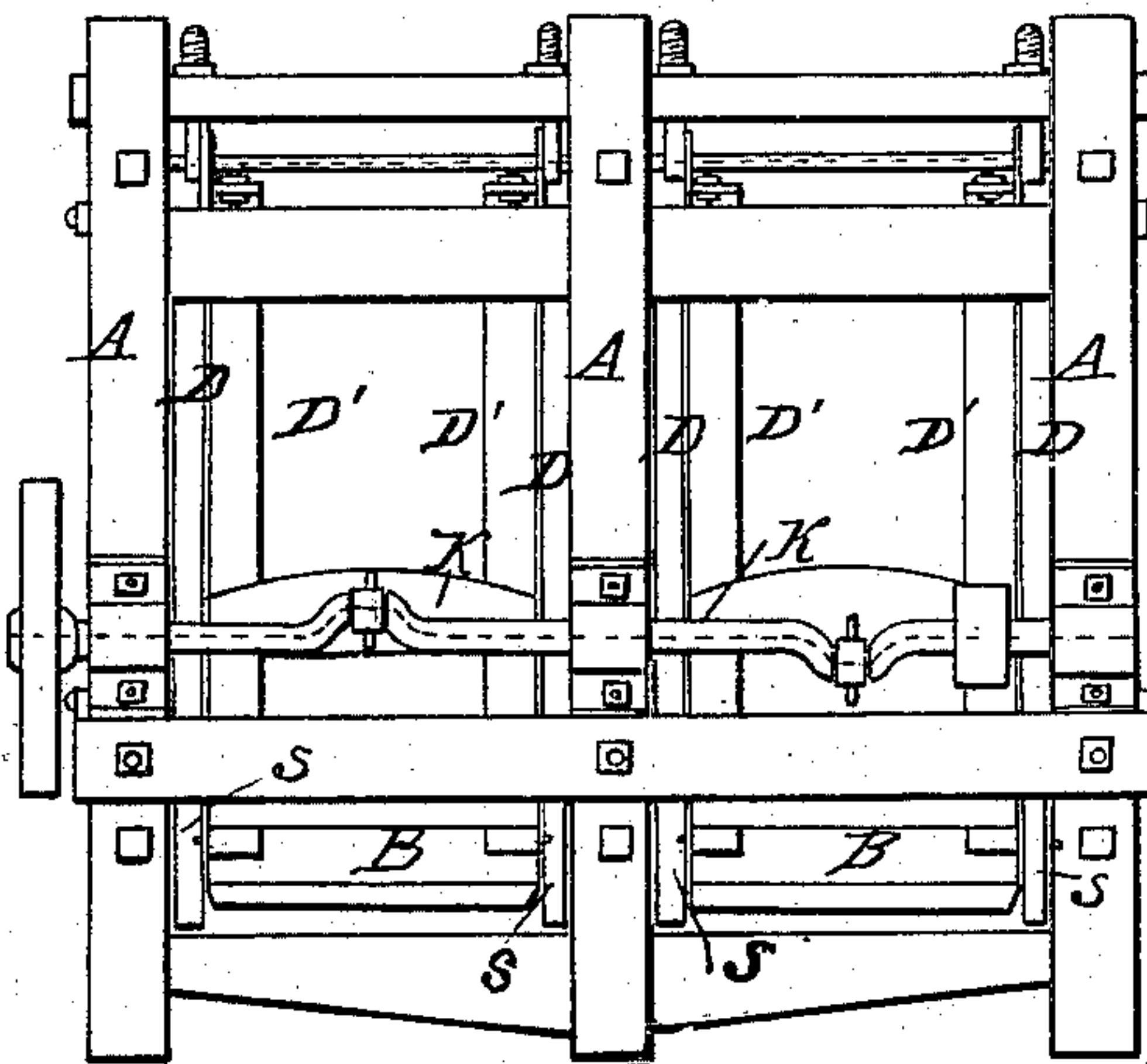


FIG. 3

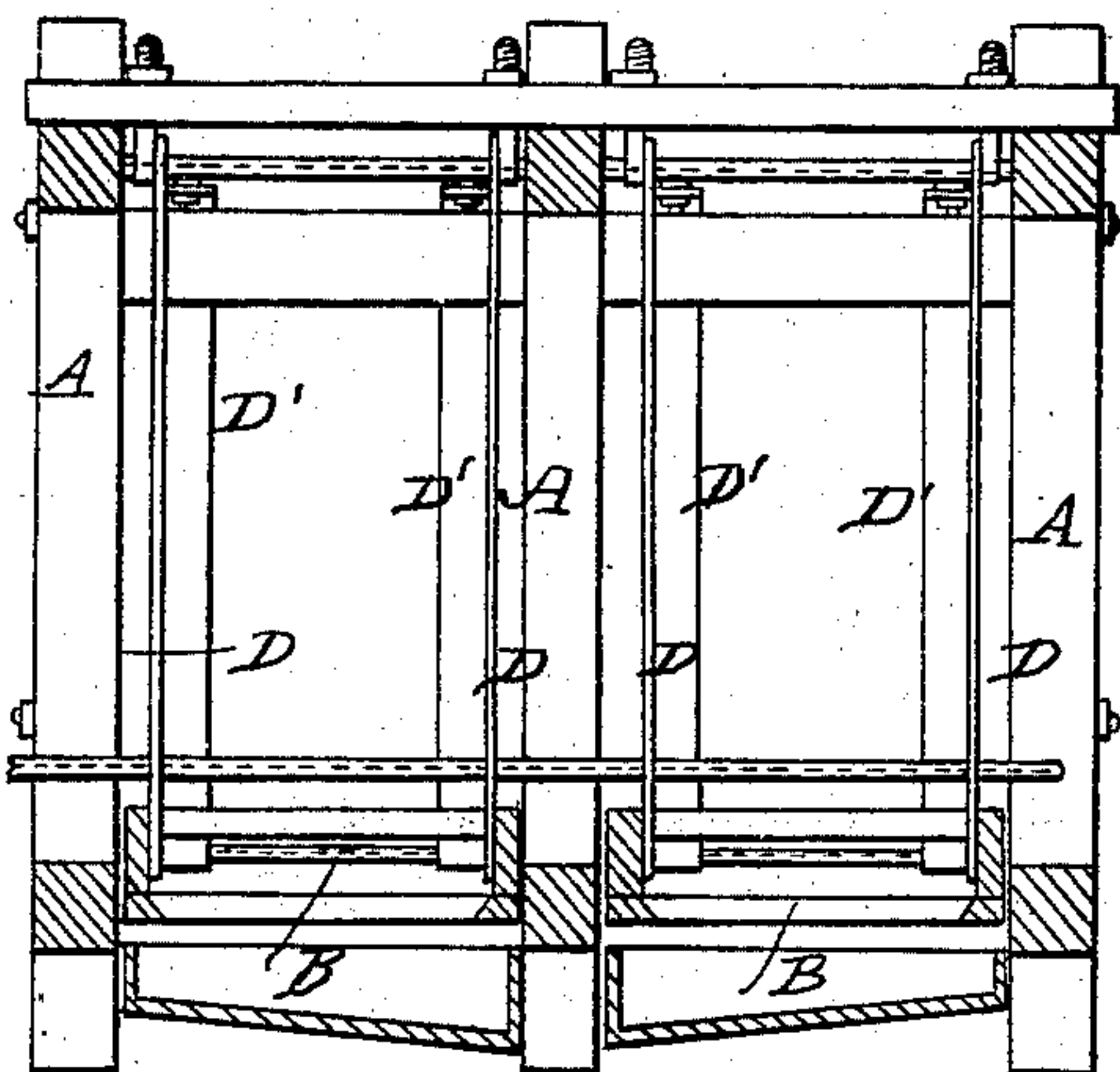


FIG. 4

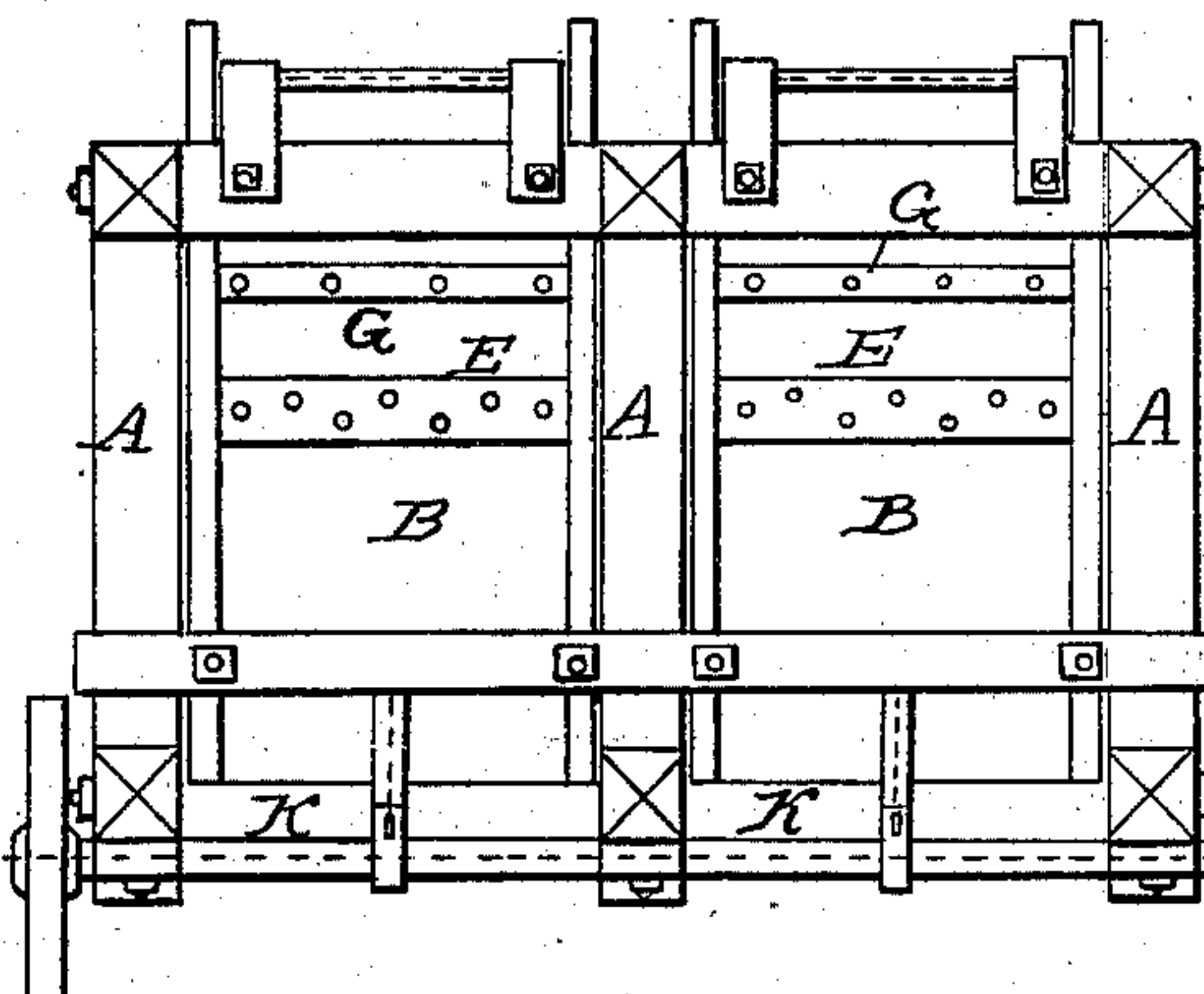
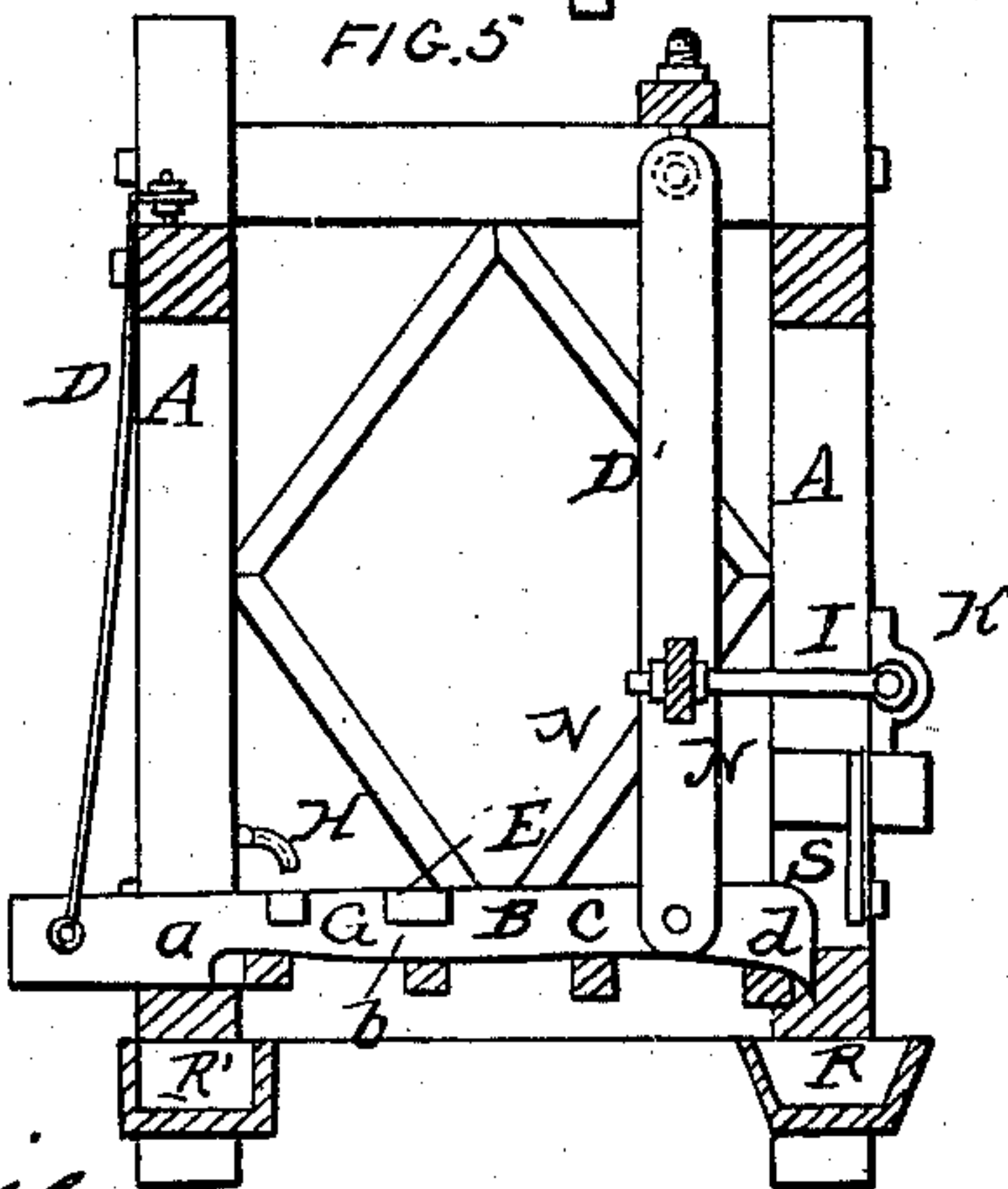


FIG. 5



WITNESSES

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ANDREW HUNTER, OF SOLANO COUNTY, CALIFORNIA.

IMPROVED APPARATUS FOR SEPARATING AND CONCENTRATING ORES.

Specification forming part of Letters Patent No. 47,828, dated May 23, 1865.

To all whom it may concern:

Be it known that I, ANDREW HUNTER, of the county of Solano, State of California, have invented a new and useful machine for separating and concentrating sulphurets from ores, sand, and tailings, whether of gold, silver, or other metals, and for saving amalgam; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure 1 is a side view of the machine; Figs. 2 and 3 are the front and rear ends. Fig. 4 is a plan. Fig. 5 is a vertical section from front to rear.

A A is a stout frame-work of wood, properly braced.

B B are troughs, with metallic bottoms, coated with amalgam. These bottoms have a downward inclination from rear to front about one-third their length, as shown by line *a b*, Fig. 5. From *b* to *c* they are level, or nearly so, and from *c* to *d*, or its discharge in front, it again inclines downward.

D D are hangers, (adjustable to any required length,) by which the troughs B B are suspended from frame-work A.

E E are small troughs or hoppers, (with holes in the bottom,) to receive the pulp and distribute it equally across the bottoms of the troughs B B.

G G are smaller troughs, supplied with water from stop-cock H, which drips slowly through small holes onto the bottoms of troughs B B.

K is a shaft, provided with cranks or eccentrics, revolved by any known means, giving a slight and quick oscillation or vibratory motion to troughs B B.

S S are springs or other contrivance, for the purpose of producing a concussion in consequence of troughs B B striking against the same.

I is a connecting or driving rod, adjustable to any desired length by means of screw-nuts N N.

R R' are receivers.

Operation: The machine being set in motion, the pulp or tailings are run into the troughs E E, and are distributed through the holes in same upon the bottom of troughs B B, the heavier particles—say sulphurets or metal—are arrested from their downward course and forced over the upper end of trough into receiver R' by means of the concussion produced by the striking of the troughs B B against the spring S S, or their equivalent, the degree of concussion being regulated by lengthening or shortening the connecting-rods I. The lighter earthy or sand particles pass down over the lower end of troughs B B into receiver R, having been perfectly separated from the sulphurets and metallic particles during its passage over the level surface *b c*, the metallic bottoms of the troughs B B retaining all or nearly all of the amalgam, so that the loss of sulphurets or metal passing into receiver R is almost nominal, as they consist of such fine particles as to be scarcely separable by the most careful panning.

The motion of this machine is so nearly the same as that of a grain-separator formerly patented by me that I make no claim for the same in this application.

Having thus described my machine and its operation, what I claim as my invention, and for which I desire Letters Patent to issue, is—

1. The formation of the troughs B B with metallic bottoms alternately inclining and level, as shown by line *a b c d*, substantially as described, and for the uses and purposes as set forth.

2. The combination of these troughs with the troughs E E G G, stop-cock H, hangers D D', springs S S, or their equivalent, and adjustable connecting-rods I, giving an oscillatory or vibratory motion, all substantially as described, and for the uses and purposes as hereinbefore set forth.

ANDREW HUNTER.

Witnesses:

CHAS. R. BOND,
J. W. MCKENZIE.