G. B. SHIPLEY.

JIG.

APPLICATION FILED JAN. 23, 1907.

995,381.

Patented June 13, 1911.

3 SHEETS—SHEET 1.

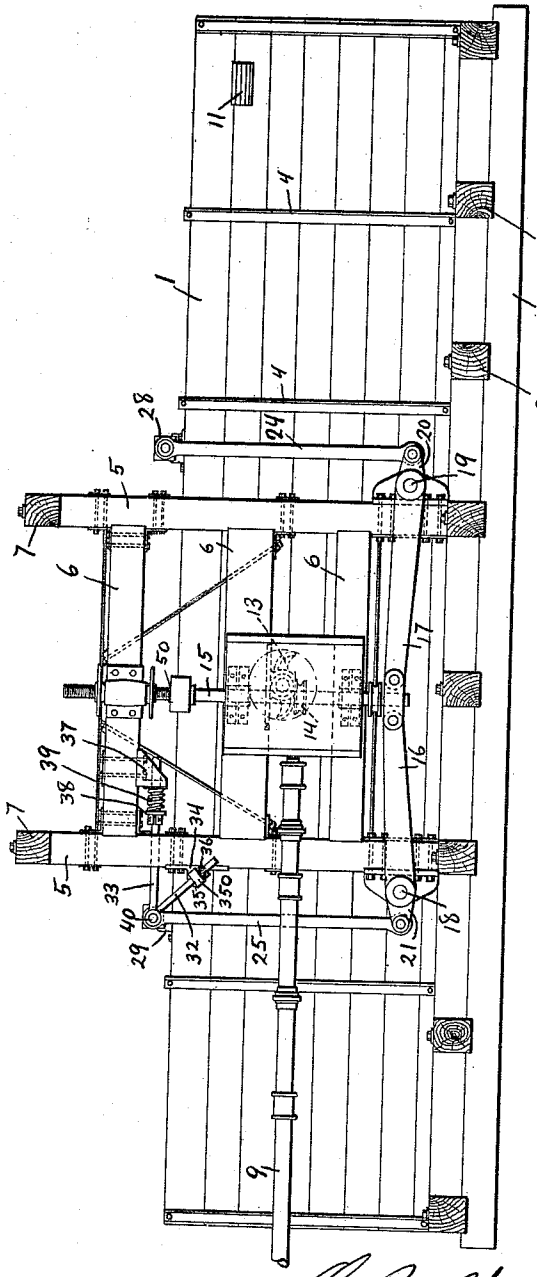

Fig. I.

WITNESSES:

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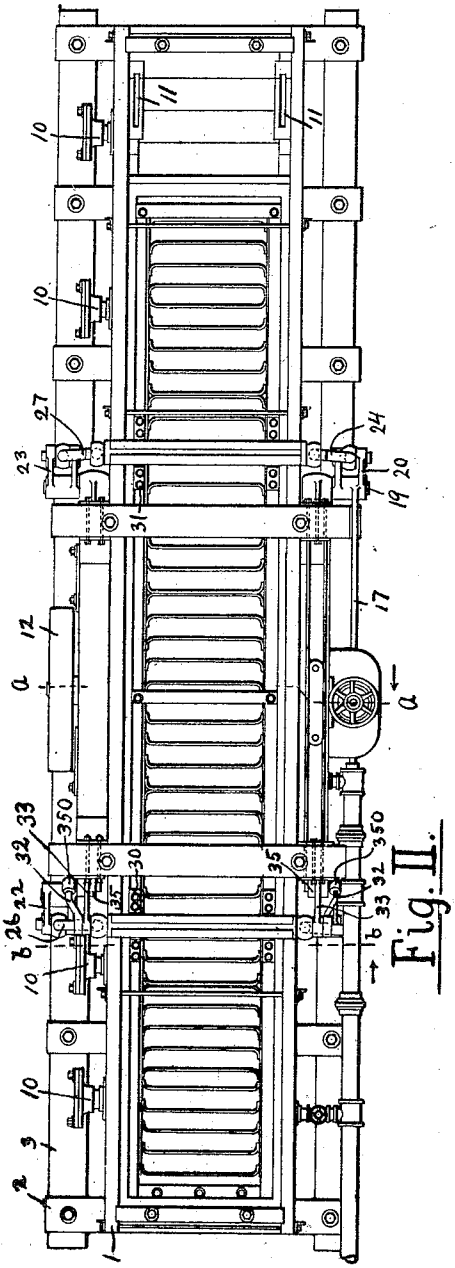

Fig. II.

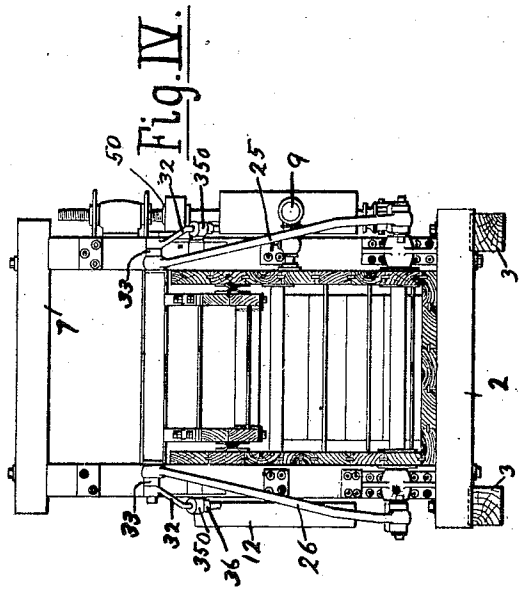

Fig. IV.

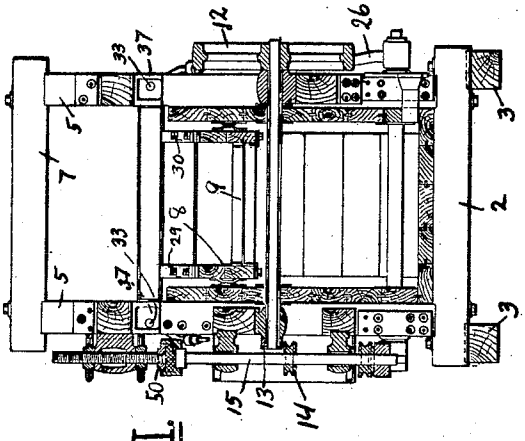

Fig. III.

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3 SHEETS—SHEET 3.

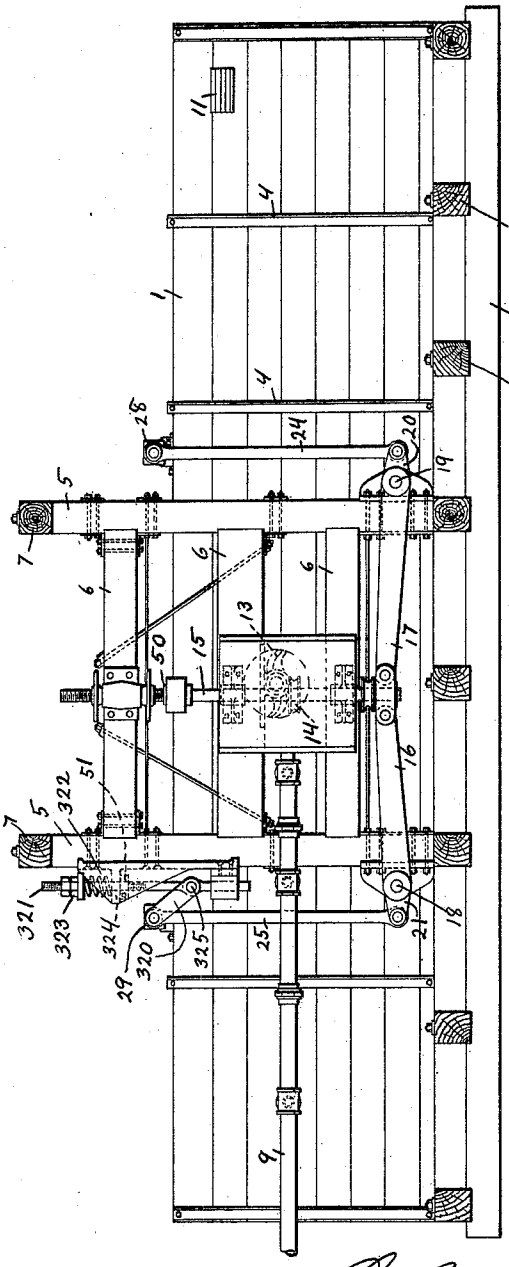

Fig. V.

WITNESSES:

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UNITED STATES PATENT OFFICE.

GRANT B. SHIPLEY, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO ALLIS-CHALMERS COMPANY, OF MILWAUKEE, WISCONSIN, A CORPORATION OF NEW JERSEY.

JIG.

995,381. Specification of Letters Patent. **Patented June 13, 1911.**

Application filed January 23, 1907. Serial No. 353,618.

To all whom it may concern:

Be it known that I, GRANT B. SHIPLEY, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Jigs, of which the following is a specification.

This invention relates to jigs for dressing and classifying ores and similar materials, and specifically it relates to the mechanism for imparting a desirable motion to the sieve.

On the drawings which accompany this specification and form a part thereof and on which the same reference characters are used to indicate the same elements in each of the several views,—Figure 1 represents, in side elevation, a jig embodying this invention. Fig. 2 is a plan view of the jig shown by Fig. 1. Fig. 3 is an elevation in cross section of the jig taken on the line *a*—*a* of Fig. 2 looking in the direction indicated by the arrow. Fig. 4 is an elevation in cross section taken on the line *b*—*b* of Fig. 2, looking in the direction indicated by the arrow. Fig. 5 represents an elevation of the jig and shows a modification of the motion controlling mechanism for the sieve.

Referring to the drawings, the numeral 1 designates a hutch which is shown as constructed of planks supported by suitable timbers 2 and 3, the hutch being strengthened by angle irons 4, a frame of timbers being constructed about the center of the hutch and on the outside of the same comprising uprights 5, longitudinal timbers 6, and cross timbers 7. Supported within the hutch is the sieve box 8 containing a sieve 9, upon which the ore is adapted to be received.

The general arrangement and the operation of this jig are similar to those at present in use and it is not deemed necessary to state at length the function and operation of the apparatus as jigs of this general character are extensively used in the art at present.

The numeral 9 designates the usual water pipe for conveying water to the interior of the hutch; 10 designates the discharge pipes; 11 the overflow; 12 the pulley by which power is received from some source of power by a belt and which operates the cam 13 which, acting against the collar 14 secured to the shaft 15, depresses said collar and shaft, thereby depressing lever arms 16 and 17, which oscillate the shafts 18 and 19, and elevate the arms 20, 21, 22, 23, and the links 24, 25, 26, 27, which links support the sieve box 8 from their upper ends by means of the hangers 28, 29, 30, 31.

The mounting of the shafts 18 and 19 and shaft of cam 13 as well as the location of the actuating means at the side of the jig instead of above or below, are features which in combination form the subject matter of Patent Number 919,258 granted April 20, 1909.

The sieve box 8 being supported from the upper end of the links 24, 25, 26, 27, would be free to swing endwise and drop until its motion was arrested by the hutch if it were not for the links 32 and 33 which are provided to restrain and limit the movement of the sieve box.

Secured to two of the uprights 5 are castings 34 provided with an apertured lug 35, through the apertures of which eye-bolts 350 pass. The links 32 extend through the eyes of said eye-bolts, and collars or equivalent devices 36 are secured to the links 32 on the sides of the eye-bolts 350 remote from the pivotal connections of the links 32 with the sieve box.

The links 33 extend in a general horizontal direction and are passed through apertures in the castings 37 which are secured to the longitudinal timbers 6. Secured to the links 33 are collars or equivalent devices 38, between which collars and the castings 37 are retained spiral springs of the open or compression type 39.

The operation of the apparatus is as follows: The levers 16, 17, being depressed, the links 24, 25, 26 and 27 are elevated; but the links 25 and 26 being constrained in their movements by the collars 36 and links 32 taking against eye-bolts 350 forming stops for the collars 36 and links 32, the upper ends of the links 25 and 26 can only move through part of an arc of a circle with a radius from eye-bolts 350 to pivots 40, and as they move through these paths, the springs 39 are compressed. This movement is continued until the cam 13 clears the collar 14, when the weight of the sieve box and its contents will cause the sieve box to fall; but the springs 39 being under compression, will move the sieve box to the left to the initial position corresponding to position of parts as shown by Fig. 1, the strength of the

springs being such that the sieve box practically falls to its lowest position before the springs act to return the box to its initial position.

In the modification as shown by Fig. 5, the links 320 are substituted for the specific form of the links 32, shown by the other figures of the drawings, and these links are secured to shafts 321 which are retained in a vertical position by being passed through apertures in lugs formed on castings 322, which are secured to the upright timbers 5. The upper ends of the shafts 321 are screw-threaded and are provided with nuts and washers indicated generally by the numeral 323, and between said washers and lugs 324 on the castings 322 are retained springs of the open or compression type in a manner very similar to the arrangement shown by Fig. 1 of the drawings.

The operation of the modified device is as follows: When the sieve is raised, the links 320 will swing to the right, Fig. 5, about their pivots 325 as axes. When the sieve box is permitted to drop, the springs will be compressed, allowing the sieve box to move back to its original position over a line of travel lower than that by which it moved to its highest position.

It will be understood that one spring can be used in place of the two shown by the drawings, or more than two can be used without departing from the spirit of this invention, but the construction shown by the drawings is the preferred construction.

The numeral 50 designates an adjustable bumper or primary stop for the shaft 15 and consequently the sieve-box, and the numeral 51 (Fig. 5) designates nuts or collars on shafts 321 to limit the upward movements thereof. These nuts or collars 51 on shafts 321 coact with lugs 324 and shafts 321 to form stops for the links 320 and the springs heretofore described tend to hold the adjacent ends of the links 320 against the stops.

What is claimed and desired to secure by Letters Patent is:

The combination with a hutch, of a sieve box therein, means for raising said sieve and allowing same to fall periodically, guiding means for the sieve box comprising side links connected at one of their ends to said sieve and at the other of their ends to said hutch, one of said connections of said links permitting a limited motion of said link on its connected part, positive stops for limiting said motion at one extreme and springs tending to hold said links against said stops and primary stops for limiting the lowest level of said sieve box.

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

GRANT B. SHIPLEY.

Witnesses:
H. C. CASE,
FRANK E. DENNETT.