No. 860,474. PATENTED JULY 16, 1907.

G. T. HOOD & W. M. COCHRANE.

SHAKING AMALGAMATING TABLE.

APPLICATION FILED MAR. 27, 1906.

4 SHEETS—SHEET 1.

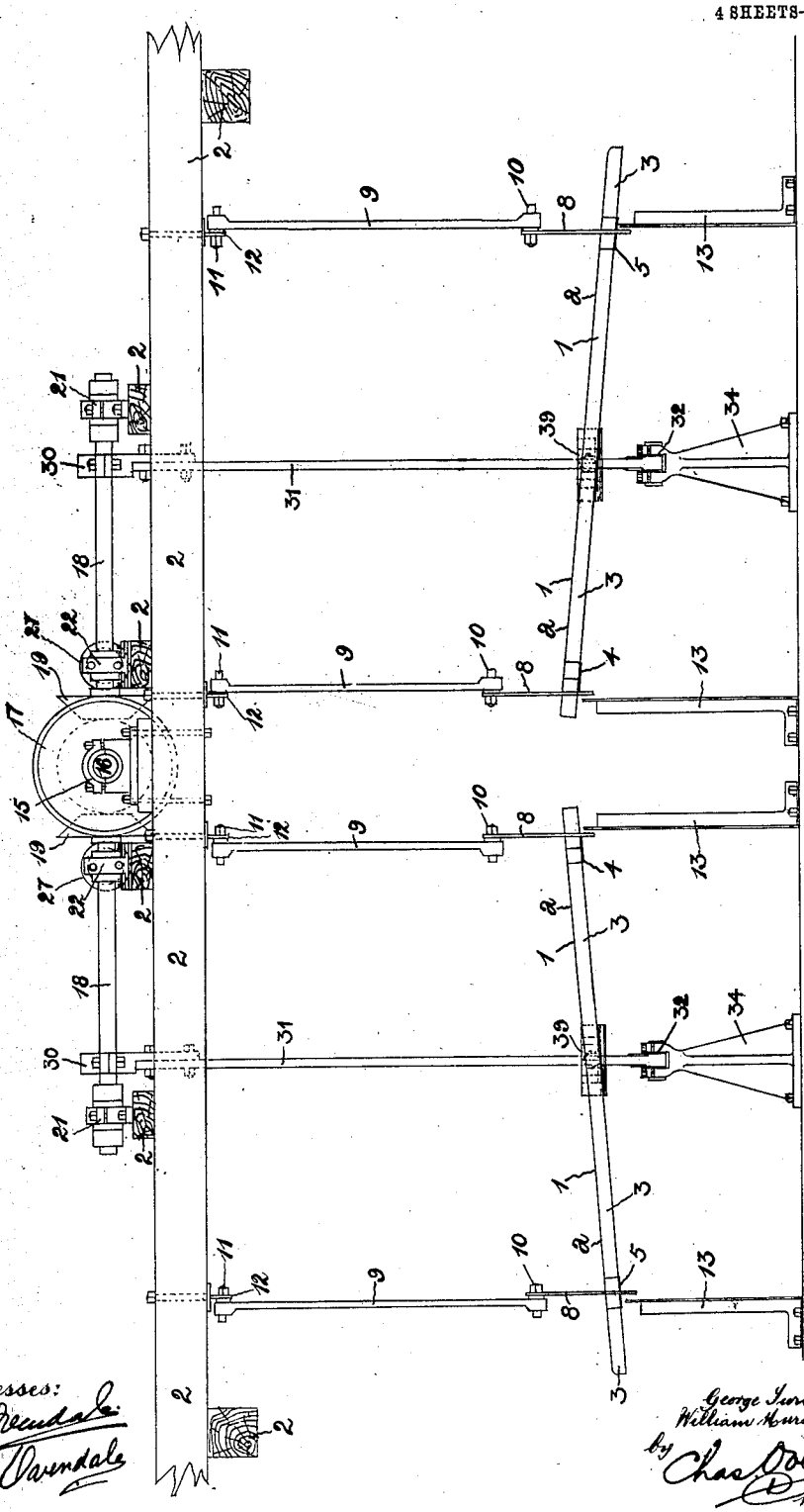

Fig. 1.

Witnesses:
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F. Ogendale

Inventors:
George Turnbull Hood
William Murdoch Cochrane
by Chas Ogendale
their attorney

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4 SHEETS—SHEET 2.

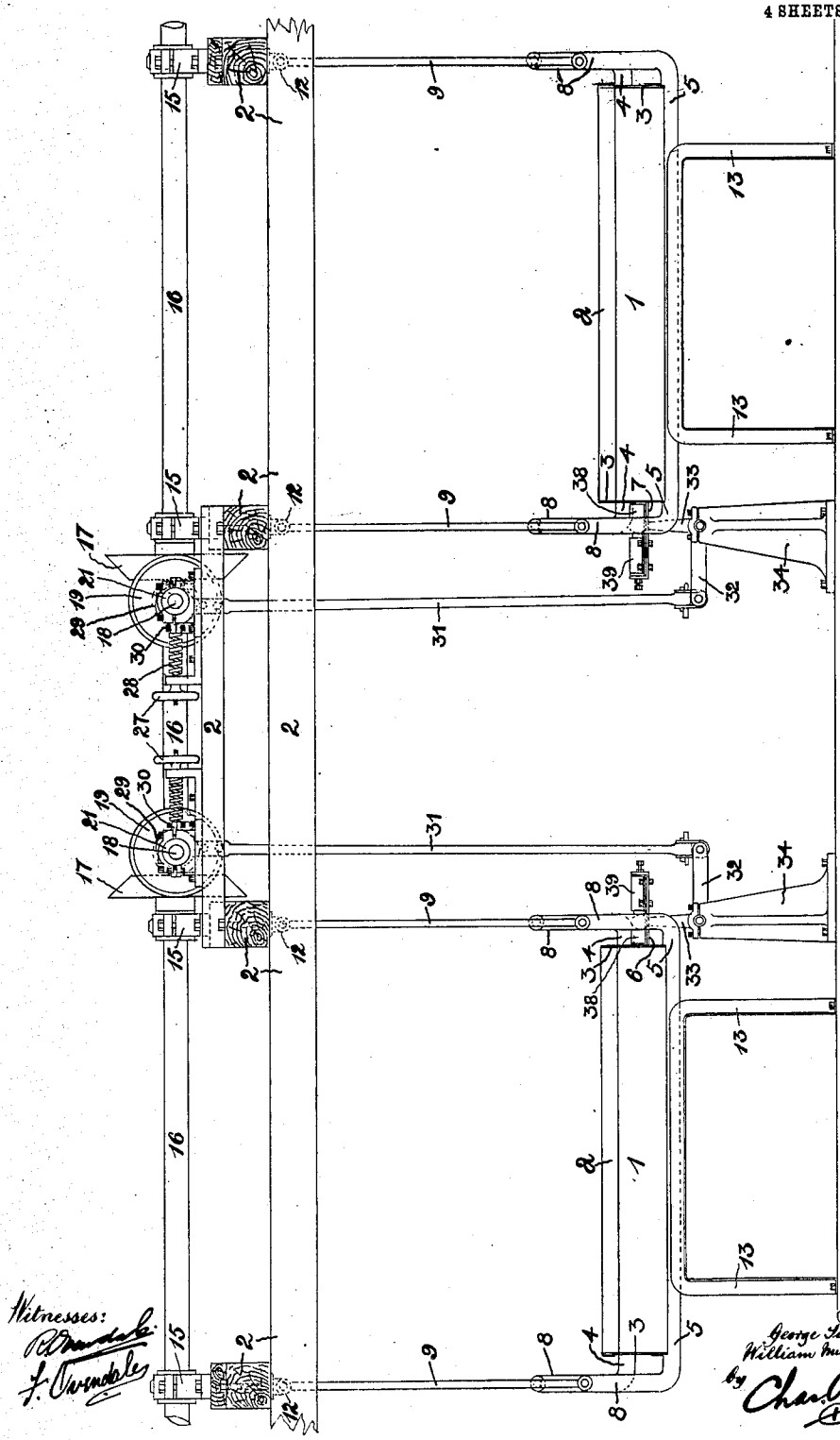

Fig. 2.

Witnesses:
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4 SHEETS—SHEET 3.

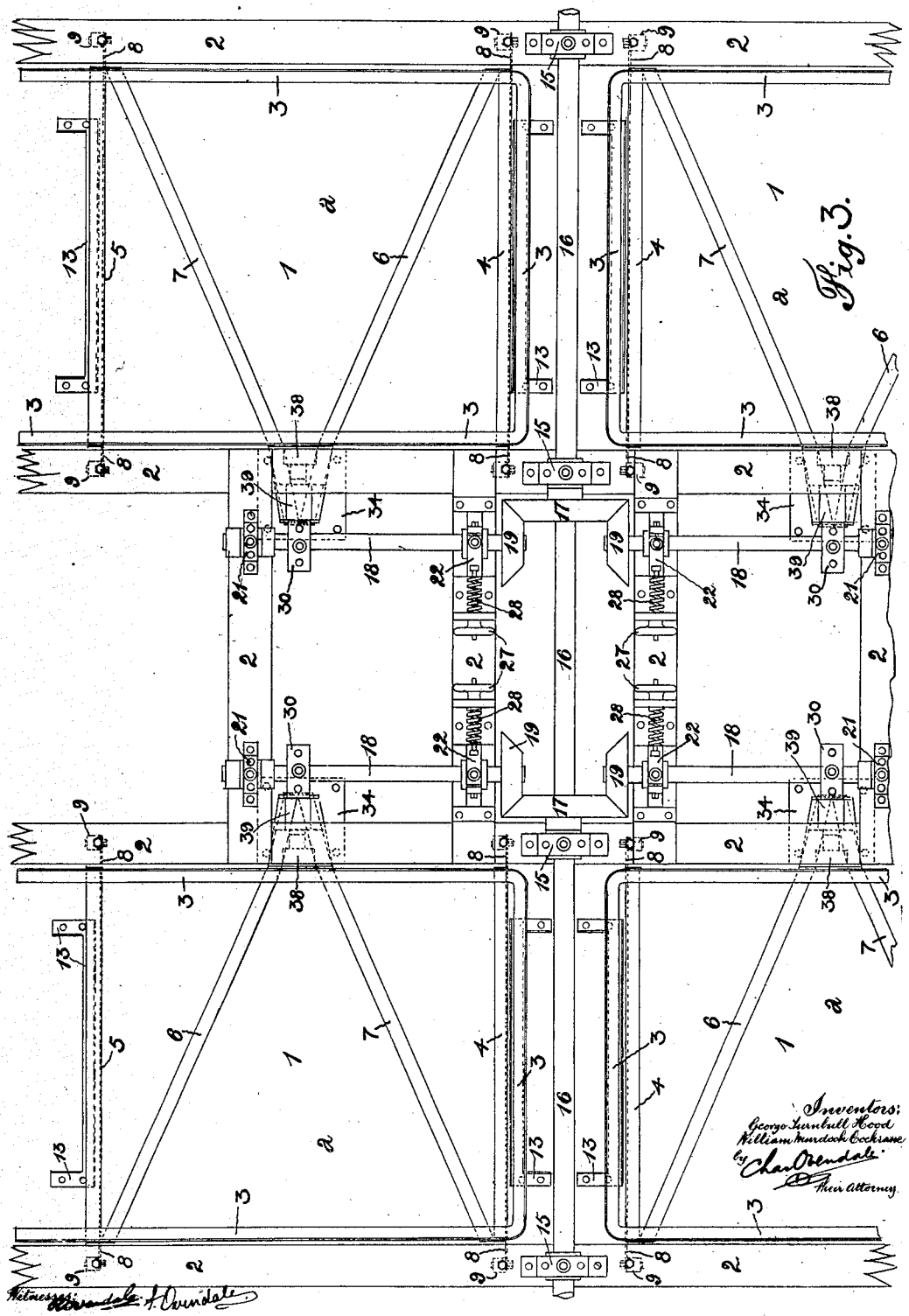

Fig. 3.

Witnesses: Chas. Orendale, F. Orendale

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No. 860,474. PATENTED JULY 16, 1907.

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4 SHEETS—SHEET 4.

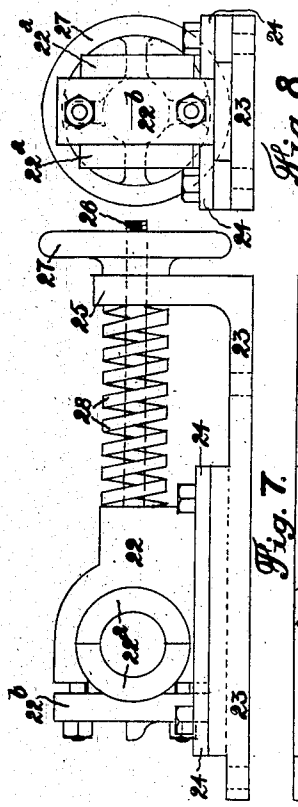

Fig. 8.

Fig. 7.

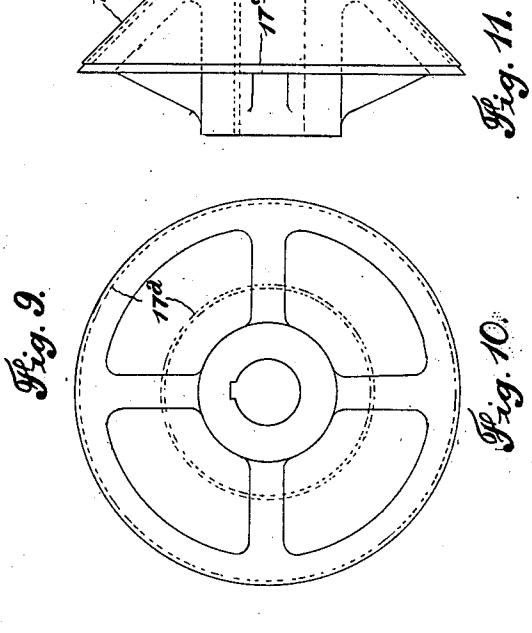

Fig. 9.

Fig. 11.

Fig. 10.

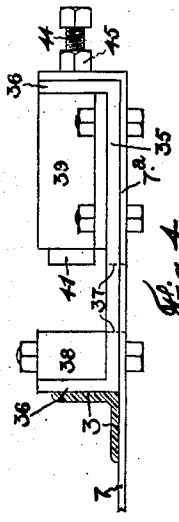

Fig. 4.

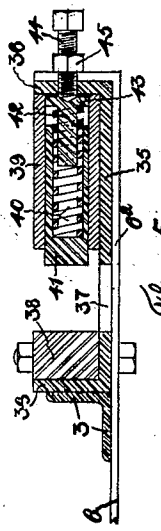

Fig. 5.

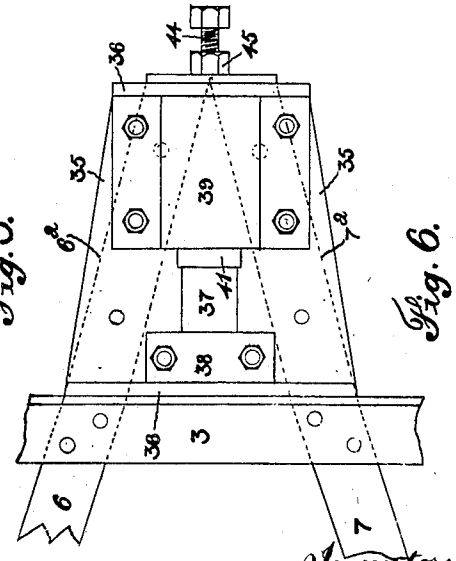

Fig. 6.

Witnesses:

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F. Brundale

Inventors:

George Turnbull Hood

William Murdoch Cochrane

by Chas. B. Brundale

Their Attorney

UNITED STATES PATENT OFFICE.

GEORGE TURNBULL HOOD AND WILLIAM MURDOCH COCHRANE, OF JOHANNESBURG, TRANSVAAL.

SHAKING AMALGAMATING-TABLE.

No. 860,474. Specification of Letters Patent. Patented July 16, 1907.

Application filed March 27, 1906. Serial No. 308,328.

To all whom it may concern:

Be it known that we, GEORGE TURNBULL HOOD and WILLIAM MURDOCH COCHRANE, subjects of the King of Great Britain, and residing at Johannesburg, Transvaal, have invented certain new and useful Improvements in Shaking Amalgamating-Tables, of which the following is a specification.

This invention relates to amalgamating tables at present principally employed in connection with tube mills, and which are ordinarily known as "shaking amalgamating tables" in contradistinction to the stationary tables.

The object of the present invention is to obtain greater efficiency and to obviate the excessive wear and tear which takes place with the present constructions of this type of amalgamating table; to prevent "knocking" or avoid jar in the table, and to provide a driving mechanism of simple and effective construction.

We will at once proceed with a detailed description of our invention by aid of the accompanying drawings, wherein

Figure 1 is an end elevation of the general arrangement of the tables and driving gear. Fig. 2 is a front elevation. Fig. 3 is a plan. Fig. 4 is an elevation, of the spring containing cylinder 39 and other parts fixed to the table, Fig. 5 is a longitudinal sectional elevation of Fig. 4, Fig. 6 is a plan of Fig. 4, Fig. 7 is a side elevation of one of the adjustable bearings 22, Fig. 8 is an end elevation of Fig. 7, Fig. 9 is a plan of Fig. 7, Fig. 10 is a front elevation of one of the beveled friction pulleys, and Fig. 11 is a side elevation of Fig. 10.

The tables 1 are preferably arranged, as shown in Figs. 1, 2 and 3, in two parallel rows with their upper or raised ends arranged back to back as shown more particularly in Fig. 1. One or more pairs of tables 1 may be employed, arranged as above described. In Figs. 2 and 3 two pairs or four tables are shown but it will be evident that the arrangement shown may be extended to provide any desired number. The top *a* of the table 1 provides the amalgamated surface over which the pulp is caused to flow.

Above the tables 1 is arranged a framework consisting of the beams 2 of wood or other suitable material. This framework 2 carries the mechanism for oscillating the tables.

The tables 1 are built upon or carried by the rectangular frame 3 braced by the connecting pieces 4, 5, top and bottom, and the intermediate cross pieces 6, 7. The outer extremities of the pieces 4, 5, which project beyond the sides of the table 1 are turned up in the form of, or have attached to them, vertical arms or brackets 8. To the upper extremities of each of these arms is hinged or pivotally connected a rod 9, the bolt 10 serving to make said pivotal connection. The upper extremities of the supporting arms 9 are, by means of bolts 11, in like manner pivotally connected to brackets or eye-bolts 12, which are, as shown, bolted or otherwise suitably fixed to the overhead framework 2. In the arrangement shown, four of the pivoted supporting rods 9 are provided for each table, one attached to each corner. The several tables are by this means so suspended that they can swing freely in one direction.

Arranged beneath the upper and lower ends of the table 1 are guides 13, which also serve as safety pillars should the table become disconnected in any manner from the means whereby it is supported. These guides 13 may as shown be bolted or otherwise suitably fixed to timbers or to any other suitable foundation below the tables.

Between the two parallel rows of tables and running in conveniently disposed bearings 15 supported by the overhead framework 2 is the main driving shaft 16. On this shaft is fixed a beveled friction pulley 17 covered with leather 17^a or other suitable material (see Figs. 10 and 11) which pulley serves for oscillating one pair of the tables. A similar pulley is provided on the shaft 16 for each pair of tables 1. In the construction shown the mechanism is so arranged that it oscillates the tables in a direction parallel with the longitudinal axis of the main driving shaft 16.

On the overhead framework 2 and arranged at right angles to the main shaft 16 are a number of countershafts 18, one for each table. On the inner extremities of these countershafts are fixed beveled friction pulleys 19 which gear the friction pulleys 17 on the main shaft 16. Each of the friction pulleys 17 drives two of the countershafts 18 and through the latter two of the tables 1. The outer ends of each of the countershafts 18 run in a bearing 21, and the inner ends, on which are fixed the friction pulleys 19, run in adjustable yielding bearings 22. One of these latter bearings 22 is shown in Figs. 7 to 9, in which 23 represents a sole plate, and 22 the bearing fitted with the brasses 22^a which are secured by means of the cap 22^b. The bearing is adapted to slide on the sole plate 23 between guides 24. The sole plate 23 at one extremity is constructed with a bracket or projection 25 through which extends a screw 26, which at its inner extremity is connected to the sliding bearing 22. 27 is a nut which serves as a hand wheel for adjusting the bearing against a spiral spring 28 which surrounds the screw 26 between the bearing 22 and the bracket or projection 25 on the sole plate 23. By rotating the screw 26 in either direction the bearing 22 is moved correspondingly along the sole plate 23 against the spring 28 to suitably adjust the countershaft 18 and its friction pul-

ley 19 in relation to the friction pulley 17 on the main shaft 16.

On each of the countershafts 18 is provided an eccentric 29 encircled by an eccentric strap 30 from which depends an eccentric rod 31. The lower extremity of the eccentric rod 31 is pivotally and adjustably connected to one arm 32 of a bell-crank lever, which lever is fulcrumed in a conveniently disposed bracket or standard 34 bolted or otherwise securely fixed to the foundation 14 at one side of the table. The other arm 33 of this bellcrank lever, which projects in an upward direction, serves for transmitting the oscillating motion derived from the eccentric 29, to the table.

The two intermediate pieces 6, 7, of the frame of the table 1 are extended or project beyond one side of the table, as indicated at 6^a 7^a. This construction is shown more clearly in Figs. 4 to 6 in which 3 represents the rectangular frame of the table 1. On the extensions 6^a 7^a is bolted, riveted or otherwise securely fixed, a plate 35 which is turned up at the ends as shown at 36. In the plate 35 is formed a hole 37 up which projects the extremity of the arm 33 of the bellcrank lever. On the plate 35 at one side of the hole is bolted a block 38 which is engaged by the extremity of the arm 33 of the bell-crank lever when the latter is moved in one direction. On the plate 35 at the opposite side of the hole 37 is bolted or otherwise securely fixed a cylinder 39 in which is arranged a spiral spring 40.

41 is a plunger working against the spring 40. The head or outer extremity of this plunger 41 is kept pressed forward by the spring 40 so that it always engages the upper extremity of the arm 33 of the bellcrank lever.

42 is a cylindrical piece which projects into the center of the spiral spring 40 which piece 42 at its rear extremity is formed with an enlargement forming an annular shoulder 43 which forms an abutment for the spiral spring 40.

44 is a bolt or screw which screws through the upturned part 36 of the plate 35 and at its inner end engages the rear end of the cylindrical piece 42 and serves for adjusting the spring 40 by moving said piece 42 forward against the spring when it is rotated.

45 is a lock-nut for fixing the screw 44 after any desired adjustment of the spring 40 has been effected. The spring 40 is suitably adjusted according to the weight of the table.

The cylinder 39 and spring 40, by maintaining a positive resilient connection between the arm 33 of the bell-crank lever and the table, operate to prevent the transmission of jar to the table on the reversal of direction of motion of the bell-crank lever.

As shown, mechanism similar to that above described is provided for each of the tables.

What we claim as our invention and desire to protect by Letters Patent is:—

1. In an amalgamating table of the nature specified, the combination with the table comprising the frame and the stays, the latter formed with extensions beyond one side of the table, of a plate formed with a slot carried by said extensions, a block secured to said plate, a cylinder secured to said plate, a piston and spring in said cylinder, means for regulating the tension of the spring, and a lever, one arm of which projects up through the slot in the plate and engages the block and piston to oscillate the table, and means for actuating the lever.

2. In an amalgamating table of the nature specified, the combination of a table having a portion of its frame bent upwardly, a supporting frame, links pivoted at their upper ends to said supporting frame and having their lower ends pivoted to the upwardly projecting portions of the table frame, means for oscillating said table and stationary guides below said tables and normally out of contact therewith.

In witness whereof we have hereunto set our hands in the presence of two subscribing witnesses.

GEORGE TURNBULL HOOD.
WILLIAM MURDOCH COCHRANE.

Witnesses:
CHAS. OVENDALE,
R. OVENDALE.