

H. F. JURIS.
TABLE ADJUSTMENT FOR ORE CONCENTRATORS.
APPLICATION FILED MAR. 3, 1910.

984,567.

Patented Feb. 21, 1911.

3 SHEETS—SHEET 1.

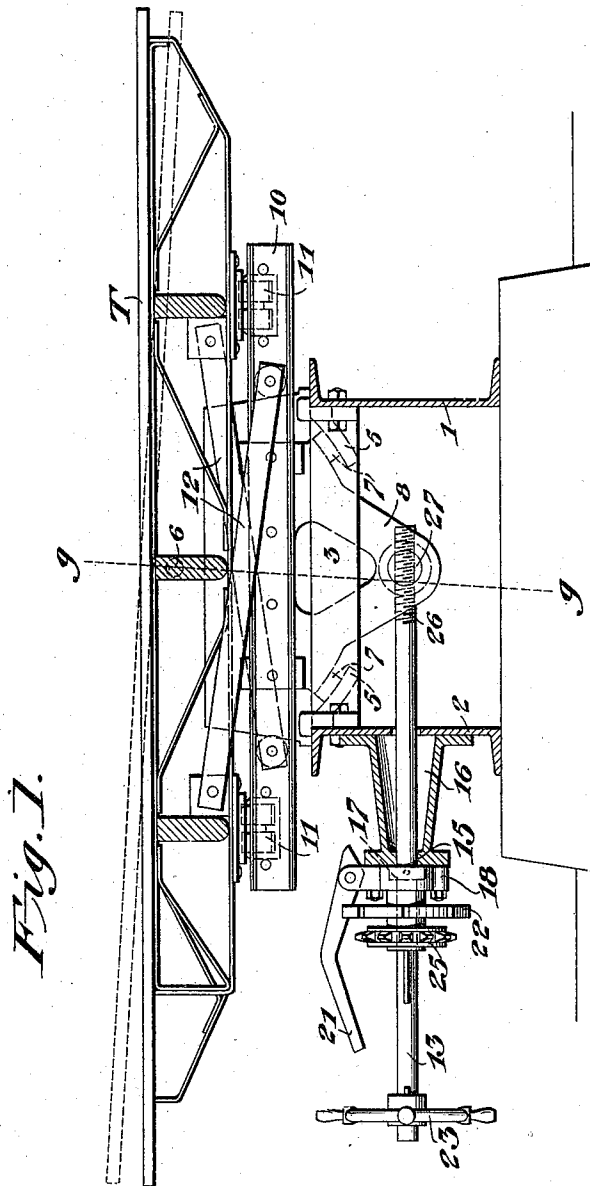


Fig. 1.

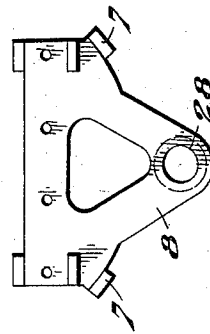


Fig. 8.

Witnesses

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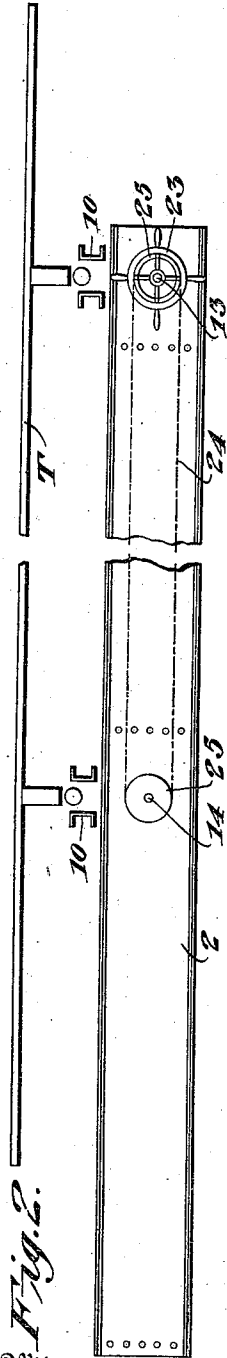


Fig. 2.

Witnesses

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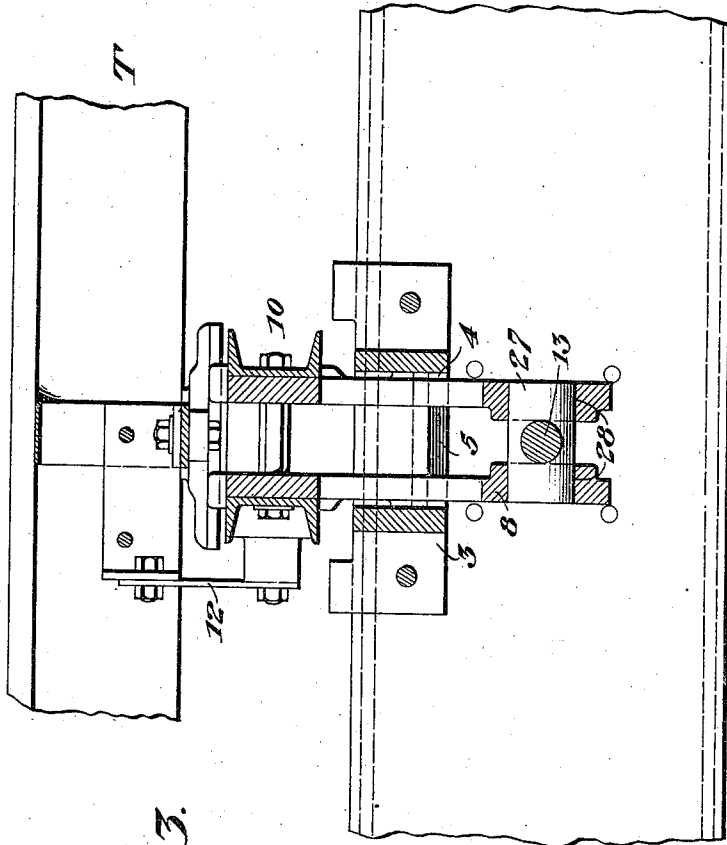


Fig. 3.

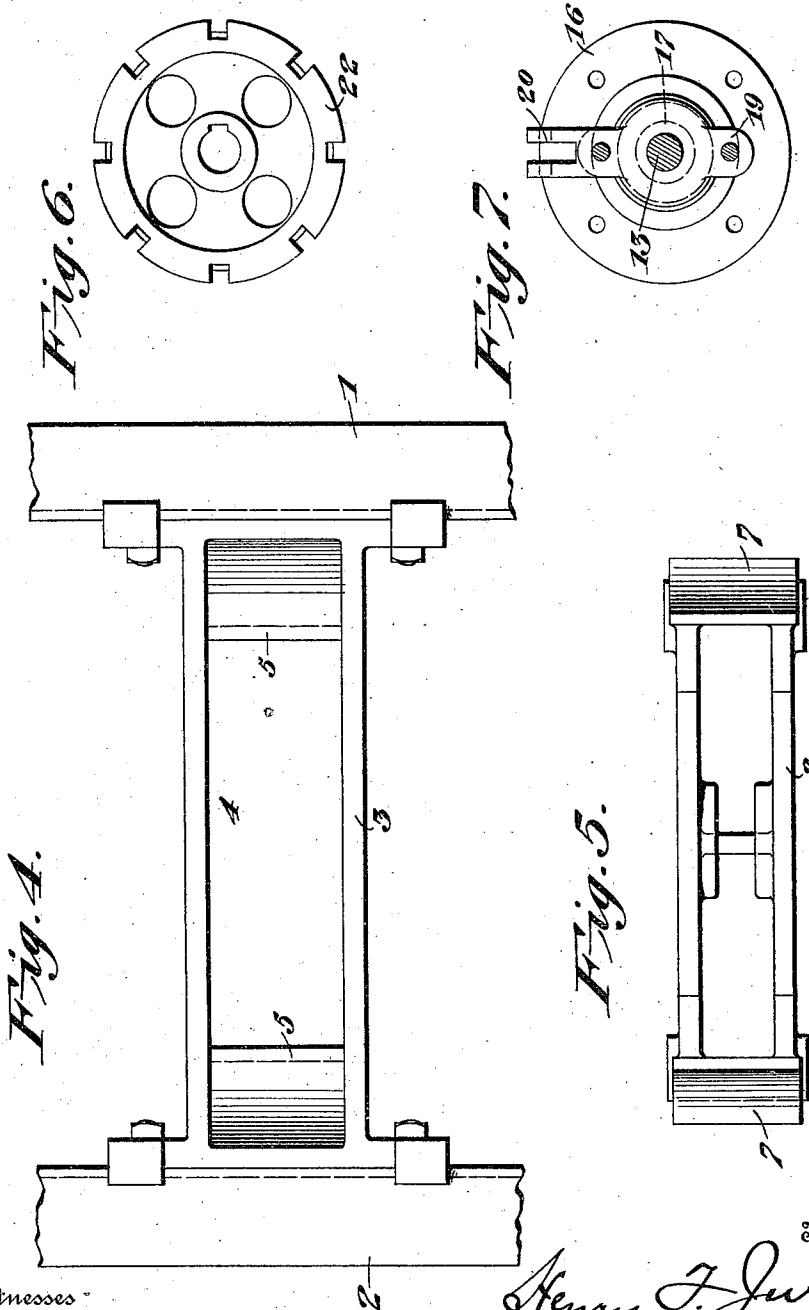
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

HENRY F. JURS, OF DENVER, COLORADO, ASSIGNOR TO THE MINE & SMELTER SUPPLY COMPANY, OF DENVER, COLORADO, A CORPORATION.

TABLE ADJUSTMENT FOR ORE-CONCENTRATORS.

984,567.

Specification of Letters Patent.

Patented Feb. 21, 1911.

Application filed March 3, 1910. Serial No. 547,106.

To all whom it may concern:

Be it known that I, HENRY F. JURS, a citizen of the United States, residing in the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Table Adjustments for Ore-Concentrators, of which the following is a specification.

My invention relates to an improvement in table adjustments for ore concentrators, and the object is to provide means for tilting the entire table uniformly and with precision throughout its entire length so that the entire working surface of the table will be in one and the same plane whether adjusted to a level or an inclined position; and a further object is to provide means for locking the table when adjusted so that the desired position to which it is adjusted is always maintained until readjustment is made, when it is again locked. And this is accomplished by means of at least two shafts operated synchronously through the medium of transmission mechanism, these shafts located at or near opposite ends of the table bed or base frame, and each having a screw-threaded portion which turns in a correspondingly threaded orifice in a compensating nut, which nuts are each journaled in a yoke resting and capable of being rocked in a saddle and surmounted by a bolster which latter carry in their ends the anti-friction devices upon which the table is reciprocated.

This invention further consists in a novel assemblage of cooperating elements, all of which contribute to the consummation and commercial success of my present invention.

In the accompanying drawings:—Figure 1 is a view taken from one end of the concentrator, Fig. 2 is a diagrammatic view taken from one side of the machine with parts omitted, Fig. 3 is a fragmentary view in vertical longitudinal section taken on line *g—g* of Fig. 1, Fig. 4 is a plan view of one of the saddles, Fig. 5 is a similar view of one of the yokes or rockers, Fig. 6 is a view of the lock wheel, and Fig. 7 is a view of one of the tubular brackets or pedestals through which the shafts extend and turn, Fig. 8 is a detail view of the saddle and side members.

The bed or base frame is composed preferably of two steel I-beams 1 and 2 spaced

apart and made into a rigid frame by means of two saddles 3, 3, bolted thereto, as shown in Fig. 4. These saddles are cast with an open center 4, with the webs 5, 5, at opposite ends thereof, curved in the arc of a circle struck from the point 6, which is the center of oscillation of the table T when brought to a level or tilted transversely. The function of these webs is to form guide tracks or ways for the runners 7, 7, each yoke 8 being equipped with two of these as shown in Fig. 1, the yoke itself extending down into and guided by the sides of the open center 4. Each yoke carries a cross bolster 10 at the top, made up of two steel I-beams preferably, bolted to the yoke as seen in Fig. 3, and the table or deck T is mounted on anti-friction roller bearings 11, 11, located at or near the ends of the bolsters. Plate springs 12, 12, extend from opposite sides of the table or deck to opposite ends of each bolster, and are rigidly bolted at each end, their function being to maintain the table deck properly superimposed over the anti-friction rollers. Without these flexible springs, the lower or concentrates end of the table when tilted off the level would have a tendency to overbalance and slide off the rollers, but this tendency is prevented by means of these springs.

The table is leveled, tilted and locked by the following mechanism: Two screw shafts 13 and 14 are rotatably supported in journals 15, formed at the outer ends of the hollow pedestals or brackets 16, where they are held against endwise movement preferably by means of collars 17, secured thereon, and caps 18 and 19 bolted to the outer ends of the hollow pedestals or brackets over said collars, as shown in Fig. 1. The cap 18 is forked at 20, as shown in Fig. 7, and a locking lever 21 is pivoted thereto in position to enter one of the notches of the wheel 22, which latter is keyed to the shaft, in order to lock the shaft when in the right position, against turning, a hand wheel 23 being provided at the outer end for turning the shaft and with it the companion shaft 14 at the other end of the machine, through the medium of the sprocket chain 24 passing over sprocket wheels 25, 25. Screw-threads 26 are cut on the inner ends of these threaded shafts 13 and 14, and these threads turn in

threaded orifices in the cylindrical compensating nuts 27, 27, journaled in bearings 28, 28, formed in the lower ends of the two yokes. While the operation is probably clear from the description already given, nevertheless to briefly recapitulate, assuming the table to be level as shown in full lines in Fig. 1, it is tilted to the angle required by simply turning the hand wheel 23 to the right. The screw-threads of the shafts 13 and 14 operate simultaneously in their respective compensating nuts 27, 27, in the lower ends of the yokes, thereby exerting a firm, steady, and uniform pull on each, and with the rocking of the yokes correspondingly tilting the table until it attains the position indicated by the dotted lines, or in fact, any other angle desired, when the lever 21 is let down into the notch opposite it, or the one nearest it. To return the table to level, or reduce its slope, the shaft 13 is unlocked and the hand wheel 23 is reversed.

The mechanism is simple, substantial and durable, besides being most effectual to tilt and lock the table with perfect ease, with the absolute assurance of accuracy and uniformity throughout every square inch of its area, without straining, bending, twisting, or in the slightest degree impairing its concentrating surface due to frequent and repeated readjustments.

Although I have adhered more or less closely in the description to the one form of structure illustrated, it is evident that I am entitled to any and all equivalents legitimately coming within the scope of the claims.

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

1. The combination with a bed or base frame, a cross saddle extending from one side of the bed or base frame to the other, and having an open center with curved guide tracks at each end thereof, of a yoke fitted to and guided by the sides of said open center in the saddle, and centered by and resting and capable of being rocked upon said guide-tracks, a portion of the yoke extending laterally some distance from the point of support of the yoke, whereby to act as a lever, and means supported on the base and connected with said laterally extending portion of the yoke for swinging the latter upon the guide-tracks.

2. The combination with a bed or base frame, the sides of which are connected by a cross-saddle having an open center with curved guide tracks at each end thereof, of a yoke fitted to and guided by the sides of said open center in the saddle, and centered by and resting and capable of being rocked upon said guide-tracks, the yoke having a compensating nut swiveled therein, a shaft

rotatably connected with the bed or base frame against endwise movement, and having screw-threads which turn in a threaded orifice in the compensating nut, whereby to turn and adjust the yoke.

3. The combination with a bed or base frame the sides of which are connected by cross-saddles having open centers with curved guide tracks at each end, of yokes fitted to and guided by the sides of said open centers in the saddles and centered by and resting and capable of being rocked upon said guide tracks, each yoke having a compensating nut swiveled therein, shafts rotatably connected with the bed or base frame against endwise movement and having screw threads which turn in threaded orifices in the compensating nuts, and means for transmitting motion from one shaft to the other whereby both yokes are rocked simultaneously and uniformly.

4. The combination with a bed or base frame, yokes centered therein and bolsters carried by the yokes, of a table, anti-friction bearings interposed between the bolsters and table, and diagonally disposed plate springs located on opposite sides of each bolster and extending from each side of the table to points near the opposite ends of the bolster and rigidly secured at their ends, whereby to maintain the table deck properly superimposed over the anti-friction rollers.

5. The combination with a bed or base frame, saddles extending across between the sides of the base, said saddles having open centers and curved guide tracks at opposite ends thereof, of yokes centered in the open centers of the saddles and having runners which rest and turn upon the guide tracks, bolsters carried on the upper ends of the yokes, the table supported on the bolsters, and compensating nuts swiveled in the yokes some distance from their supports, of shafts rotatably supported by the bed or base frame and prevented from endwise movement relative thereto, means for transmitting motion from shaft to shaft, said shafts each having a screw-threaded portion which turns in the threaded orifices in the nuts.

6. The combination with a bed or base frame, saddles extending across between the sides of the base, said saddles having open centers and curved guide tracks at opposite ends thereof, of yokes centered in the open centers of the saddles and having runners which rest and turn upon the guide tracks, bolsters carried on the upper ends of the yokes, the table supported on the bolsters, and compensating nuts swiveled in the yokes some distance from their supports, of shafts rotatably supported by the bed or base frame and prevented from endwise movement relative thereto, means for transmitting motion from shaft to shaft, said

shafts each having a screw-threaded portion
which turns in the threaded orifices in the
nuts, one shaft having a hand wheel and a
notched lock wheel thereon, and a lever piv-
5 oted in position to be dropped into one of
said notches to lock the shafts, yokes and
table in the position to which adjusted.

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

HENRY F. JURS.

Witnesses:

ARTHUR R. WILSON,
D. EDGAR WILSON.