L. E. PORTER.

SUGAR MILL.

No. 41,265. Patented Jan. 12. 1864.

Fig. 1.

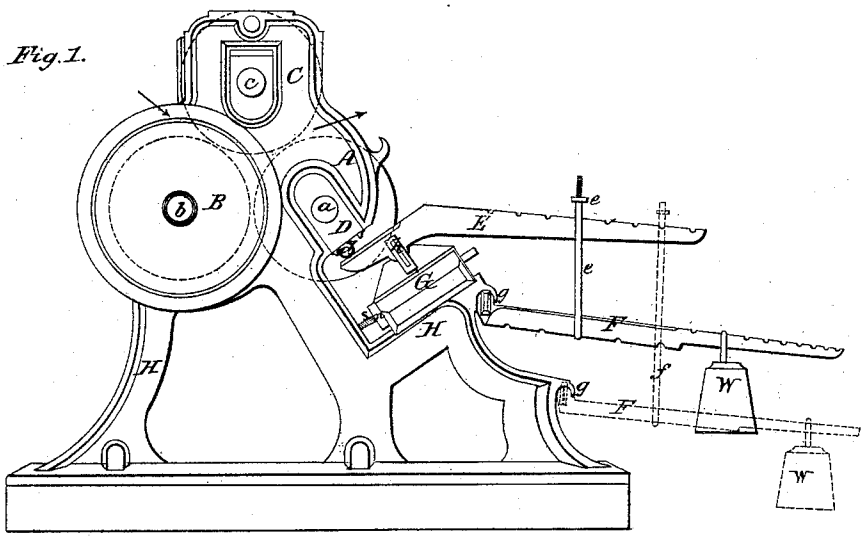


Fig. 2.



Fig. 4.

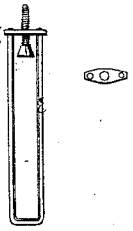
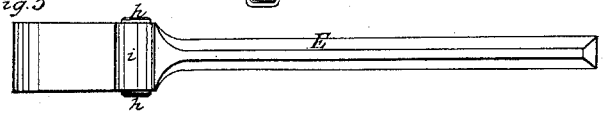


Fig. 3.



Fig. 5



Witnesses.
Thomas Sharp
Lewis L. Coburn.

Inventor.
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

LUTHER E. PORTER, OF LAKE MILLS, ASSIGNOR TO E. W. SKINNER, OF MADISON, WISCONSIN.

IMPROVEMENT IN SUGAR-MILLS.

Specification forming part of Letters Patent No. **41,265**, dated January 12, 1864; antedated December 10, 1863.

To all whom it may concern:

Be it known that I, LUTHER E. PORTER, of Lake Mills, in the county of Jefferson and State of Wisconsin, have invented certain new and useful Improvements in Sugar-Mills; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and the letters and figures marked thereon, which form part of this specification.

In said drawings, Figure 1 represents a side view of my invention. Figs. 2 and 3 are respectively a longitudinal and cross section of the sliding fulcrum G. Fig. 4 is a front and top view of the loop *e*, and Fig. 5 is a view of the lower side of the lever E.

Similar letters in the different figures indicate corresponding parts of my invention.

The nature of my invention consists in a novel mode of adjusting the crushing-rollers of a sugar-mill by means of a lever operating upon sliding journal-boxes supporting the rollers, so that the pressure of said rollers upon the cane is equal throughout the entire length of the cane, notwithstanding the constant variation in the size thereof.

To enable others skilled in the art to understand how to construct and use my invention, I will proceed to describe the same with particularity, reference being made to the drawings.

In Fig. 1, H H′ represent the end frame, which supports the crushing-rollers, of which there are three, arranged horizontally in the positions indicated by the dotted circles marked A B C. The position of the rollers B C between which the cane is fed or put into the mill, is fixed; but the journals of the roller marked A *a a* are supported in a sliding box, (marked D,) which is fitted in a groove in the end frames, running toward the center of the roller C, so that the said roller A can move toward or recede from the roller C, as may be desired. The said roller A is kept in position by means of the lever E, operating upon the adjustable journal-box D, as shown, resting upon the fulcrum G, which is adjustable longitudinally upon the shoulder H by means of the screw *s* and the nut *n*, or in any other suitable manner.

d represents a small ball, which serves as a bearing between the lever E and the sliding box D, and may be adjusted at different points upon said lever, so that, in connection with the sliding fulcrum G, the short arm of said lever may be varied in length, as may be desired. A weight, W, is attached to the long arm of the lever E, of such weight and at such point thereupon as to cause the proper amount of pressure upon the sliding box D; or an additional lever, F, may be employed in combination with the lever E, as shown; or, if a still greater pressure should be desirable, the lever F may be arranged as shown by the dotted lines, by employing a loop, Fig. 4, of sufficient length. In the drawings the arrangement is shown only at one end of the roller A; but the same device, arranged in the same manner, is employed at each end of the roller, and, being duplicates, only one view is shown.

The operation of my invention is as follows: The weights W being suspended upon the levers E, the roller A is pressed up against the roller C. The cane is put into the mill between the rollers B C, as indicated by the red arrows, which are at such a distance apart as to break and partially crush the cane, which passes along and enters between the rollers A C, which press closely upon the cane and extract the juice, the pressure being equal throughout the entire length and varied diameter of the cane by means of the operation of the lever and weight, as described. Instead of operating said lever by means of a weight, as shown, a spring or other mechanical device may be employed, though I deem the employment of weights the cheapest and simplest method.

I do not confine myself to the particular arrangement of the levers shown and described, the material point being that the sliding box shall be adjusted by a lever provided with a suitable fulcrum, and operated by any power properly applied.

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. The combination and arrangement of the roller A, the adjustable journal-box D, with a lever or combination of levers, operating substantially as and for the purposes herein specified and shown.

2. In combination with said adjustable box and levers, the employment of the sliding fulcrum G, arranged and operating as and for the purposes herein shown and described.

LUTHER E. PORTER.

Witnesses:

S. M. ROWE,

E. E. BIGELOW.