

(No Model.)

A. McCORMICK.

ATTACHMENT FOR ORE CONCENTRATORS.

No. 325,104.

Patented Aug. 25, 1885.

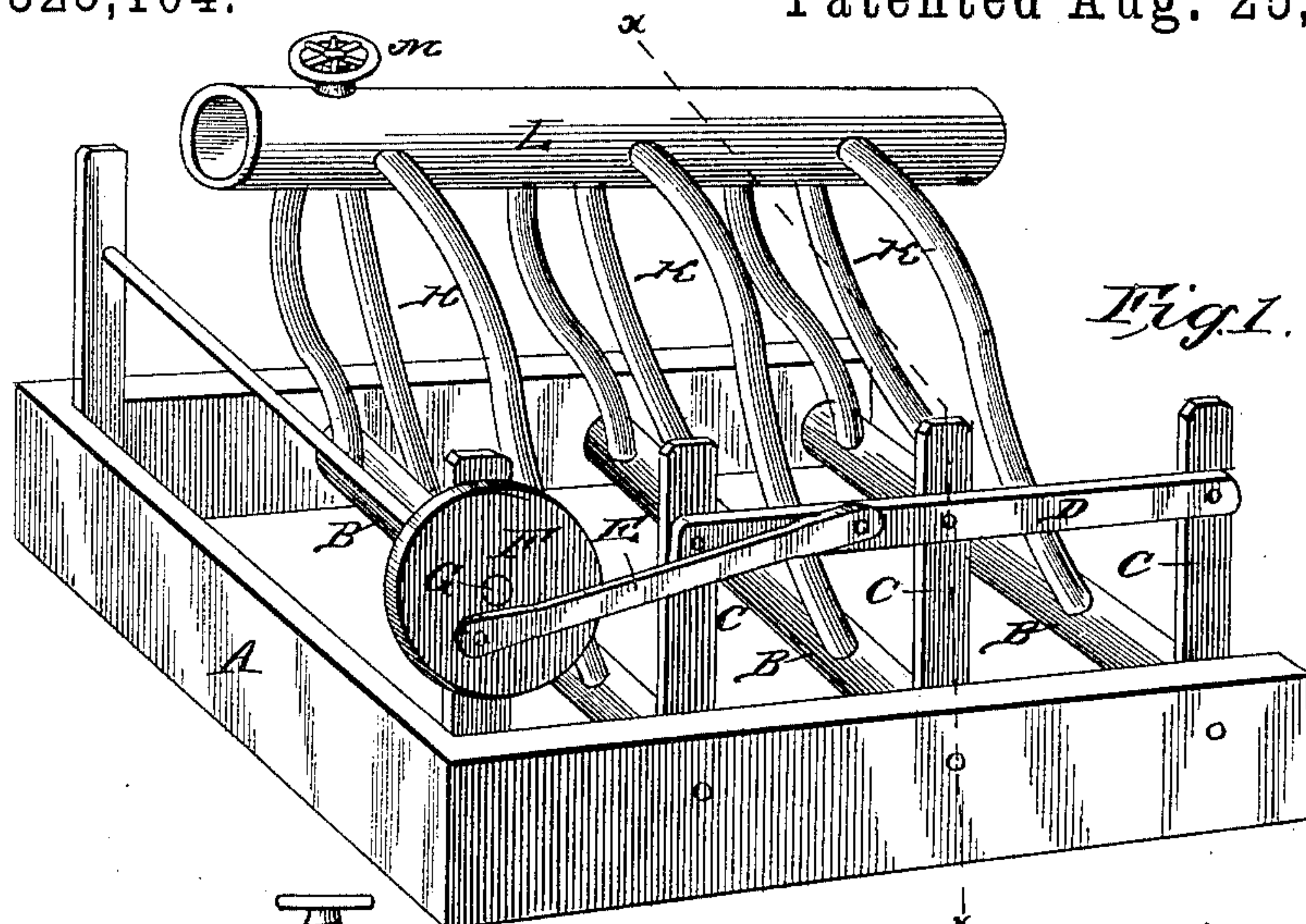


Fig. 1.

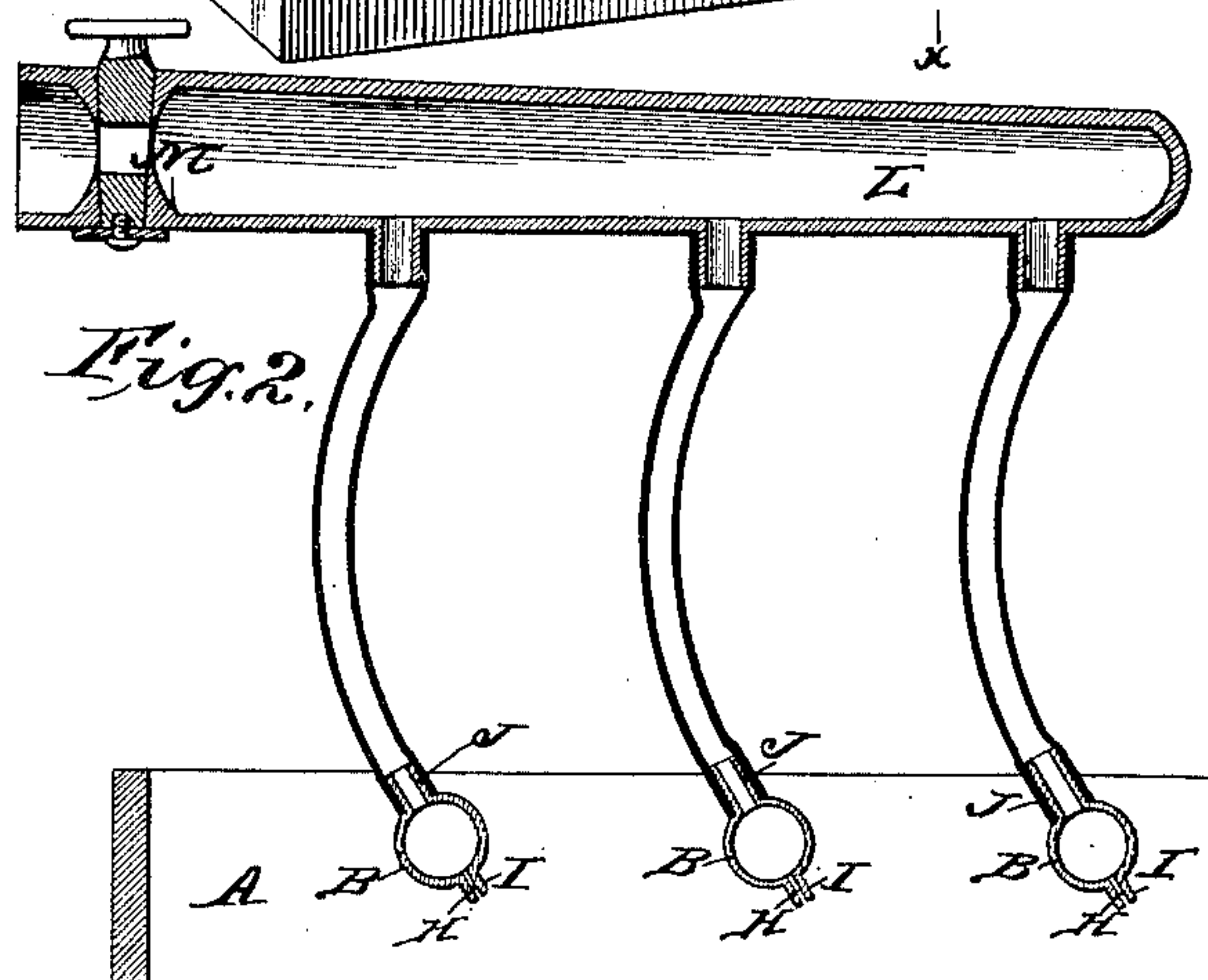


Fig. 2.

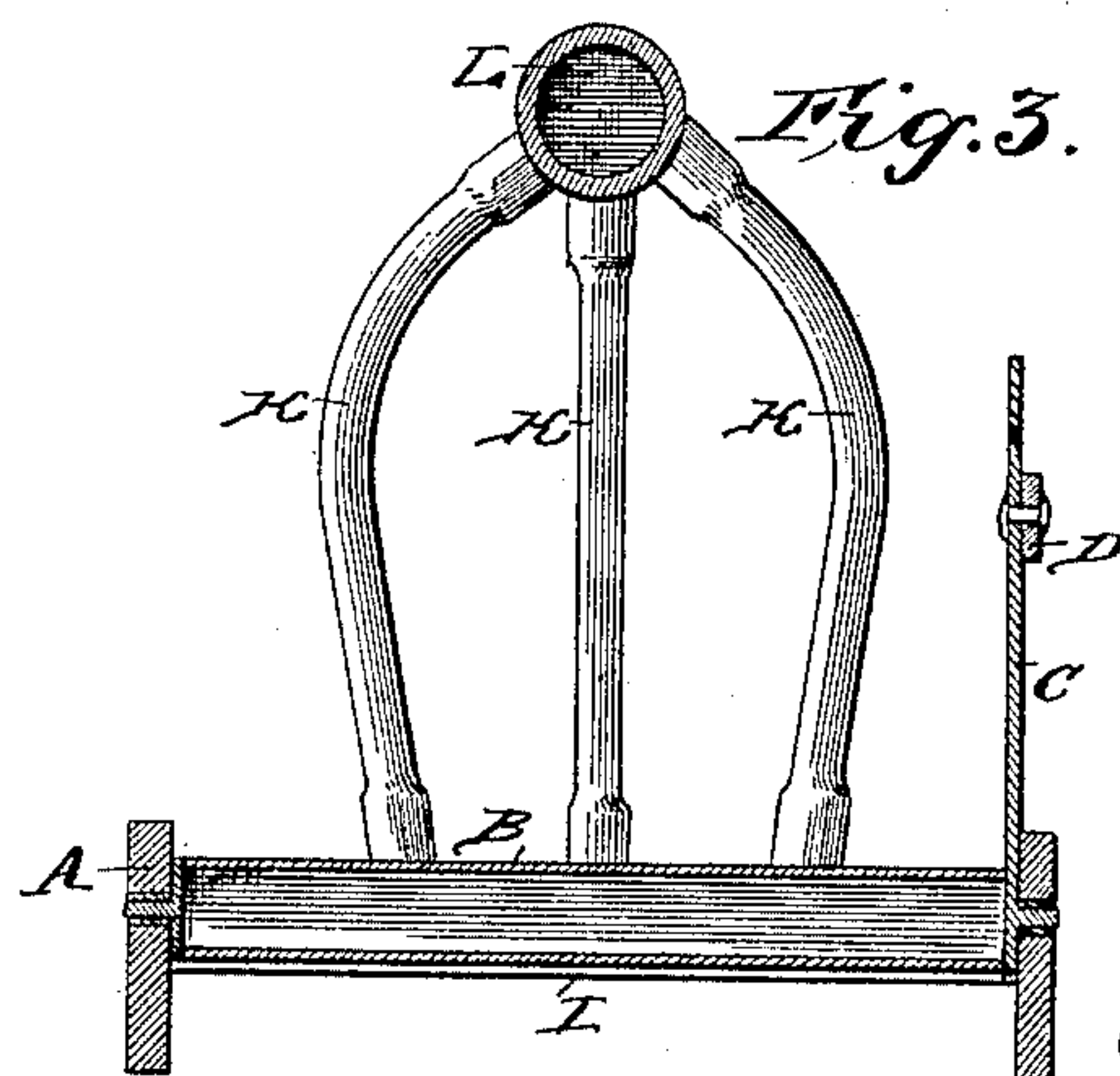


Fig. 3.

WITNESSES:

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# UNITED STATES PATENT OFFICE.

ALBERT McCORMICK, OF GOLDEN, COLORADO.

## ATTACHMENT FOR ORE-CONCENTRATORS.

SPECIFICATION forming part of Letters Patent No. 325,104, dated August 25, 1885.

Application filed March 9, 1885. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT McCORMICK, a citizen of the United States, and a resident of Golden, in the county of Jefferson and State of Colorado, have invented certain new and useful Improvements in Attachments for Ore-Concentrators; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of my improved attachment for ore-concentrators. Fig. 2 is a longitudinal vertical sectional view of the same, and Fig. 3 is a vertical transverse sectional view taken on the line *x x* in Fig. 1.

The same letters refer to the same parts in all the figures.

This invention relates to attachments for ore-concentrators of that class in which the so-called "wet process" is employed; and it has for its object to provide a device for saving the slime in the concentration of all refractory ores, thereby increasing the ultimate yield.

With this end in view the invention consists in a device adapted to be attached to the concentrating-tables, and comprising, within a suitable frame, a series of transverse rocking or vibrating cylindrical nozzles having longitudinal slits or openings, through which jets, or, more correctly, thin, unbroken sheets of hot or cold air or steam may be forced against the surface of the pulp as it passes over the table, thus skimming the slime off and forcing it against the pulp or water current passing over the table, and carrying it over the head of the table and depositing it in the box or receptacle, together with the mineral and heavier particles.

The construction of the device will now be more fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, A designates a suitable frame or base, adapted to be attached to a concentrating-table, which latter, however, is not shown in the drawings. The said frame affords bearings for a series of transverse cylinders, B B, each of which is provided at one end with an upright arm, C, all of said arms being connected by a pivoted rod,

D. The latter is connected by a pivoted connecting-rod or pitman, E, with a crank wheel or disk, F, upon a shaft, G, which may be driven in any suitable manner and by any suitable power, thereby transmitting to the cylinders B B a rocking or oscillating motion. I would have it understood, however, that such motion may be imparted to the cylinders in any other suitable manner without departing from the spirit of my invention. Each of the cylinders is provided on its under side with a longitudinal slit or opening, H, extending through its entire length, and at the sides of which flanges I I may be formed or secured, if deemed necessary or desirable. The upper sides of the cylinders are provided with tubular projections J, connected by flexible tubing K with the steam or air supply pipe L, to which the steam or air may be conveyed from any suitable source, and which is provided with a cock or valve, M, for the purpose of regulating and controlling the flow.

The operation and advantages of this invention will be readily understood from the foregoing description, taken in connection with the drawings hereto annexed. While the cylindrical nozzles are being vibrated, a current of steam or hot or cold air is forced through the pipe L, flexible tubes K, and through the nozzles, striking the surface of the pulp passing over the table, and intercepting the slime or skimming it off and forcing it over the head of the table.

Owing to the varieties in the construction of concentrators or concentrating-tables now in use, various minor changes may be found necessary in the construction of this device; and I would therefore have it understood that I do not limit myself to the precise construction herein claimed, but reserve to myself the right to all such modifications as may be resorted to without departing from the spirit of my invention.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. An attachment for concentrating-tables, comprising a series of transverse vibrating nozzles through which steam or air may be forced against the surface of the material passing over the table, substantially as and for the purpose herein set forth.

2. The combination of a frame, a series of cylindrical nozzles mounted transversely in the same and having longitudinal slits or openings in their under sides, mechanism for rocking or vibrating the said nozzles, and means adapted for receiving steam or air under pressure and for supplying the same to the said nozzles while they are being vibrated, substantially as and for the purpose set forth.
3. The combination of a frame, a series of cylindrical nozzles mounted transversely in

the same, flexible tubes, a steam or air supply pipe, and mechanism for rocking or vibrating the said nozzles, substantially as and for the purpose herein set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

ALBERT McCORMICK.

Witnesses:

JOS. GENOCCHIO, Jr.,  
CHARLES ELLIOTT.