

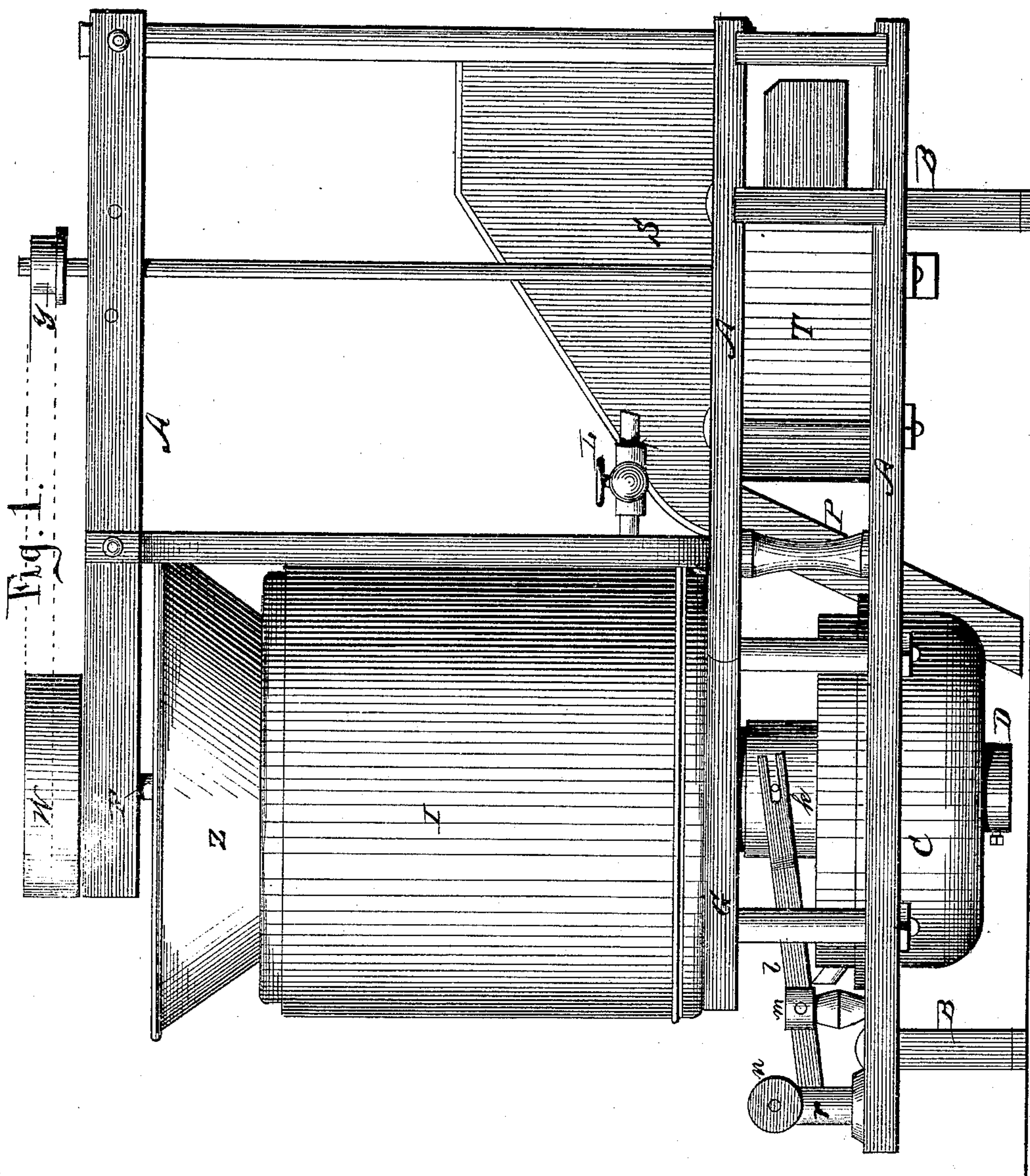
(No Model.)

2 Sheets--Sheet 1.

J. N. KNOX.  
Grain Scouring Apparatus.

No. 232,979.

Patented Oct. 5, 1880.



Witnesses:  
*W. C. McArthur,*  
*John C. Rogers*

Inventor.  
*J. N. Knox,*  
Per. *W. H. Alexander*  
Attorney.



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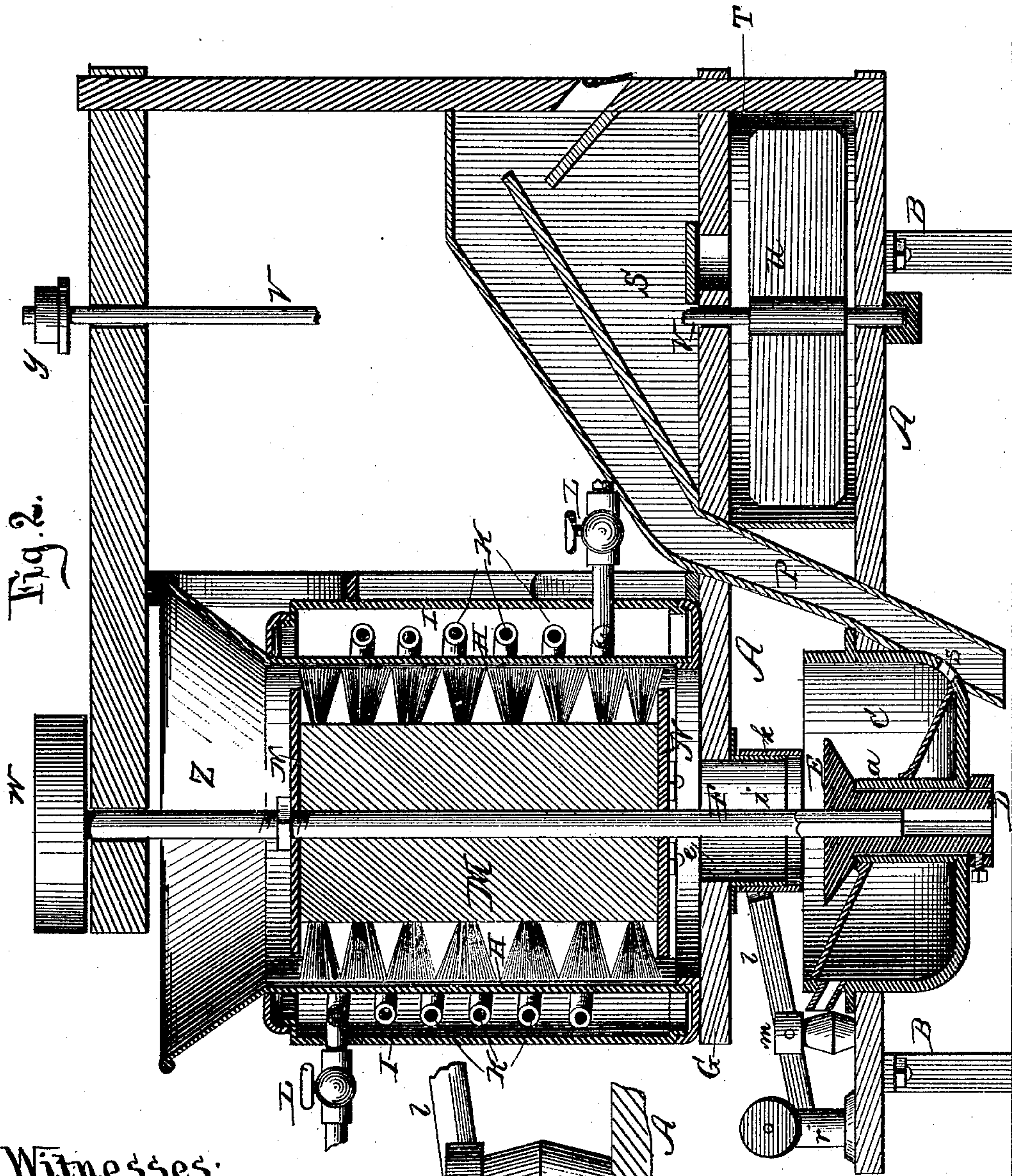
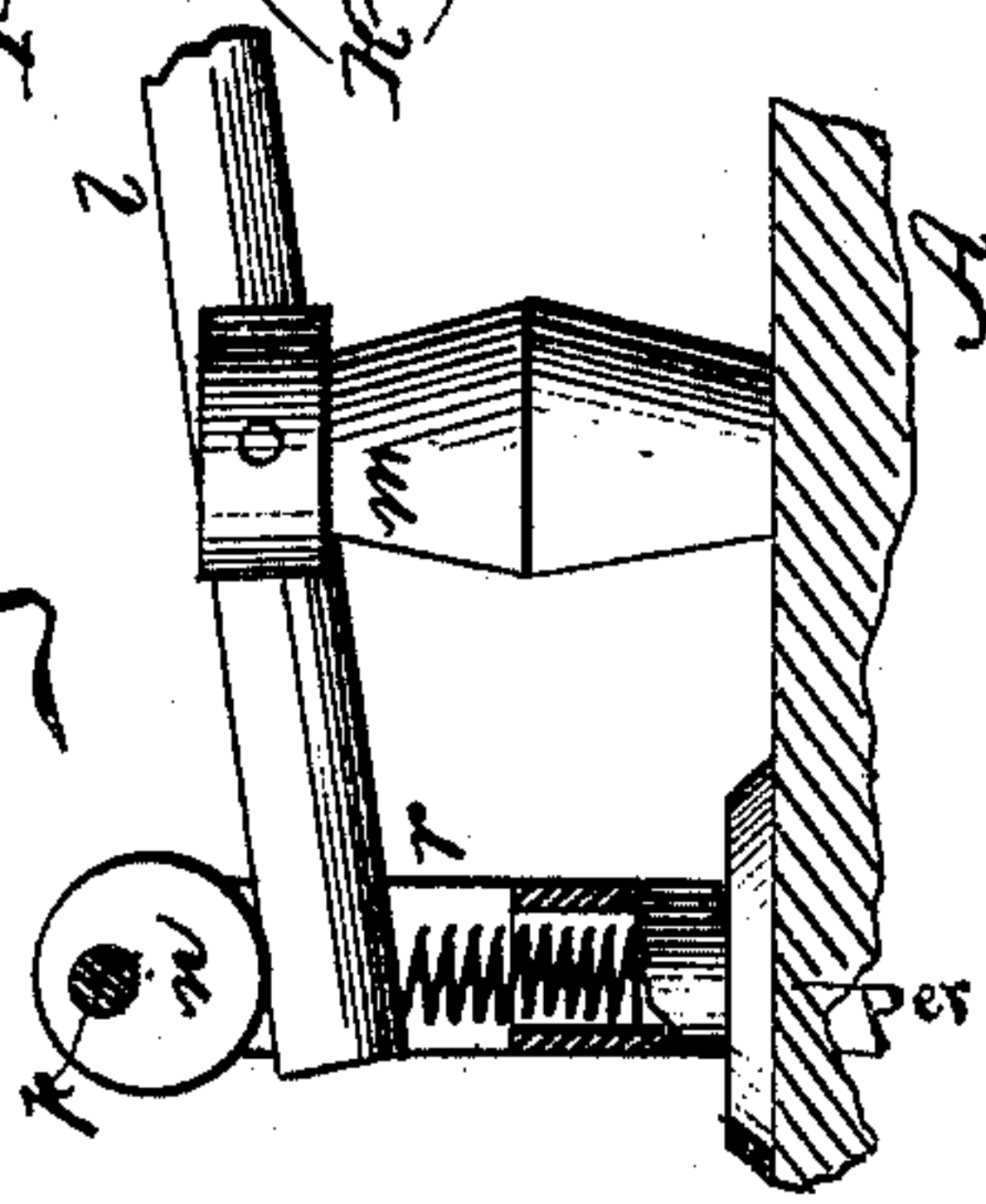


Fig. 2.

Fig. 3.



Witnesses:

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By Alexander

Attorney.



# UNITED STATES PATENT OFFICE.

JOSIAH N. KNOX, OF EVANSVILLE, INDIANA.

## GRAIN-SCOURING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 232,979, dated October 5, 1880.

Application filed June 19, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, JOSIAH N. KNOX, of Evansville, in the county of Vanderburg and State of Indiana, have invented certain new and useful Improvements in Grain-Scourers; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

This invention relates particularly to certain improvements in that class of grain separators and scourers for which Letters Patent of the United States were granted to W. C. Knox, June 29, 1869, and August 9, 1870, and numbered, respectively, 92,061 and 106,177, although the said invention is equally applicable to all other kinds of grain separators, scourers, and smut-machines.

The nature of my invention consists in the combination of the several parts hereinafter to be described, and which will be specifically set forth in the claim.

In the drawings, Figure 1 represents a side elevation, Fig. 2 a central vertical section, and Fig. 3 a detail, of my invention.

The letter A indicates the frame of the machine, mounted upon suitable legs or supports B, and C a circular metallic receptacle into which the grain is discharged from the scourer above. This receptacle, at the center of its bottom, is provided with a small tube, *a*, extending upward into the same, in which tube is located a cylindrical shank, D, having at its upper end a cap, E, which rests on the upper end of the tube *a*.

In the center of the cap E is inserted the lower end of a vertical shaft, F, this end being squared, so as not to turn in the cap. The said shaft F passes upward through an aperture, *e*, in the platform G, and up through the upper part of the frame A, having its bearing therein.

Upon said platform is supported the casing which forms the scouring-chamber. The said casing is formed with double walls H I, with an intervening annular space constituting a hollow jacket. Through the annular space of said jacket extends spirally a coiled pipe, K, the ends of which project, respectively, from

the upper and lower parts of the casing, whereby they may be connected with suitable induction and eduction pipes, by means of which a current of steam, hot air, or hot water may be maintained through the coil during the process of scouring. The respective ends of the coiled pipe are provided with cocks or valves L, by means of which the current may be regulated and controlled.

The letter M indicates a solid cylindrical brush mounted on the shaft F inside of the casing, the said brush being confined upon the shaft by means of the metallic disks N, which are secured to the shaft in any convenient manner.

The platform G, on its lower side, is provided with a short tube, *i*, extending from the opening *e* downward, and upon said tube is fitted loosely a tube, *k*, operated by a lever, *l*, fulcrumed in a standard, *m*, the said lever being operated by a cam, *n*, mounted on a shaft, *p*, having bearings in a standard, *r*, and provided with suitable means by which it can be brought to bear upon the lever or released from the same.

The letter P indicates a spout or conduit, open at its lower end, and communicating with the lower part of the receptacle C through an opening, *s*. The upper part of the spout or conduit connects with a chamber, S, which communicates with a drum, T, in which is located a fan, U, mounted on a vertical shaft, V, journaled in suitable bearings in the frame of the machine.

The vertical shafts F and V are provided at their upper ends with pulleys W and Y, by which they can be put in motion by suitable bands, and upon the casing is mounted a hopper, Z, into which the grain to be scoured is fed.

The operation of my invention will be readily understood in connection with the above description, and is as follows: The grain being fed into the hopper falls into the interior of the casing, where it is subjected to the action of the rotating brush or scourer. The scoured grain finds its exit through the opening *e* and falls on the plate below, its passage being regulated by the sliding tube above mentioned. From the said plate it is distributed to the receptacle C, and from thence is discharged into

the spout P, where it meets with the upward current of air created by the fan. The dust, chaff, and other light particles are separated and carried off by the current of air, while the  
5 heavier grain is discharged at the lower end of the spout.

During the process of scouring, a current of steam, hot air, or hot water is maintained through the coiled pipe, whereby the grain  
10 may be kept at any desired temperature.

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

The combination, in a grain scourer or separator, of a case having double imperforate

walls and an annular intermediate heating-chamber with a coiled pipe extending through said chamber, having feed and discharge valves, and a rotary brush operating within the said case, all constructed and arranged to operate substantially as and for the purpose set forth. 20

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

JOSIAH N. KNOX.

Witnesses:

R. JAMES ABERNATHEY,  
J. SILAS LEAS.