(No Model.)

F. L. KIDDER.

SEPARATOR FOR GRAIN, &c.

No. 292,656. Patented Jan. 29, 1884.

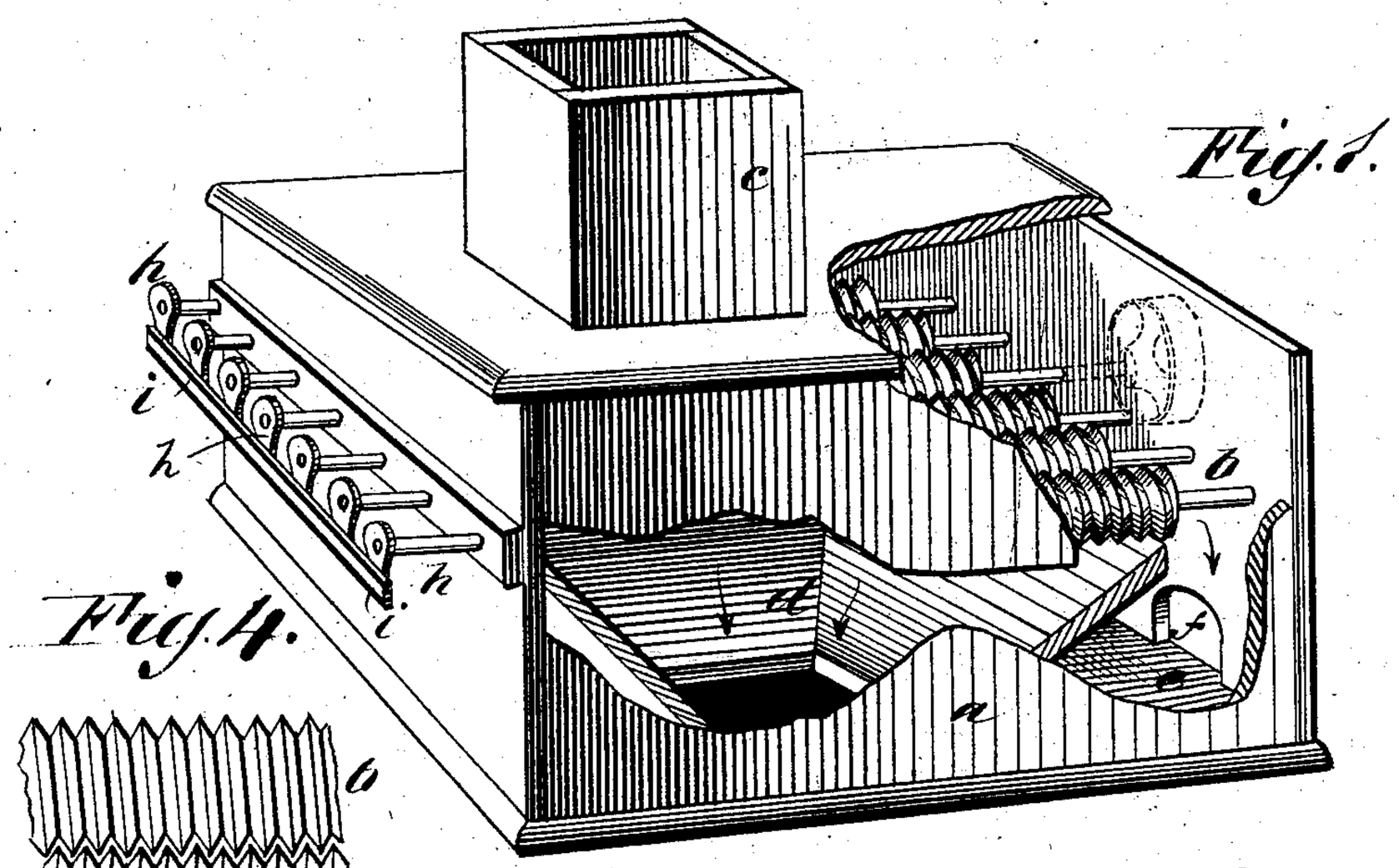


Fig. 1.

Fig. 4.

Fig. 2.

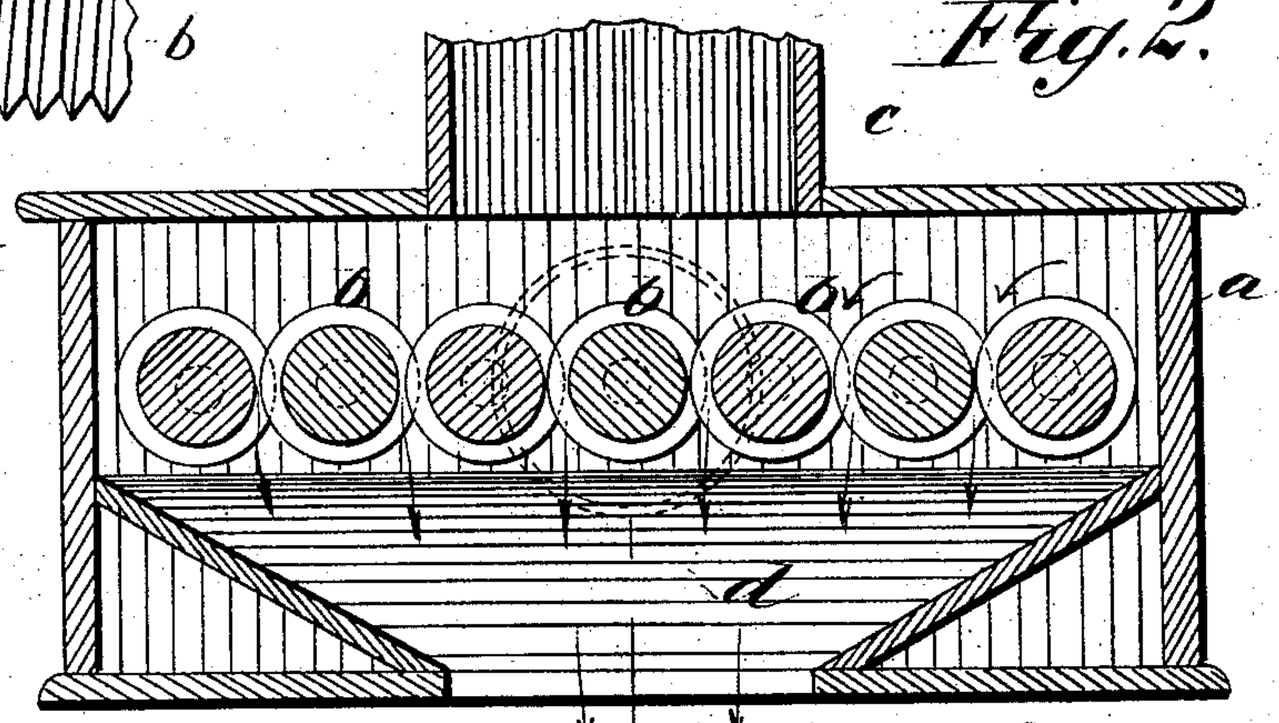
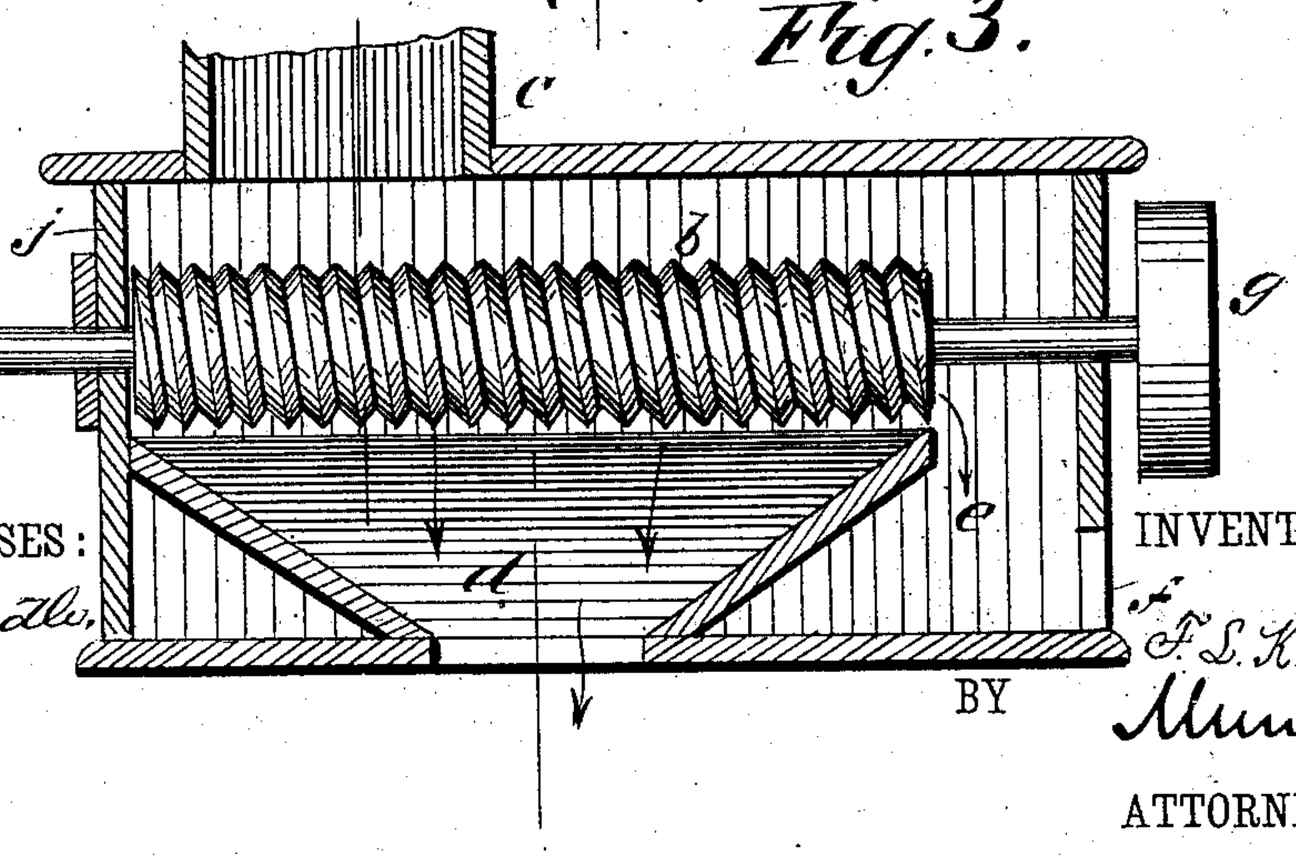


Fig. 3.



WITNESSES:

F. McArdle.

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UNITED STATES PATENT OFFICE.

FRANK L. KIDDER, OF TERRE HAUTE, INDIANA.

SEPARATOR FOR GRAIN, &c.

SPECIFICATION forming part of Letters Patent No. 292,656, dated January 29, 1884.

Application filed May 28, 1883. (No model.)

To all whom it may concern:

Be it known that I, FRANK L. KIDDER, of Terre Haute, in the county of Vigo and State of Indiana, have invented a new and Improved Separator for Grain, &c., of which the following is a full, clear, and exact description.

The invention will first be described in connection with the drawings, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of my improved screw-separator with some parts of the case broken out. Fig. 2 is a sectional elevation of the separator transversely to the rollers. Fig. 3 is a sectional elevation of the separator parallel to the rollers. Fig. 4 is a detail of a couple of the screw-rollers in top view.

In any suitable case, *a*, I arrange a series of screw-threaded rollers, *b*, side by side, with the screw-threads meshing together, but slightly short of touching, so as to have the requisite width of space for the grain, meal, or other matters to pass between the threads, the rollers being geared with driving mechanism and revolved at a moderate speed for stirring the grain or other matters to prevent clogging between the screws.

In the top of the case I arrange a spout, *c*, for conducting the stock into the separator, and provide a hopper-bottom, *d*, for discharging the stock to any proper receptacle after being separated. The hopper-bottom terminates even with the discharging ends of the rollers, and a pocket, *e*, is provided thereat, into which the matters separated from the stock are discharged, to be removed from time to time through the hand-hole *f*.

For applying the power to operate the rollers, I fit a driving-pulley, *g*, on the shaft of one, and connect them all together by cranks *h* and a rod, *i*, so that they will all be turned simultaneously and in the same direction; but the power may of course be applied in any approved way. It will be seen that by the opposite motions of the adjacent surfaces of the respective screws, the meal, grain, and other stock will flow between them in thin streams, while any solid objects too large to pass between the screws, will be carried along them to the ends and be discharged into the pocket *e*. The side *j* of the case closes up to the ends of the screws at the head, to prevent the stock from passing that way, and it is designed that the arrangement of the series of screws, shall be such that the stock will not spread so far as to escape at the sides of the outer rollers; or I may use hopper-shaped sides projecting over the outer rollers toward the center of the series.

It is obvious that I may gear the rollers by a train of spur-wheels instead of the rod, and, crank device herein shown, and I desire it to be understood that I intend to use the gear arrangement when preferred.

I am aware that it is not new to form widely-separated spiral flanges on rollers to make them operate as conveyer-wings; but

What I claim as new and of my invention is—

1. A separator formed of screws, provided with connected threads intermeshing but not in contact with each other, and mechanism adapted to rotate the adjacent surfaces of each pair of screws in opposite directions, as described.

2. The combination of the box *a*, supply-tube *c*, intermeshing screws *b*, and outlet-hopper *d*, as shown and described.

FRANK L. KIDDER.

Witnesses:
LEANDER M. LOCKE,
WRIGHT L. KIDDER.