

G. B. TURNER.

Separators for Cleaning Grain.

No. 141,524.

Patented August 5, 1873.

Fig. 1.

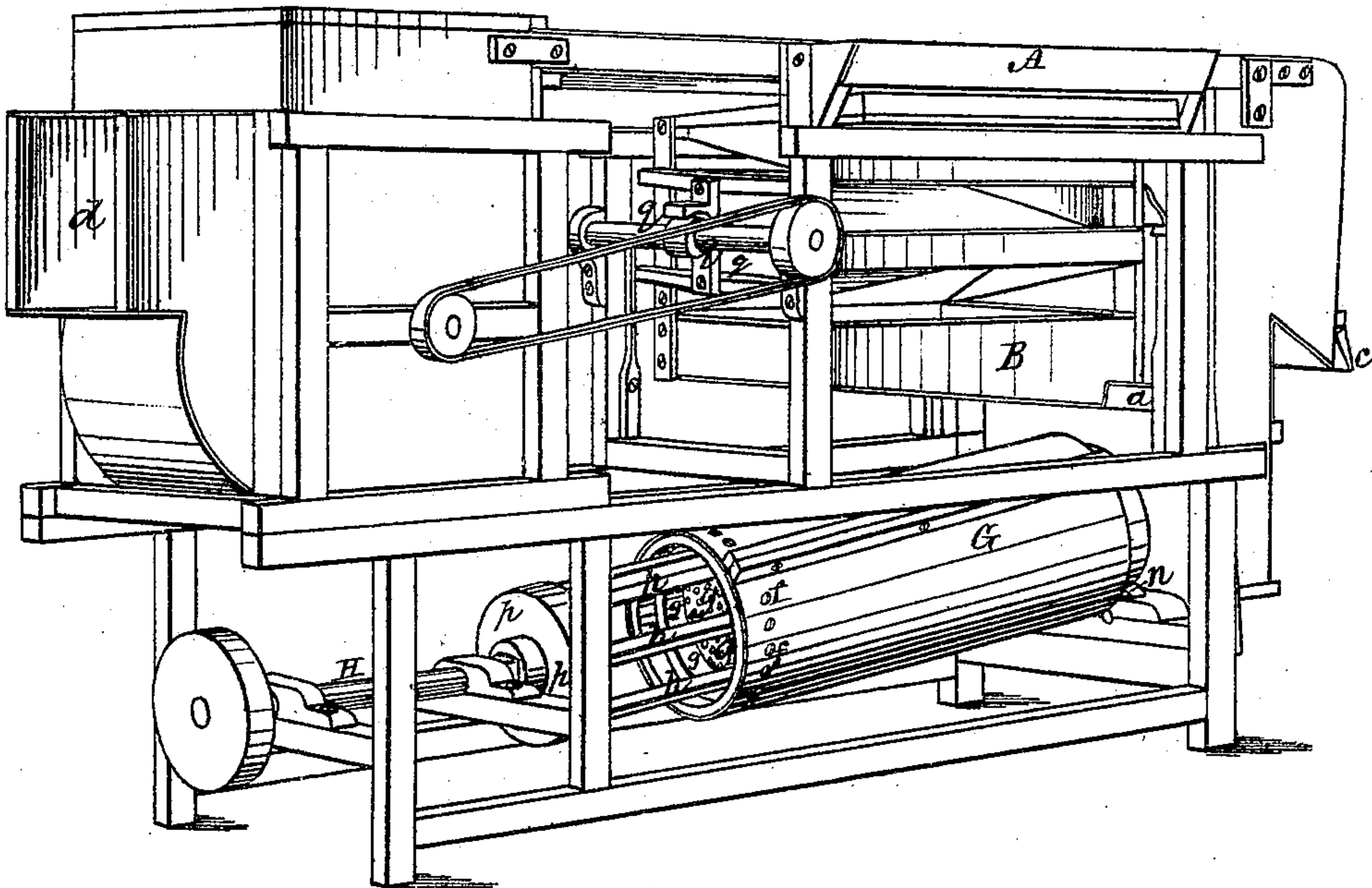
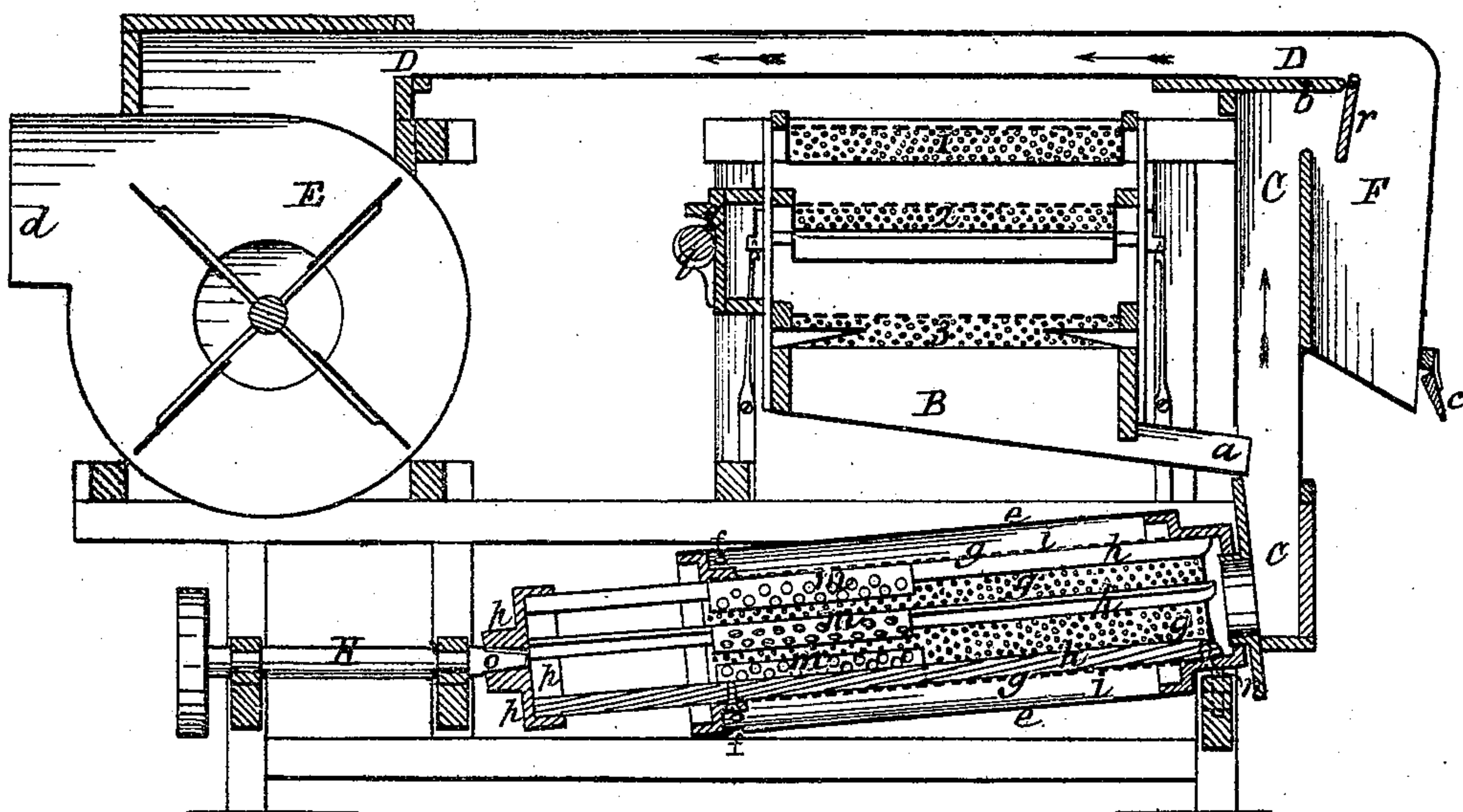


Fig. 2.



Witnesses.

D. P. Low

Edmund Masson

Inventor.

Grant B. Turner.

By atty A. D. Stoughton.

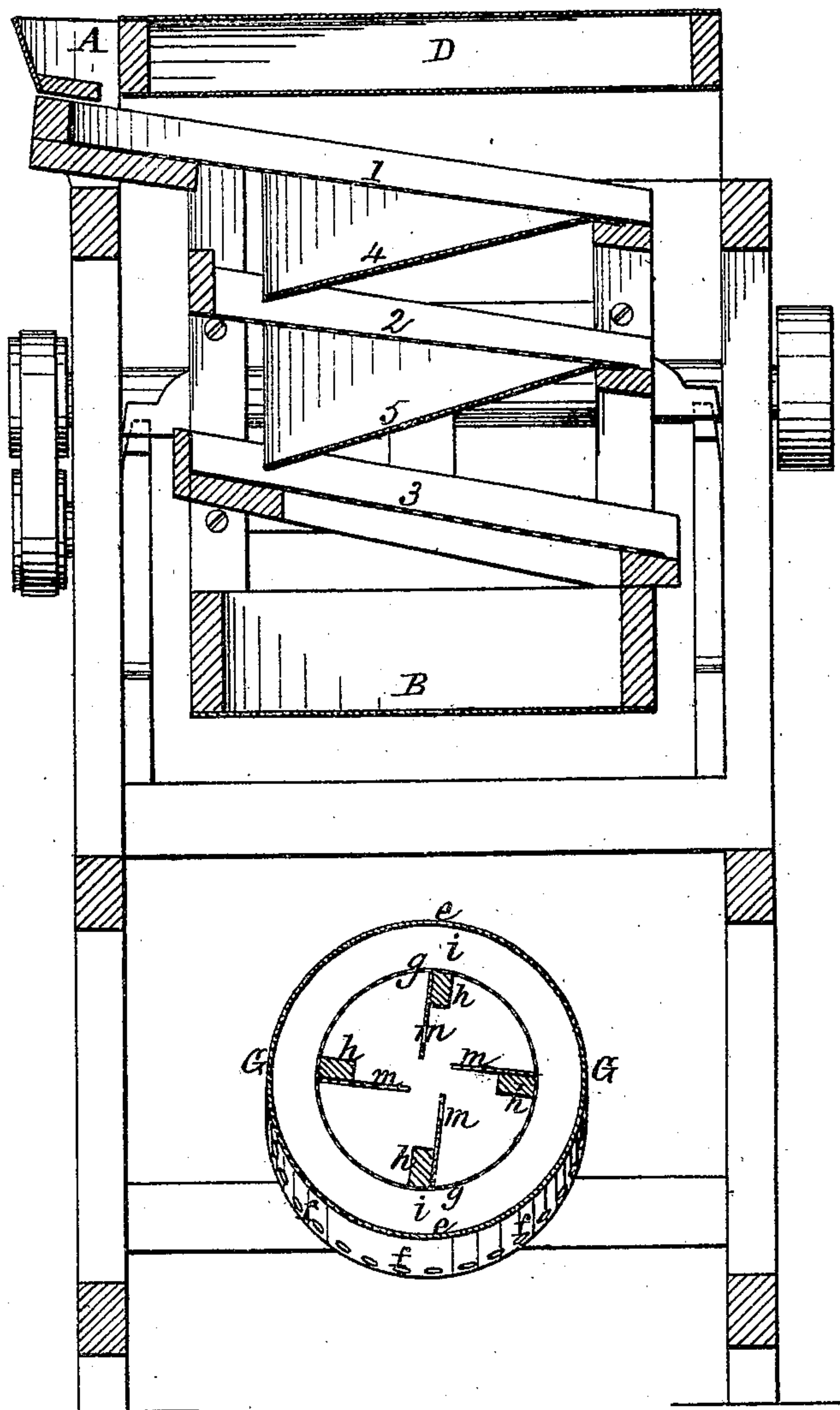
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Fig. 3.



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UNITED STATES PATENT OFFICE.

GRANT B. TURNER, OF CUYAHOGA FALLS, OHIO.

IMPROVEMENT IN SEPARATORS FOR CLEANING GRAIN.

Specification forming part of Letters Patent No. 141,524, dated August 5, 1873; application filed April 30, 1873.

To all whom it may concern:

Be it known that I, GRANT B. TURNER, of Cuyahoga Falls, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Grain-Separators; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings making a part of this specification, in which—

Figure 1 represents a perspective view of the separator. Fig. 2 represents a vertical longitudinal section through the same. Fig. 3 represents a vertical transverse section of the separator on an enlarged scale to better show its parts.

Similar letters of reference where they occur in the several separate figures denote like parts of the separator in all of the drawings.

My invention relates to what I term a riddle rolling-screen and suction-fan separator; and consists mainly in the construction and operation of the rolling-screen with a suction-blast drawn through it, and by which the final separation is made, and the dust and fine dirt are carried to the suction-fan, and thence out of the building, as will be explained.

The grain that is to be cleaned and separated is fed into the machine through the hopper A; whence it passes over and through the series of riddles 1 2 3, the coarser impurities dropping off at the ends of the riddles, while the grain, by means of the guiding-boards 4 5 under the riddles, respectively, is delivered into the box B; whence it goes through the spout *a* into the blast which is drawn up through the trunk C, and over through the passage D, as shown by the arrows in Fig. 2, to the suction-fan E. The heavier screenings are by the blast carried upward, and, striking against the board *b*, are turned into the separating-chamber F, and drop out through the valve *c* at the lower end of said chamber, while the dust and all fine and light particles are carried to the fan and out of the machine at *d*. The grain that drops down through the ascending blast in the trunk C is divested of much of the foreign matter always found in it, it having been subjected to the riddles first, and then to the blast, which

leaves it with only such finer seeds and impurities as have not been separated and carried off by the riddles and blast, and it passes into the upper end of the inclined rolling-screen G, by which the final separation is made. The rolling-screen G has an exterior jacket, *e*, which is imperforate, except at its lower end, where it is furnished with a series of holes, *f*. The inner jacket *g* is perforated so as to form a screen, and is far enough from the outer jacket to leave a space, as at *i*, between them. A series of ribs, *h*, are formed on the interior of the inner jacket *g*, extending throughout the screen, and the lower ends of these ribs are furnished with perforated plates, as at *m*. The object of these ribs is to lift, carry up, and agitate the grain so that all the foreign matter still adhering to or mingled with it may pass through the perforated jacket *g*, and thence out of the holes *f*, or be taken and carried by the blast passing through the rolling-screen into and through the passages C and D to the fan E, and thence out of the machine. The perfectly-cleaned grain passes out at the lower end of the rolling-screen G. This rolling-screen has no central shaft, and consequently there is nothing in its interior to interfere with a free passage of the grain in one direction and of a column of incoming air in the opposite direction, the fan being supplied with air through this rolling-screen. The upper end of the screen is supported upon friction-rolls *n*, and it is revolved by means of the shaft H, the point *o* of which, being many-sided, fits into a many-sided seat or step in the exterior head *p* of the screen, said head being somewhat removed from the end of the rolling-screen to allow the grain to freely pass out, and the blast to freely pass into said screen.

The riddles have a shake motion communicated to them by the mechanism, as shown at *q*.

Where the blast enters the separating-chamber F there is a valve, *r*, which, by an external appliance, may be moved so as to regulate the force of the blast.

Having thus fully described my invention, what I claim is—

1. The rolling-screen G, composed of an ex-

terior imperforate, except as at *f*, and interior perforated jacket, with space between, and perforate and imperforate ribs *m h*, for agitating and scouring grain, substantially as and for the purposes set forth.

2. In combination with the series of shaking-riddles and the rolling-screen, the suction-fan and the air-passages C D, the air to sup-

ply the fan and form the blast being drawn through the rolling-screen, as and for the purpose described.

GRANT B. TURNER.

Witnesses:

GEO. L. DOW,
GEO. DOW.