

(No Model.)

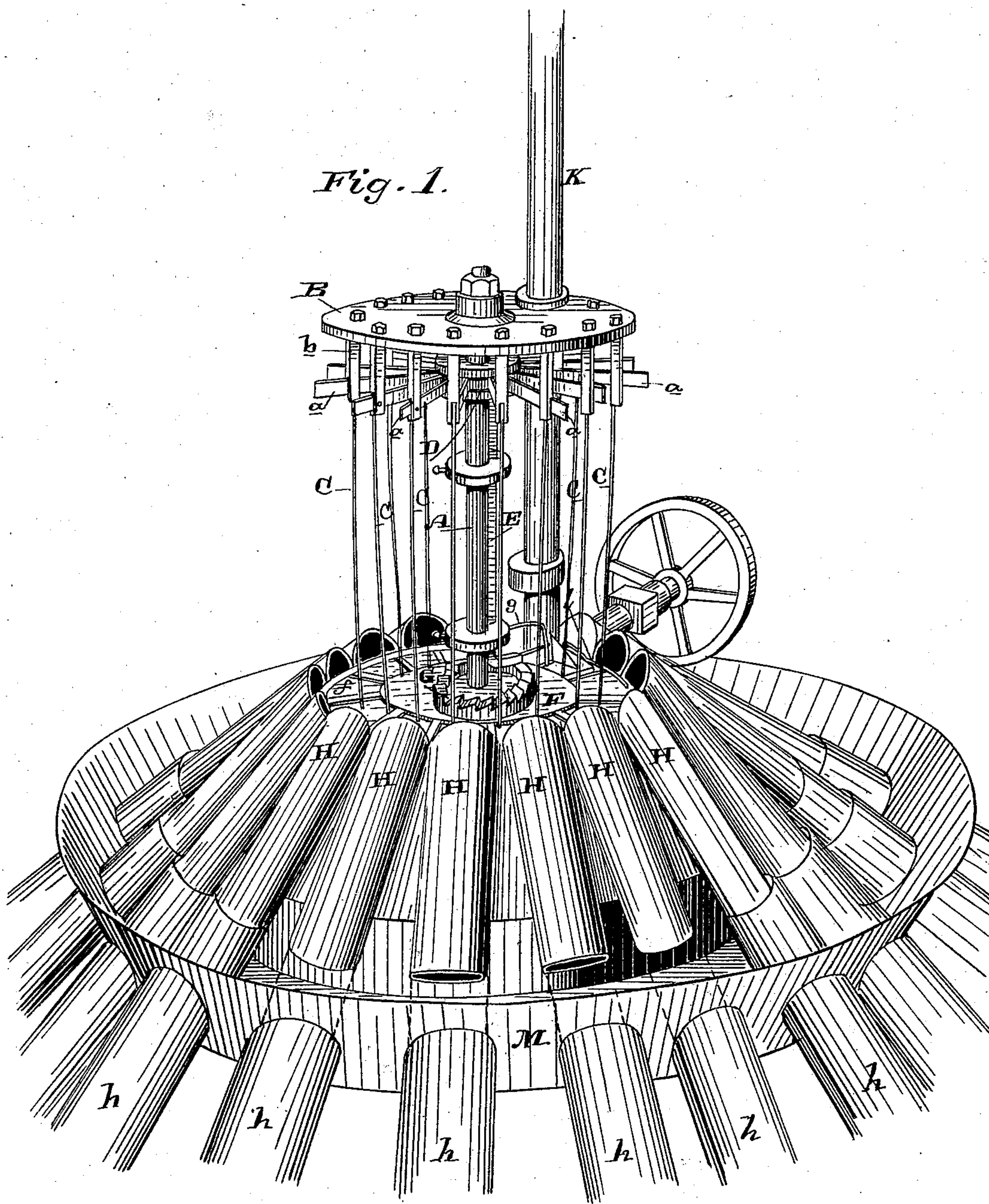
3 Sheets—Sheet 1.

P. SELBY.

WAD SORTER.

No. 365,544.

Patented June 28, 1887.



Witnesses,  
Geo. H. Strong  
J. H. Strong

Inventor,  
Prentiss Selby,  
By Dervey & Co.  
attys

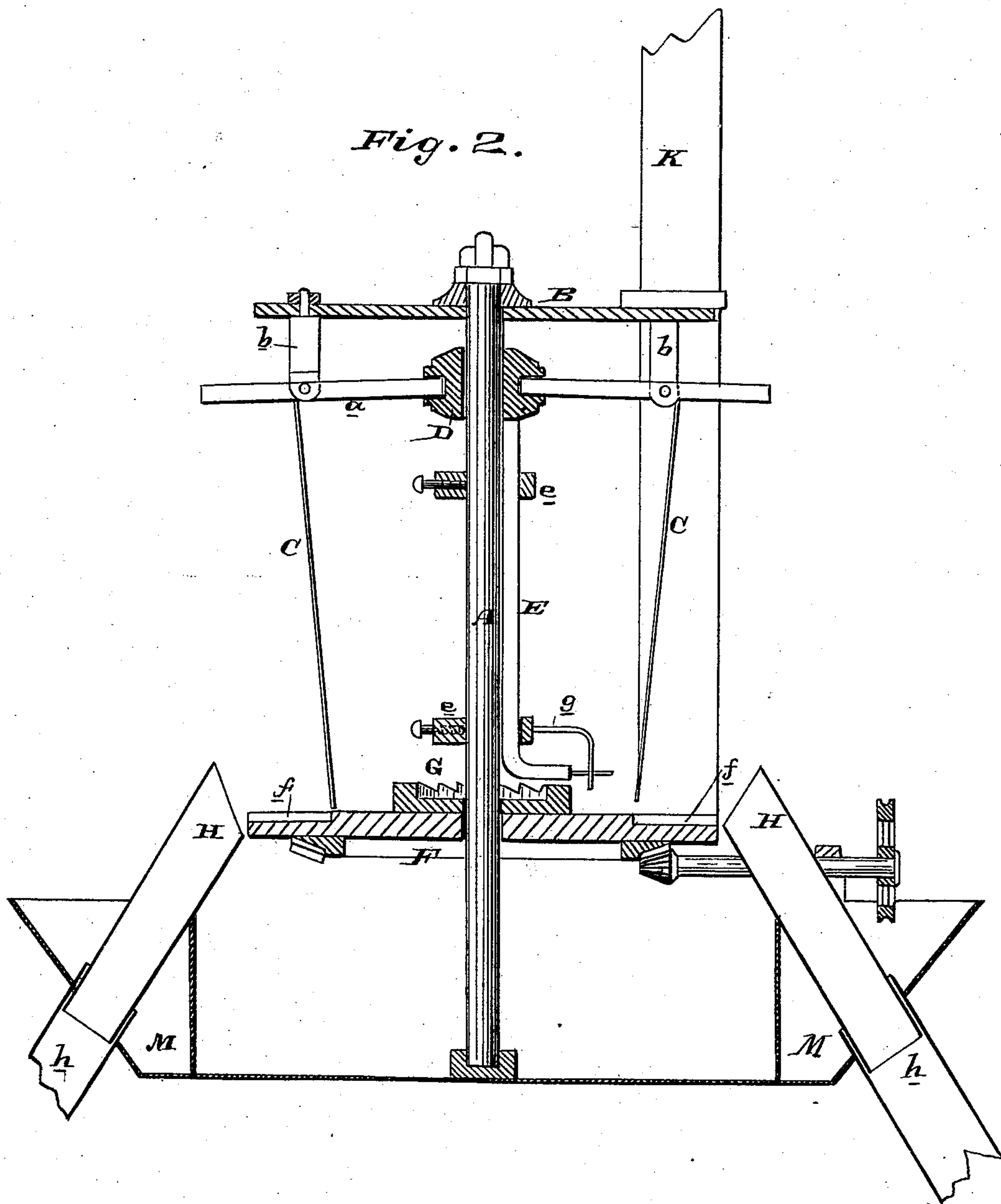
(No Model.)

3 Sheets—Sheet 2.

P. SELBY.  
WAD SORTER.

No. 365,544.

Patented June 28, 1887.



Witnesses,  
Geo. H. Strong,  
J. H. Nurse.

Inventor,  
Prentiss Selby,  
By Dewey & Co.,  
attys

(No Model.)

3 Sheets—Sheet 3.

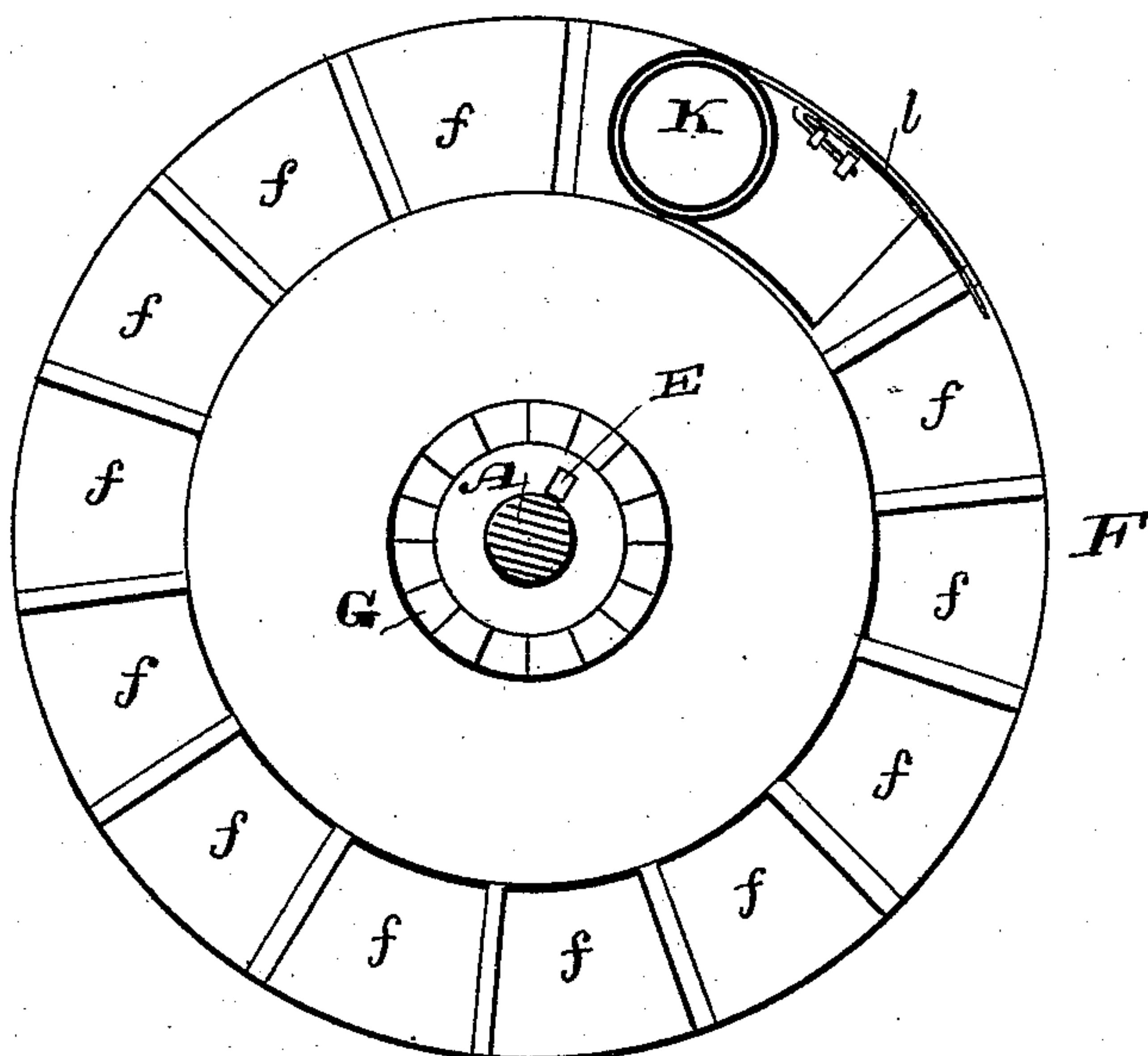
P. SELBY.

WAD SORTER.

No. 365,544.

Patented June 28, 1887.

*Fig. 3.*



Witnesses,  
Geo. H. Strong,  
J. H. House.

Inventor,  
Prentiss Selby,  
By Dewey & Co.  
attys



# UNITED STATES PATENT OFFICE.

PRENTISS SELBY, OF OAKLAND, CALIFORNIA.

## WAD-SORTER.

SPECIFICATION forming part of Letters Patent No. 365,544, dated June 28, 1887.

Application filed February 18, 1887. Serial No. 22,434. (No model.)

*To all whom it may concern:*

Be it known that I, PRENTISS SELBY, of Oakland, Alameda county, State of California, have invented an Improvement in Wad-Sorters; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to a device for sorting wads—such as are used for loading shells for cartridges—so that wads of varying degree of thickness, as they come from the factory, may be separated into lots of uniform thickness. The ordinary wads, which are cut from sheets of wad-paper or pasteboard, vary in thickness, since it is found impracticable to manufacture this wad-paper or composition of uniform character. In loading shells, therefore, in automatic cartridge-loaders—such as that class represented by the “Chamberlin” cartridge-loading machine—it is found that this disparity of the wads causes irregularities in the crimping of the shells, since the crimper is so adjusted that its proper action depends on the depth of the load in the cartridge, and the depth of said load depends to more or less extent on the thickness of the wads used.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a perspective view. Fig. 2 is a vertical section. Fig. 3 is a plan or horizontal section.

A stationary central rod, A, carries on its upper end a disk, B, having around its edge a series of short bars, *b*, in which are pivoted a series of levers, *a*. These levers have on their outer ends a corresponding number of downwardly-projecting fingers or sorters, C, of varying length, for the purpose hereinafter described. The inner ends of the levers *a* are suitably connected by pivots or hinges to a vertically-sliding sleeve, D, said sleeve having attached to it a right-angled bar, E, passing through suitable guides, *e*, this bar giving a vertical motion to the sleeve D, as hereinafter described. A table, F, is laid off in sections by means of divisions or ribs *f*, and is revolved by suitable gearing beneath it. In the center of said table and fixed to it is a circular cam-ratchet, G, the teeth of which are adapted to lift, after the manner of a cam, the bar E, and with it the sleeve D, actuating the levers *a* and their fingers or sorters C, so that said fingers

are drawn simultaneously toward the center as said sleeve rises. As the right-angled bar E passes up the incline of the cam-ratchet these fingers or sorters all draw in, and as it drops to the next incline on the ratchet G all the fingers fly out simultaneously from the center through the medium of the levers *a*, the weight of the sleeve D being sufficient to cause this motion without springs.

Arranged radially from the edge of the table F is a series of spouts or leaders, H, having extensions *h*, there being as many of these spouts as there are divisions *f* on the revolving table.

A feed-spout, K, extends above the whole machine and is intended to lead all the wads placed therein to the revolving table. Its lower end is placed just clear of the divisions or ribs *f*, so that the wads will fall into the spaces between these divisions. A spring, *l*, serves to push each wad into the rear corner of its space or division, so that each wad will be exactly the same distance from the center. The extension *g* to the lower guide, *e*, on the central rod is for the purpose of steadying the bar E as the series of cams G lift it. The basin or trough M encircling the whole device and forming part of it serves to catch any wads which may fail to be properly sorted.

The operation of my device is as follows: The circular wads of all grades of thickness are placed in the feed-spout K, and the central table is rotated by any suitable power through the medium of its gearing. As the table revolves a wad drops from the feed-spout into the space between the divisions *f*, the rib preventing another from falling into the same space, as the lower end of the feed-tube comes close to its upper surface. The revolution of the table causes all the fingers or sorters C to simultaneously draw toward the center and then fly out again by means of the cam rack G, vertical bar E, sleeve D, and the levers *a*, as above described. The fingers or sorters C are made so that the first one from the feed-spout is the shortest of the series, each succeeding one being about a thirty-second of an inch longer, or they may be graded to any degree of nicety. This variation of length continues around the circle. The revolution of the central table brings the wad in line with the first finger or sorter, and as said sorter flies



out, as described, if the wad is thin, the point of the sorter passes over and does not disturb it. The wad is carried on in the circle by the revolution of the table until it comes in front of one of the fingers or sorters which touch or hit it as said finger flies out, when the wad is pushed into the open mouth of the leader or spout H in front of said finger and passes on through the extension *h* to the proper receptacle placed at the outer end in the extensions. Should the wad be very thick the first finger of the series will throw it into its spout, and should it be very thin it will not be removed from the table until it nears the end of the series; but all the wads are properly graded and sorted and placed in respective grades in the various boxes. The small spring *l* pushes each wad as it comes from the feed-spout back into the corner of the division on the table, so that all the wads on the table will be at equal distance from its center. This is necessary, since the fingers or sorters necessarily move in the arc of a circle, and were the wads not placed in the same relative positions irregularity of sorting would result. It is evident that as many of the fingers or sorters may be used as it is desired to make different grades of thicknesses of wads. The wads once sorted, those of uniform thickness may be used with any fixed amount of ammunition in the shells and the depth of load in all the cartridges of that lot will be uniform. There is thus no danger of injuring the shell in the subsequent operation of crimping.

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

1. A wad-sorting machine consisting of a table upon which the wads are deposited, and a series of vertical fingers the ends of which are at varying distances from the surface of said table, whereby each thickness of wad is removed, substantially as herein described.

2. A wad-sorter comprising a circular rotating table, on the outer edge of the top of which the wads are successively deposited, and a series of vertical fingers or sorters suspended to swing above the table and having their ends at varying distances from said table, substantially as and for the purpose herein described.

3. A wad-sorter comprising a circular rotating table, on the outer edge of the top of which the wads are successively deposited, and a series of radial ribs by which the wads are maintained separate from each other, in combination with an equal number of hinged swinging arms or fingers depending from

above and having their ends swinging within varying distances of said table, together with the mechanism whereby these fingers are caused to oscillate, substantially as herein described.

4. The table upon which the wads are distributed and the depending arms hinged at the upper end, so that their lower ends may swing at varying distances from the surface of said table, in combination with the lever-arms *a*, the vertically-moving sleeve by which said levers are actuated, and the cam or ratchet disk, together with an arm or rod extending from the ratchet to the sleeve, substantially as herein described.

5. The horizontal rotating table, upon the outer edge of which wads are distributed, radial dividing-ribs by which said wads are separated from each other, a series of arms arranged radially and depending from points of support above the table, so that their lower ends approach the table at varying distances as they swing, and a mechanism whereby the lower ends of said arms are drawn inwardly toward the center and caused to swing outwardly while the wad-carrying table rotates, in combination with the spouts or receivers into which the wads of varying thicknesses are discharged by the action of said swinging arms, substantially as herein described.

6. The horizontal rotating table having the shallow radially-disposed receptacles around its outer edge, a spout or feed-tube through which the wads are delivered successively into these receptacles as the table rotates beneath it, and a series of radially-swinging arms, the lower ends of which approach the table at varying distances, so as to sort the wads into uniform grades of thickness, in combination with an elastic arm or spring by which all the wads are placed at the inner angles of the receptacles as fast as they are delivered on the table, substantially as herein described.

7. The horizontal rotating wad-receiving table and the radially-swinging arms or fingers by which the wads are removed from the table according to their thickness, and corresponding spouts or receivers for said wads, in combination with an inclosing pan or receptacle into which wads which may be accidentally misplaced may fall, substantially as herein described.

In witness whereof I have hereunto set my hand.

PRENTISS SELBY.

Witnesses:

A. J. RALSTON,  
H. B. UNDERHILL, Jr.