

(No Model.)

2 Sheets—Sheet 1.

G. EISNER.  
SORTING OR SIFTING APPARATUS.

No. 511,517.

Patented Dec. 26, 1893.

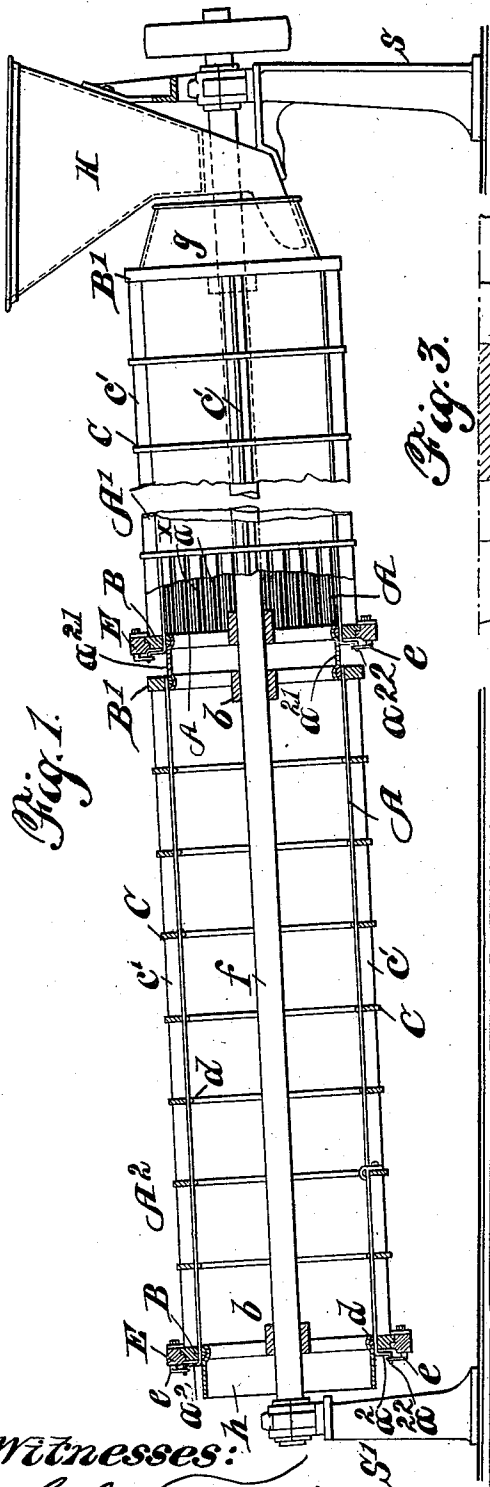


Fig. 1.

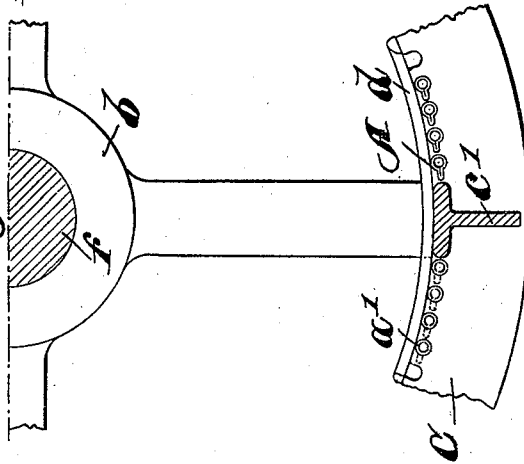


Fig. 3.

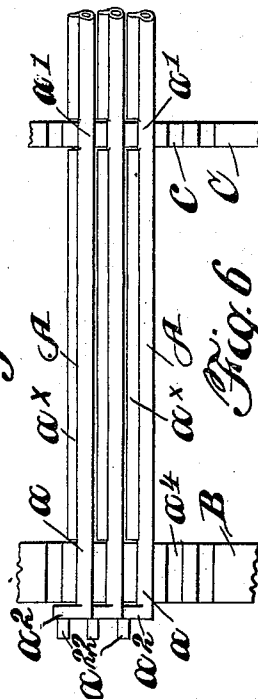


Fig. 5.



Fig. 6.

Witnesses:  
H. S. Dieterich  
M. J. Higgins.

Inventor:  
Gustav Eisner;  
By Henry Oth Attg.

(No Model.)

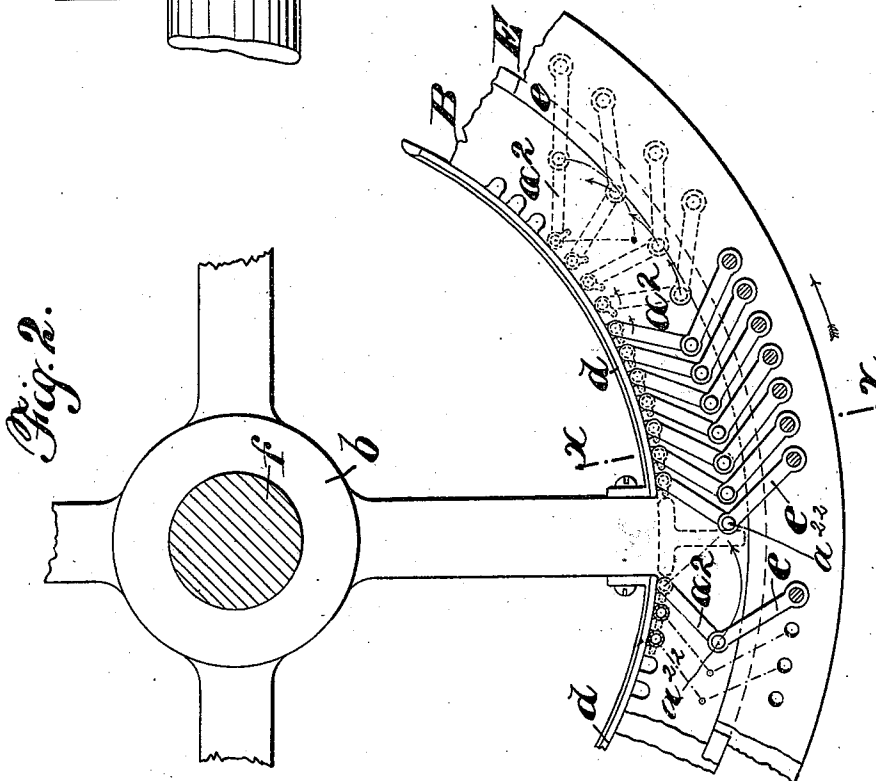
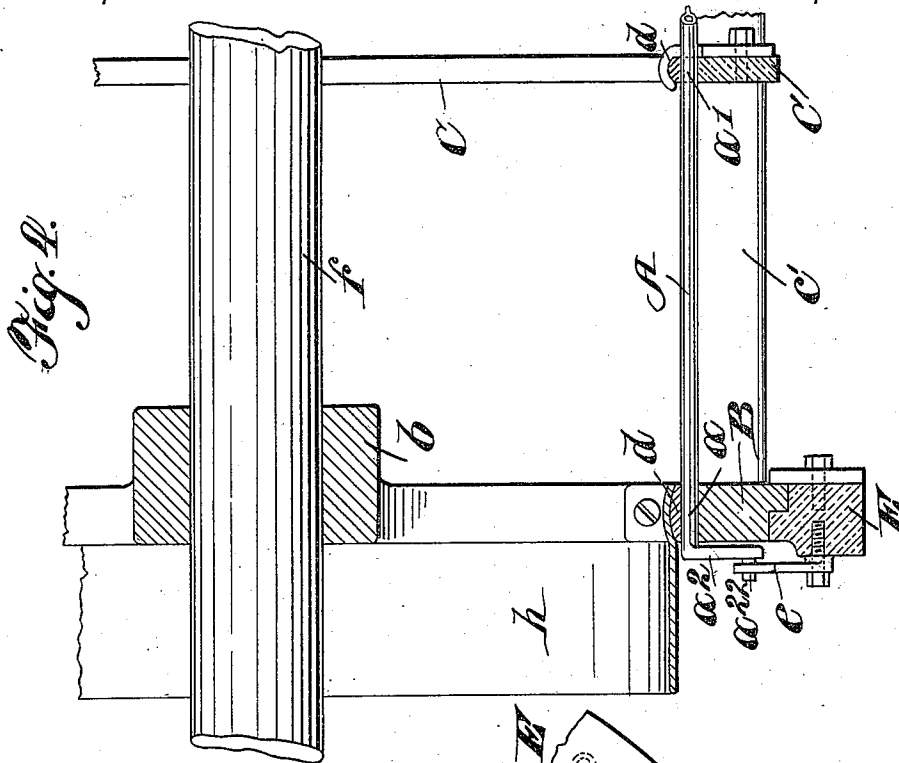
2 Sheets—Sheet 2.

G. EISNER.

### SORTING OR SIFTING APPARATUS.

No. 511,517.

Patented Dec. 26, 1893.



Witnesses:  
H. G. Vieterich  
M. J. L. Higgins.

H. G. Vieterich  
M. J. L. Higgins.

M. J. L. Higgins

Inventor:  
Gustav Eisner;  
By James G. H. Atty.

*Gustav Eisner,*

By James G. Thompson Atty.

# UNITED STATES PATENT OFFICE,

GUSTAV EISNER, OF NEUSTADT-ON-THE-HARDT, GERMANY.

## SORTING OR SIFTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 511,517, dated December 26, 1893.

Application filed March 30, 1893. Serial No. 468,255. (No model.) Patented in England September 4, 1891, No. 14,980; in Germany January 31, 1892, No. 66,868, and in Austria-Hungary February 20, 1892, No. 43,431 and No. 73,455.

*To all whom it may concern:*

Be it known that I, GUSTAV EISNER, a subject of the Emperor of Austria-Hungary, residing at Neustadt-on-the-Hardt, in the Province of Bavarian Palatinate, in the Empire of Germany, have invented certain new and useful Improvements in Sorting or Sifting Apparatus, (for which I have received Letters Patent in England September 4, 1891, No. 14,980; in Germany January 31, 1892, No. 66,868, and in Austria-Hungary February 20, 1892, Vienna, No. 43,431, and Buda-Pesth, No. 73,455;) and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention has relation to screening, bolting or sorting machines, its essential object being to provide a screening or bolting device whose openings or spaces, *i. e.*, whose meshes, are adapted to be adjusted, according as a finer or coarser product is to be obtained.

In the accompanying drawings—Figure 1 is a longitudinal elevation partly in section of an apparatus embodying my invention, the bars of which the cylindrical shell is formed being shown in that position in which the interspaces are substantially closed by the radial web on said bars. Fig. 2 is a face view of a portion of the rear head of the apparatus, its shaft being shown in section. Fig. 3 is a cross-sectional view of a portion of the apparatus. Fig. 4 is a like view taken about on the line *x, x*, of Fig. 2. Fig. 5 is a detail elevation, illustrating the arrangement of the screen bars, and Fig. 6 is a cross-section of one of said bars.

In Fig. 1 I have illustrated a screening, bolting or sorting apparatus composed of two cylindrical screens, *A*<sup>2</sup>, and *A'*, connected together in the usual or in any preferred manner, as for instance, by a connecting sleeve, *a*<sup>21</sup>, one of which screens will be provided with a feed cone, as *g*, for the reception of the delivery spout of a feed hopper, *H*, while the other screen will be provided with a discharge sleeve, as *h*, for the discharge of the tailings,

or coarse material, and, as shown, the said screens are mounted on a common shaft, *f*, that has its bearings in suitable standards, *S*, and *S'*, the latter standard being of less height than the standard *S*, to maintain the screen in an inclined plane and cause the material fed thereto to move automatically from the feed to the tail end of said screens. In all other respects the two screens are of the same construction and it will therefore suffice to describe the construction of one of them. The screen comprises a skeleton or frame composed of the shaft, *f*, the head and tail rings, *B*, *B'*, and a suitable number of intermediate bearing rings, *C*, said head and tail rings being constructed in the form of a spider or wheel, with a hub, *b*, that is rigidly secured to the carrier shaft *f*. The head and tail rings, *B*, *B'*, as well as the bearing rings, *C*, have suitable bearing notches, *a*<sup>4</sup>, *c*, Fig. 5, formed in their inner periphery, for the reception of bars, *A*, whose form in cross section is a cylinder, having a flat rib or web projecting radially therefrom, as shown in Fig. 6, the said web having suitable hiatuses *a'* at the points where the bars are supported in the bearings, *a*<sup>4</sup>, in the rings, *B*, *B'*, and *c* in the intermediate or bearing rings, *C*, the bars being retained in their bearings in the several rings by locking segments or rings, *d*, applied to the inner periphery of said rings, *B*, *B'* and *C*. The distance between the bearings *a*<sup>4</sup> or *c* is such that when the bars are set to a given position the web *a*<sup>x</sup> of one bar will lie in contact with the cylindrical portion of the bar next preceding, as shown in dotted lines in Fig. 2 as regards some of the bars, *A*, so as to form a practically closed cylinder. At the rear or tail end of the screen, each bar *A* is provided with a crank *a*<sup>2</sup> and a wrist pin, *a*<sup>22</sup>, which latter is pivotally connected by means of a link *e*, with a ring *E* revoluble upon the tail ring *B*. It is obvious that when said ring *E* is revolved in the direction of the arrow, Fig. 2, the cranks and links will be moved from the angular position shown in full lines until said cranks and links are extended to a straight line, as shown in dotted lines, when the web *a*<sup>x</sup> on one of the bars will be farthest away from the cylindrical portion of the next preceding bar, in which position the

space between the bars will be greatest. In short, by revolving the bars through an arc of ninety degrees a substantially closed cylinder is converted into a longitudinally slotted cylinder the width of whose slots is gradually increased; I am thus enabled to vary the size of mesh of one screen relatively to that of the next preceding or succeeding connected screen, or to adjust or regulate the mesh of a screen as may be required at any time, either before or during the operation of screening.

In order that the intermediate rings may be held in their proper positions I employ substantially T-shaped spacing bars, *c'*, that are bolted to said rings, and the head and tail rings respectively, as shown.

The advantages inherent to a screen the mesh of which can be varied will be readily understood by those conversant with this state of the art, and need therefore not be referred to in detail.

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

1. A screen or bolt consisting of a screen-

ing cylinder whose shell is composed of revoluble cylindrical bars provided with a flat radial web or rib and having a crank and wrist pin at one end, of supporting head, tail and intermediate rings provided with bearings for said bars, and of a revoluble shaft to which the head and tail rings are secured, in combination with an actuating ring revoluble on the tail ring, and links pivotally connecting said ring with the wrist pins on the cranks of the screen bars, for the purpose set forth.

2. A screening or sorting machine comprising a screening cylinder composed of revoluble bars of greater diameter in one direction than in the other, in combination with means for rocking said bars simultaneously, consisting of an oscillatory ring and links connecting the ring to cranks on the bars, for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

GUSTAV EISNER.

Witnesses:

GUSTAV ADOLF KIES,  
PETER SCHNEIDER.