

No. 784,135.

PATENTED MAR. 7, 1905.

F. L. BLOCK.
GRAIN SORTER OR SEPARATOR.

APPLICATION FILED MAR. 10, 1904.

2 SHEETS—SHEET 1.

Fig. 1.

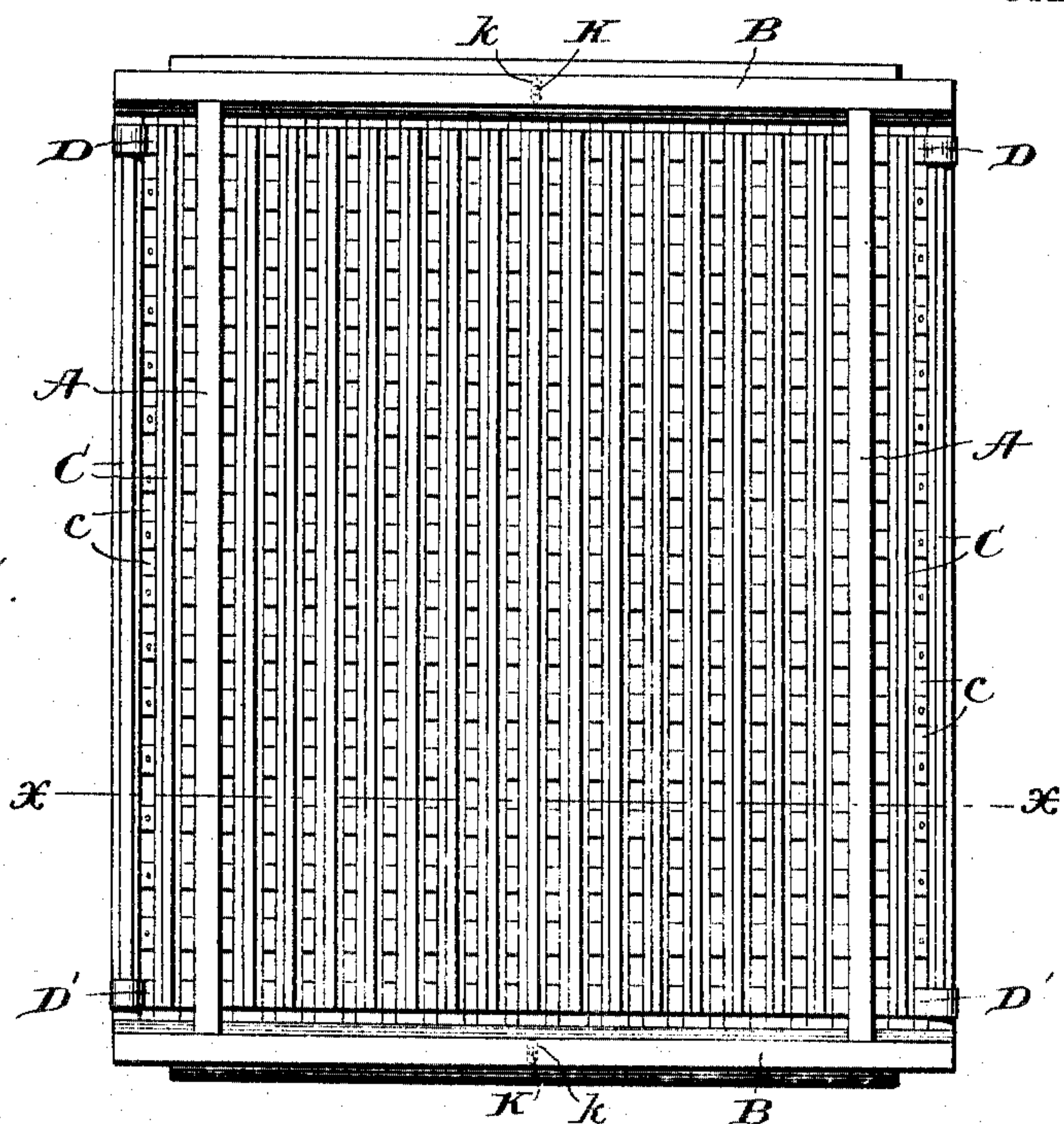
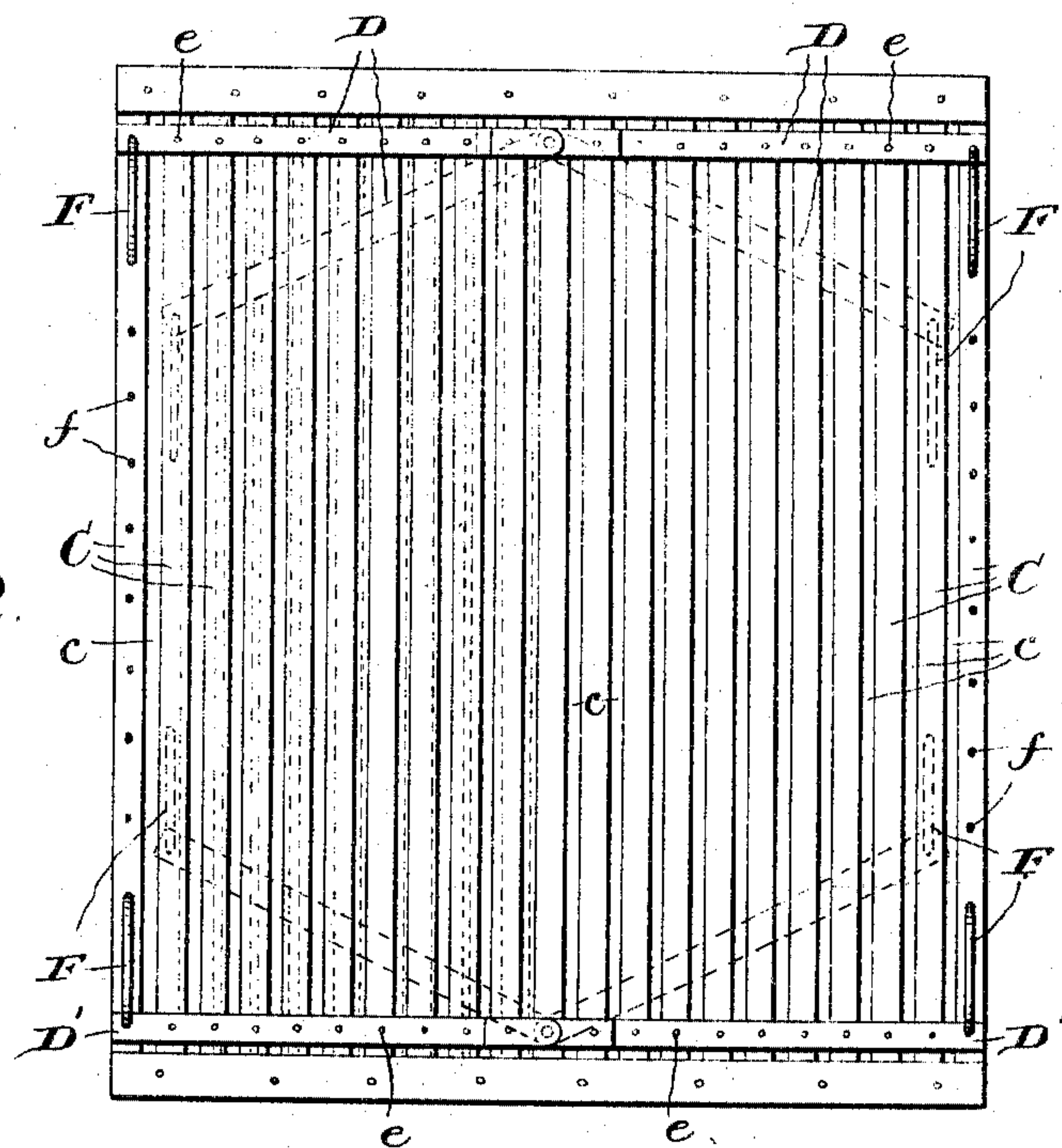


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

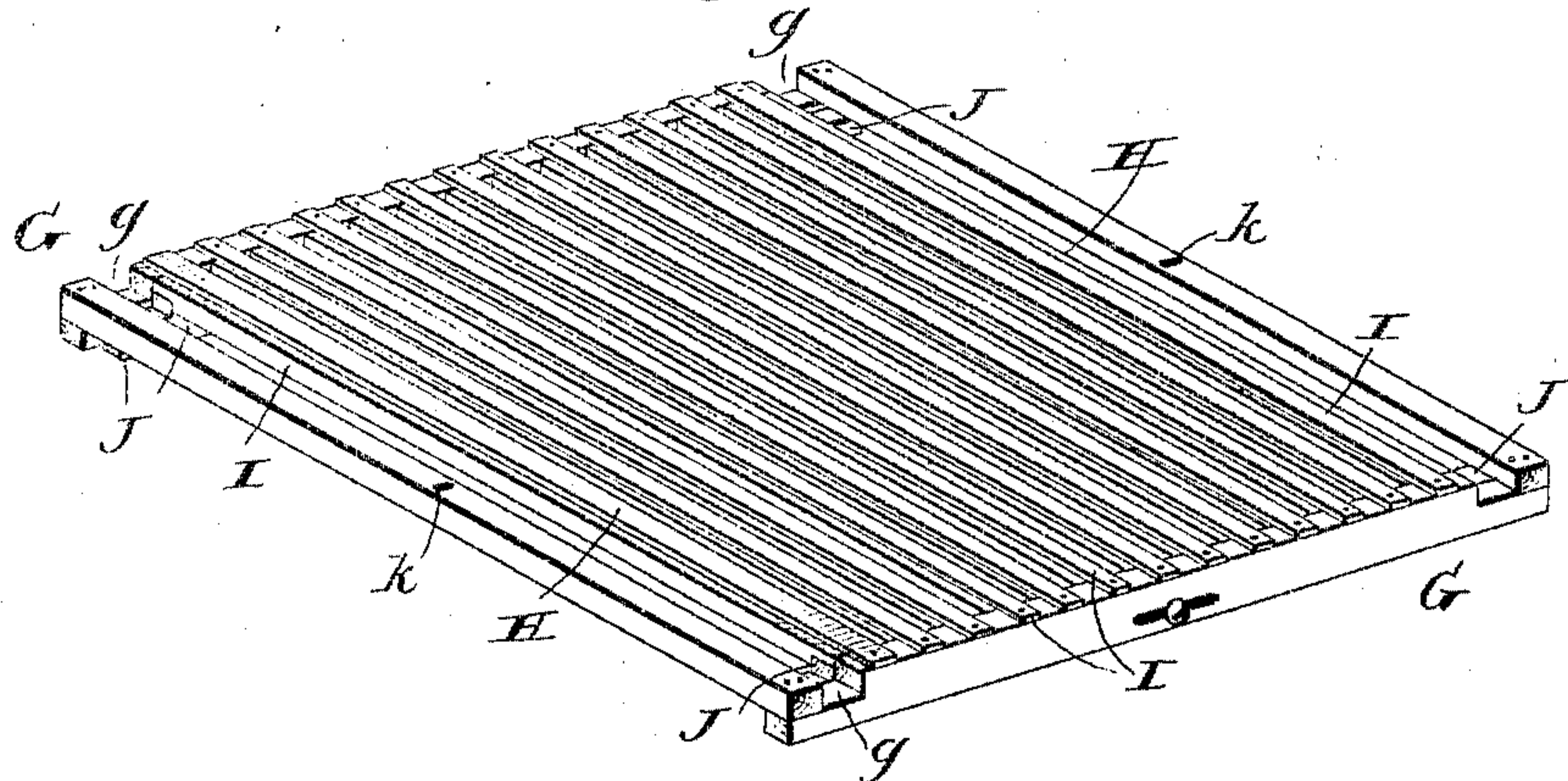


Fig. 4.

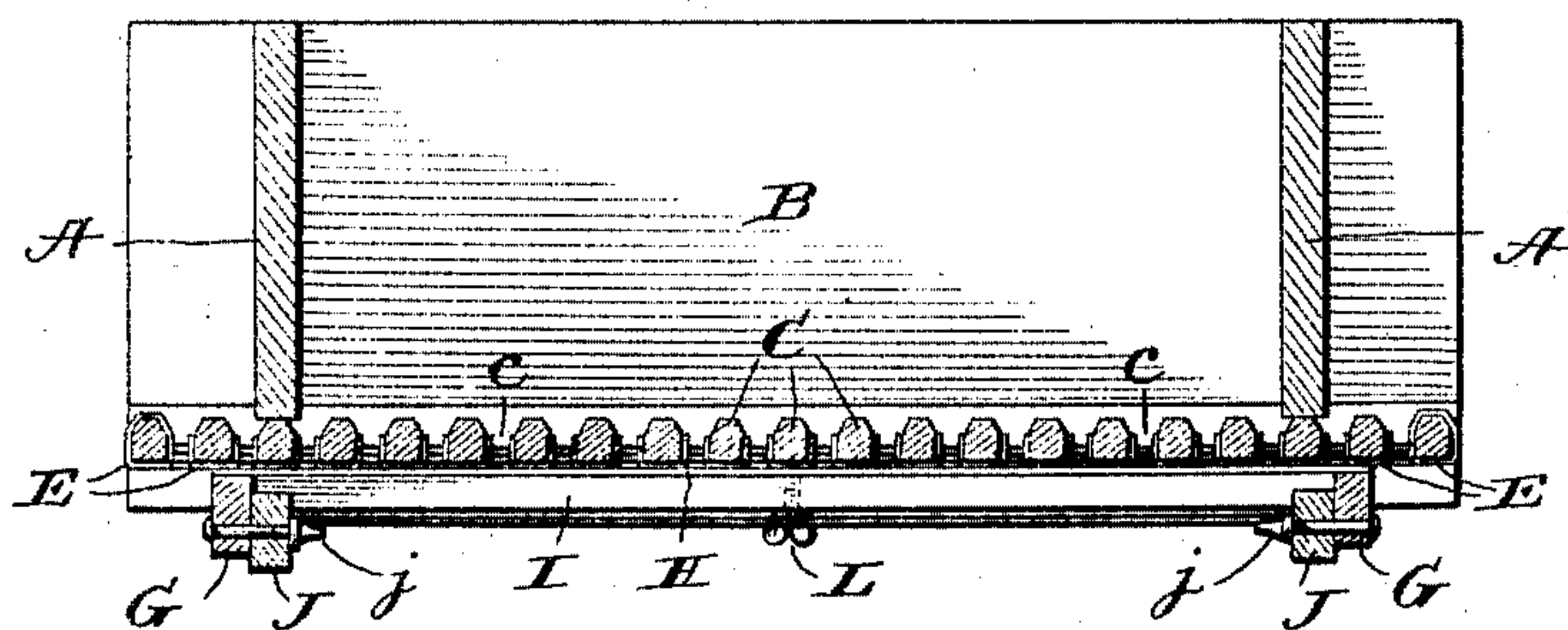


Fig. 5.

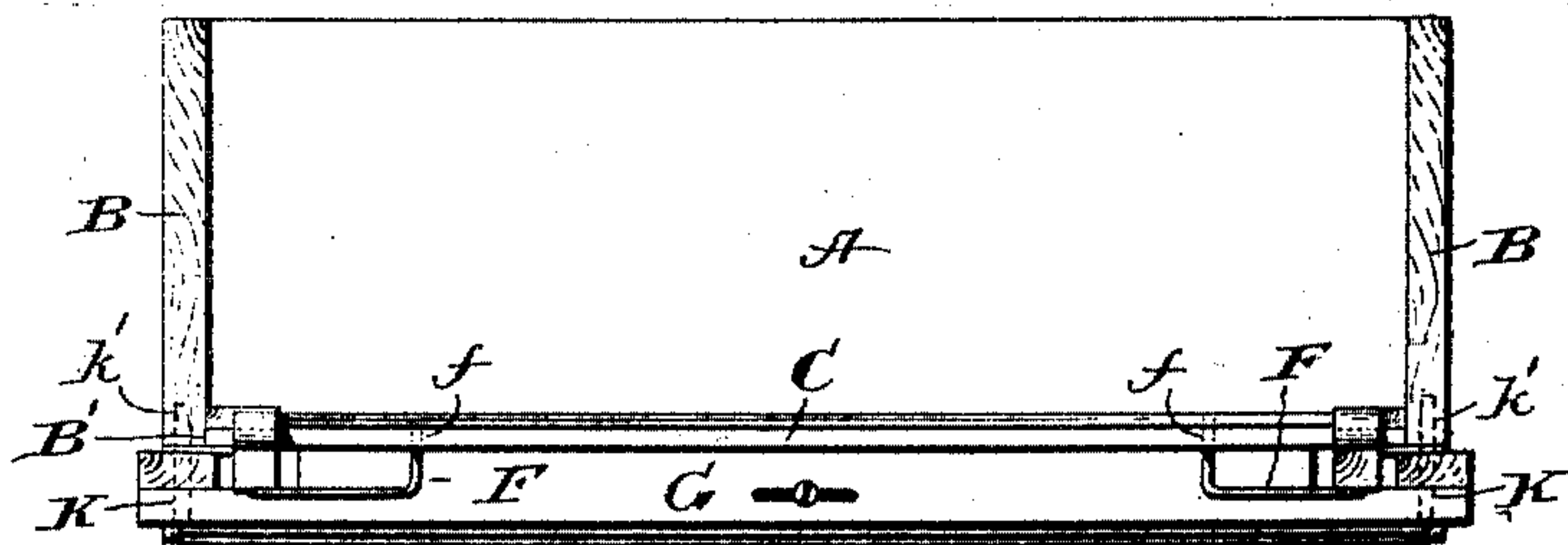
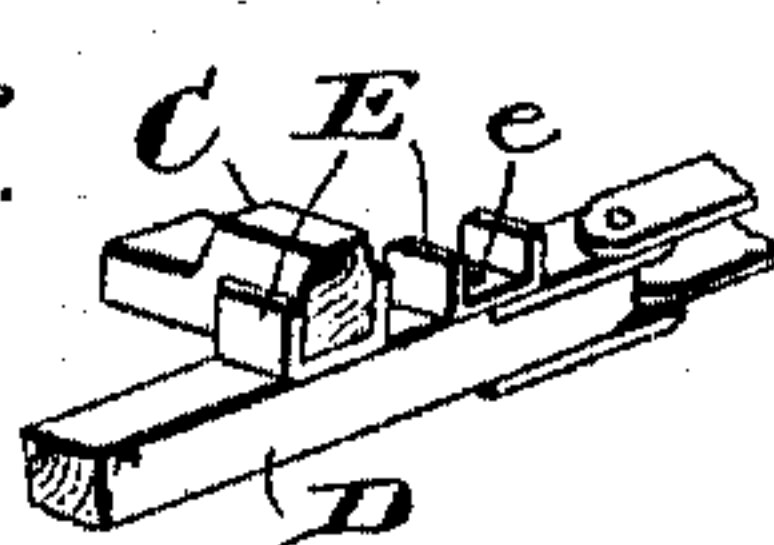


Fig. 6.



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UNITED STATES PATENT OFFICE.

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GRAIN SORTER OR SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 784,135, dated March 7, 1905.

Application filed March 10, 1904. Serial No. 197,396.

To all whom it may concern:

Be it known that I, FRANCIS L. BLOCK, a citizen of the United States, residing at Sidney, in the county of Champaign and State of Illinois, have invented certain new and useful Improvements in Grain Sorters or Separators, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to a novel grain sorter or separator, and has for its primary object the provision of improved adjustable instrumentalities upon which an indiscriminate supply of grain may be deposited and worked, so that all grain approximating a predetermined size may be separated from the bulk.

The invention is particularly susceptible of use in connection with shelled corn which is to be fed to and distributed by planters for cultivating purposes.

It has been found that in the larger number of seed-planting machines at present being marketed, especially those types involving the use of a seed-slide, the openings in the slide through which the corn or other grain falls from the carrying receptacle are of a standard or uniform size. Consequently it is desirable that the grain utilized for the purposes designated be also of a substantially uniform grade or size, so as to freely pass through said openings in the slide, thereby preventing clogging of the machine and facilitating regularity in the feed therefrom.

With the above-mentioned ends in view the invention contemplates a separator provided with a slatted bottom the slats or bars of which are separated at a normal distance apart to permit corn or seed to pass through therebetween, and instrumentalities associated with said slatted bottom for adjusting the slats and causing them to approach and recede, as the case may be, to regulate the distance therebetween and control the grade or size of corn which may pass there-through, and means for locking the slats or bars in adjusted position, in combination with an auxiliary slatted bottom the slats of which are mounted transversely of the slats of said first-mentioned bottom, and

means for adjusting said auxiliary bottom to regulate the width of the spaces there-through.

Novel characteristics of the several parts and of the construction and arrangement will be apparent from the detailed description hereinafter when read in connection with the accompanying drawings, forming part hereof, wherein a preferable embodiment of the invention is illustrated for the purpose of enabling a clear understanding of the same. It is, however, to be understood that in any future interpretation as to the scope of the present invention the same is by no means to be limited to the specific details of the construction described herein, except in so far as any such details may be included in the appended claims, because it is obvious that minor changes and alterations may be made without in the least departing from the spirit of the invention.

In the drawings, Figure 1 is a top plan view of the separator. Fig. 2 is a similar view of the bottom, the auxiliary bottom being removed. Fig. 3 is a perspective view of the auxiliary bottom. Fig. 4 is a sectional view on the line *xx* of Fig. 1. Fig. 5 is a side view, and Fig. 6 is a detail view.

Referring more specifically to the drawings, wherein like reference characters refer to corresponding parts in the several views, A designates the side walls, and B the end walls, of the receptacle adapted to receive the corn or seed to be separated. The bottom of the receptacle is formed of a series of slats or bars C, arranged longitudinally of the receptacle and in parallel planes, said bars being normally separated to form intervening spaces *c* for the passage of corn of proper size through the bottom, whereby the same may become separated from the bulk. The ends of the receptacle project downwardly somewhat below the lower edges of the sides thereof and have formed thereon the guideways B', in which the ends of the slats work, it being understood that the whole of the slatted bottom is free to be slid into and out of said guideways at either side of the receptacle and also that said bottom is of a width sufficient to project beyond the sides of the re-

ceptacle, whereby, irrespective of the adjustment of the bottom, there are no undue spaces adjacent to the lower edges of said sides and through which grain other than the size desired may escape, this being an objection to those separators of the prior art in which adjustable bottoms of the same size as the bottom area of the receptacle are employed.

Means for adjusting the slatted bottom just referred to will now be described.

D D' are oppositely-extending arms each pivoted to a central slat C and a pair of these arms being provided for each end of the bottom, said arms being connected to the slats directly above the same through the medium of slidable cleats E, loosely embracing the slats and pivoted by pins *e* to the arms, whereby the cleats are free to move along the slats, irrespective of the adjustment of the arms, with outbinding thereon, said pivots permitting the cleats to constantly maintain their normal relation to the slats, while permitting the movement of each arm in an arc around its pivot at the center slat. When the arms are in alinement and in their outermost position, the condition of the bottom is that of its greatest expansion and the largest openings possible between the adjacent arms or slats afforded. However, when smaller spaces are desired the respective bars or arms are swung inwardly, and the movement thereof being in an arc, as aforesaid, the slats are forced together, as is obvious, thereby decreasing the spaces between the slats to any extent desired. The arms are locked in adjusted positions by means of catches F, arranged to engage apertures *f* in the outermost slats.

In the description thus far, it will be appreciated that no matter what the adjustment of the slatted bottom is the spaces between the slats are at all times of an elongated character, and inasmuch as it is frequently desirable to subdivide these elongated spaces, whereby the escape of grain through the bottom will be through relatively-confined spaces of a diameter approximating that of the largest grain to be separated, I have devised an auxiliary bottom adapted to cooperate with the said first-mentioned bottom in a manner to be now pointed out.

G is a substantially rectangular frame provided with a series of fixed slats H, arranged transversely thereof, said frame being cut away, as at *g*, whereby the same may overlie the pivoted arms of the first-mentioned bottom, with the slats H running crosswise of the slats C. The slats H are thin and preferably formed of metal, and slidable thereupon is a second series of slats I, carried by side bars J, having a slot-and-pin engagement with the adjoining side bars of the frame G. These last-mentioned slats and the side bars carrying the same are adjust-

able within the frame G for the purpose of adjusting the spaces through the auxiliary bottom, the parts being locked in adjusted position by the bolts and thumb-nuts *j*. The auxiliary bottom is secured to the first-mentioned bottom and adjustable longitudinally thereof through the medium of the slots *k* in the end rails of the former and bolts K passing through said slots and engaging apertures *k'* in the lower edges of the ends of the receptacle. By the utilization of the auxiliary bottom it will be seen that the escape-passages through the bottom of the receptacle may be adjusted to different sizes to suit various conditions.

L is a thumb-screw passing through one of the slats I at one end of the receptacle and arranged to impinge upon one of the slats H directly thereabove, if desired to serve as a locking means, the same, however, being primarily provided as a convenient means for shifting the slats I relative to the slats H.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In a separator of the character described, a receptacle, a slatted bottom therefor, in combination with an auxiliary slatted bottom arranged crosswise of said first-mentioned bottom, means whereby one of said bottoms is adjustable relative to the other, and means whereby the slats of one of said bottoms may be adjustable.

2. In a separator of the character described, a receptacle, a slatted bottom therefor, in combination with an auxiliary slatted bottom arranged crosswise of said first-mentioned bottom, means whereby one of said bottoms is adjustable relative to the other, and means whereby the slats of each bottom may be adjusted.

3. In a separator of the character described, a receptacle, a slatted bottom therefor, in combination with a removable auxiliary slatted bottom arranged crosswise of said first-mentioned bottom, and means whereby the slats of each bottom may be adjusted.

4. In a separator of the character described, a receptacle, a bottom therefor comprising a series of slats extending in one direction, and an auxiliary series of slats extending crosswise of said first-mentioned slats, and means whereby the slats in each series may be adjusted.

5. In a separator of the character described, a receptacle, in combination with an adjustable bottom therefor including a series of slats extending longitudinally of the receptacle, and an auxiliary series of slats extending transversely of said first-mentioned series of slats, and means whereby the slats in each series may be adjusted.

6. In a separator of the character described, a receptacle, a slatted bottom there-

for, an auxiliary slatted bottom arranged transversely of said first-mentioned bottom, and a slatted frame secured to said auxiliary bottom and adjustable relatively thereto, whereby the spaces between the slats of said auxiliary bottom may be increased or diminished.

7. In a separator of the character described, a bottom therefor comprising a plurality of adjustable slats, an auxiliary slatted bottom arranged transversely of said slats of the first-mentioned bottom and a slatted frame secured to said auxiliary bottom and adjustable relative thereto, whereby the spaces between the slats of the auxiliary bottom may be increased or diminished.

8. A slatted bottom of the character described comprising a plurality of slats arranged in parallel series, a bar pivoted to one of the slats at each end thereof, loose connections between both of said arms and each of the other slats whereby each arm may move in an arc to force said slats together or apart, in combination with means for locking the arms in various positions of adjustment on one side of said slats.

9. A slatted bottom of the character described comprising a plurality of slats ar-

ranged in parallel series, a pair of arms having their outer ends pivotally connected to one of the slats at each end thereof, loose connections between both of the arms and each of the other slats whereby each arm may move in an arc to force said slats together or apart, and means for locking the outer ends of said arms in various positions of adjustment on one of the slats.

10. A slatted bottom of the character described comprising a plurality of slats arranged in parallel series, a pair of arms having their outer ends pivotally connected to one of the slats at each end thereof, loose connections between both of the arms and each of the other slats whereby each arm may move in an arc to force said slats together or apart, a plurality of apertures in one of the slats of the bottom, and a pair of catches secured to the outer ends of the arms and adapted to engage with said apertures.

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

FRANCIS L. BLOCK.

Witnesses:

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CHARLES A. VIRGILS.