

G. F. NEWELL, Sr, & J. CROFT
Cockle-Separator.

No. 203,488.

Patented May 7, 1878.

Fig. 1.

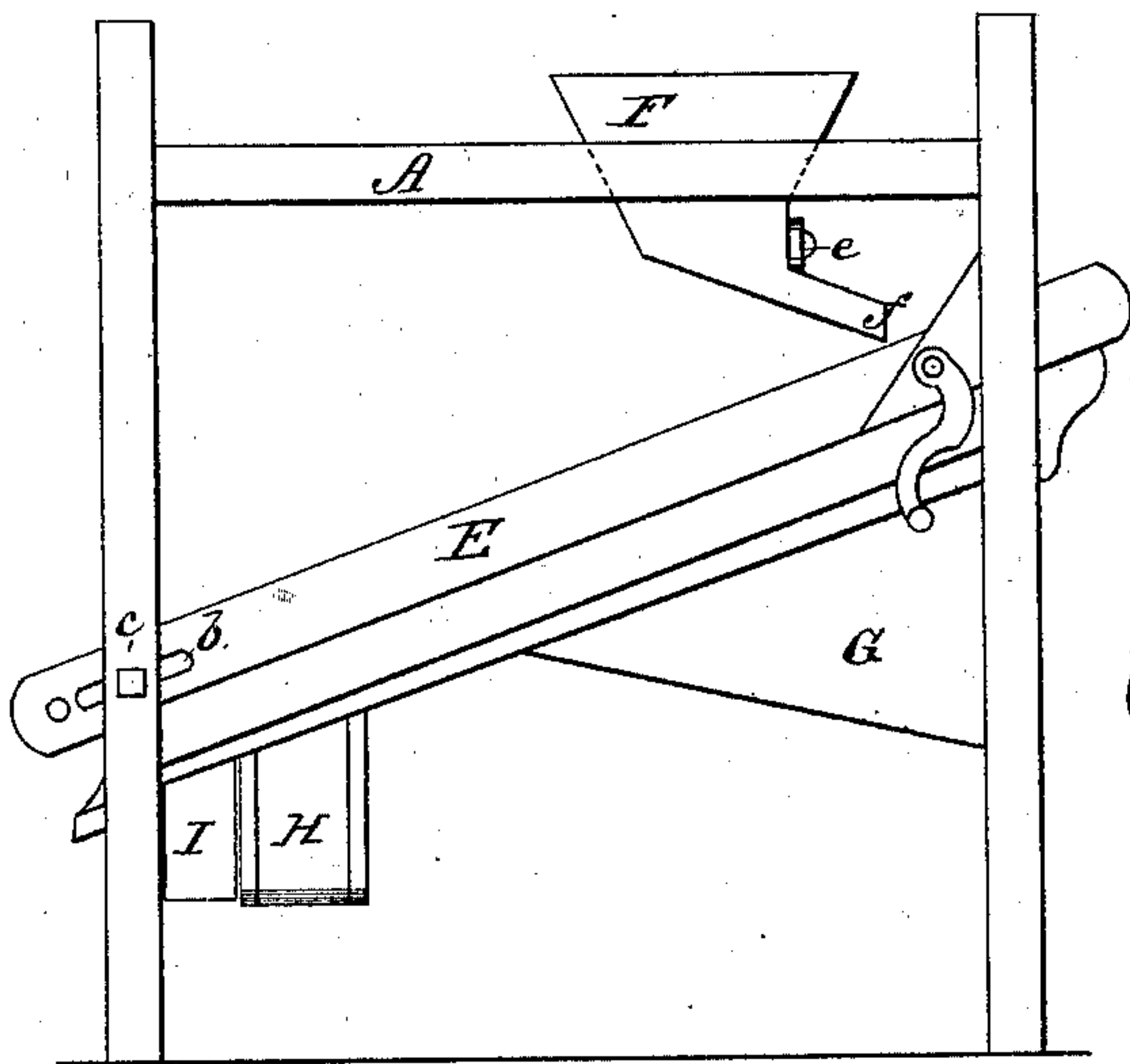


Fig. 2.

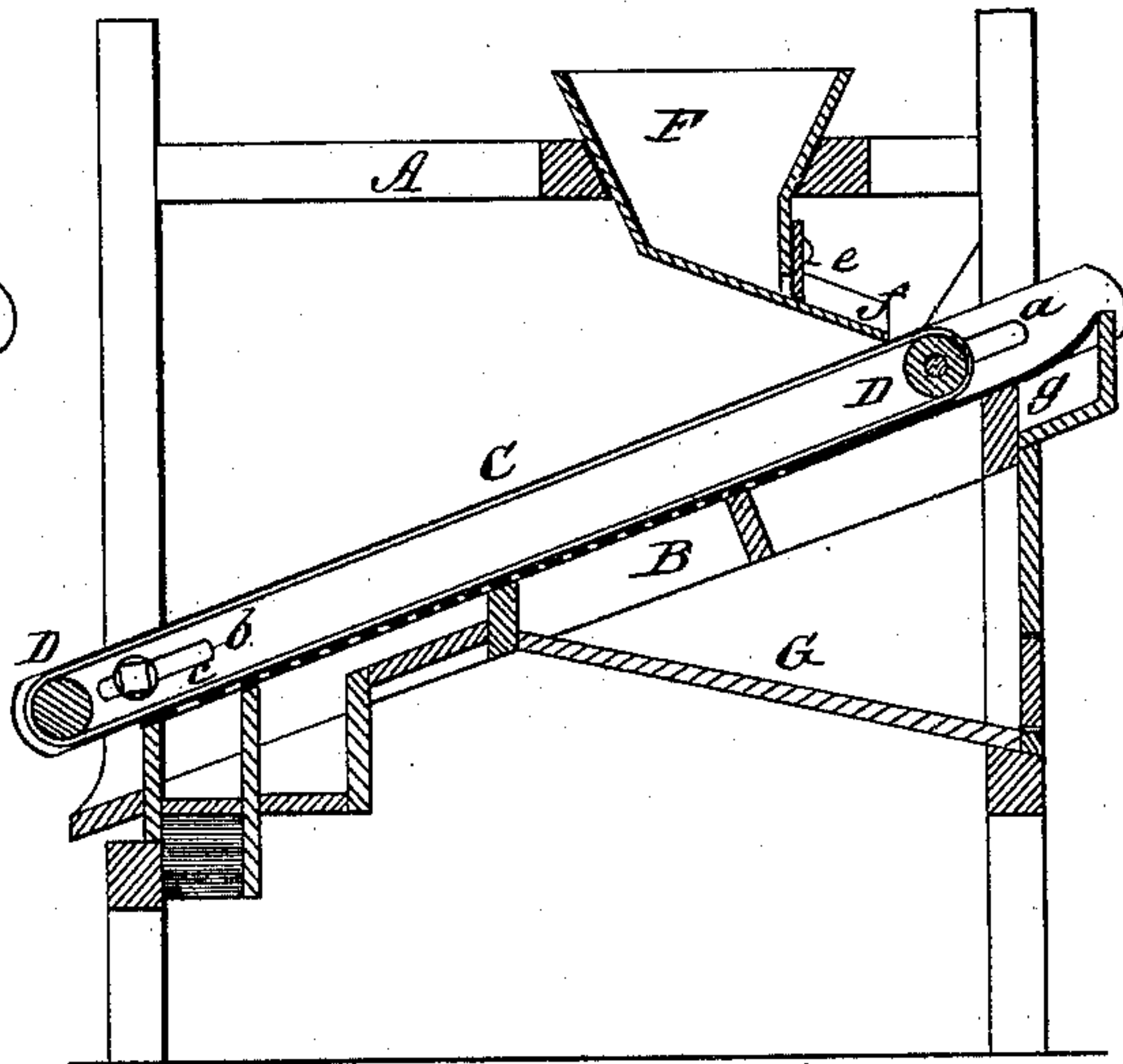
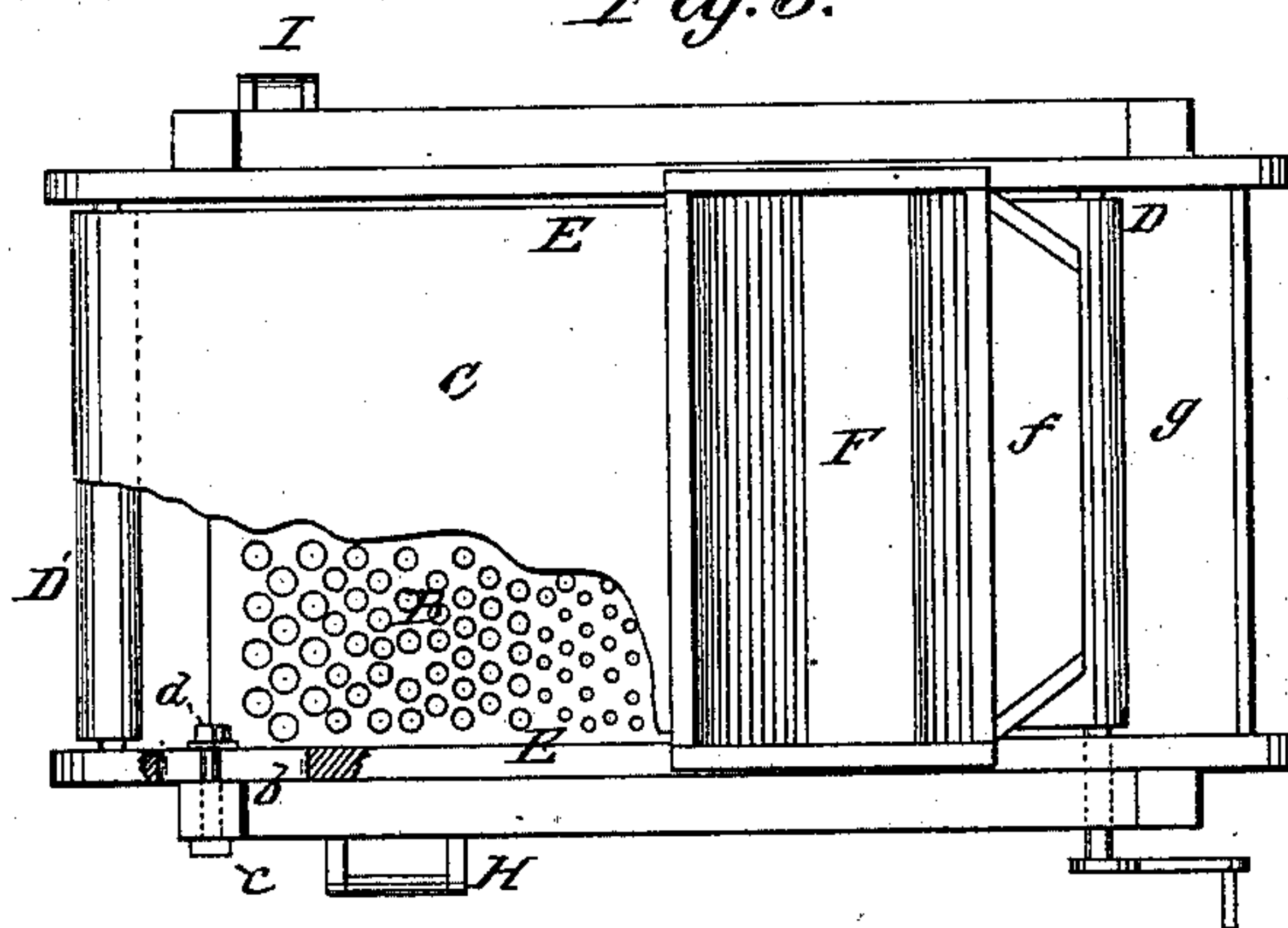


Fig. 3.



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UNITED STATES PATENT OFFICE.

GEORGE F. NEWELL, SR., AND JOSEPH CROFT, OF OSSEO, WISCONSIN;
SAID CROFT ASSIGNOR TO SAMUEL L. COX, JR., AND GEORGE F.
NEWELL, JR., OF SAME PLACE.

IMPROVEMENT IN COCKLE-SEPARATORS.

Specification forming part of Letters Patent No. **203,488**, dated May 7, 1878; application filed
March 2, 1878.

To all whom it may concern:

Be it known that we, GEORGE F. NEWELL, Sr., and JOSEPH CROFT, of Osseo, in the county of Trempealeau and State of Wisconsin, have invented a new and Improved Grain-Separator; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is a side elevation. Fig. 2 is a vertical longitudinal section; Fig. 3, a plan view, with one corner broken away.

Our invention is an improvement upon that form of grain-separator in which the mixed grain and impurities are passed over a perforated screen by the frictional contact of a revolving endless apron, whereby the shorter or more globular grains of cockle and other impurities are forced through the perforations of the screen, while the larger grains of wheat are held with flat sides to the holes, and are dragged over the same by the contact of the apron, and delivered together over the end of the screen free from the impurities.

Our improvement consists in making the screen inclined, to facilitate the passage of the grain, and in combining therewith a peculiar tension-adjusting device, which serves to keep the apron tight and flat down against the grains on the surface of the screen, to prevent the cockle-grains from jumping the holes, as they would in passing down the incline from their own momentum if the apron became loose and only touched the grains at certain points. The inclined arrangement of the said screen co-operates with the positive moving effect of the endless apron to render the passage of the grain more certain and uniform, while the tension adjustment of the apron co-operates with the inclined arrangement of the apron and screen, to prevent the too headlong tumbling of the grains of impurities down the incline when the band is slack, which tumbling and bouncing would cause the cockle-grains to skip the holes and fail to be separated.

In the drawing, A represents the main frame, in which is arranged inclinedly, at about an angle of forty-five degrees, the perforated

screen B, made of zinc or other suitable metal or composition of metals. Just above this inclined screen is arranged an endless and parallel revolving apron, C, passing around an upper roller, D, journaled fixedly in the frame-work, and a lower roller, D', journaled in the longitudinally-adjustable side bars E. The upper ends of these side bars are slotted at *a*, and through these slots pass the journals of the upper roller, so that the said side bars, while retained and guided by said journals of the roller, have also a longitudinal adjustment thereon. The lower ends of these bars are also slotted at *b*, and through these slots, on each side, passes a screw-bolt, *c*, fixed in the frame A, which screw-bolts upon the inside of the side bars enter nuts *d*.

These devices, it will be seen, serve to regulate the tension of the apron, for as the latter becomes slack the bolts *c* are loosened, the side bars carrying the lower roller drawn down, and the bolts then turned again to tighten the nut *d* against the side bars at a higher point of the slot to hold the roller to its adjustment.

F is a hopper, arranged in the top part of the frame-work, which hopper is provided with a suitable cut-off, *e*, and shelf *f*, which latter delivers the grain between the upper roller and a curved extension, *g*, from the screen. The screen B is perforated with holes of varying size, the smaller ones being near the top, and through which the cockle, &c., pass, and are received into the chamber G, while the larger perforations are in the lower end of the screen. These larger sizes of perforations at the bottom serve to grade the wheat, the first increase in size delivering the small wheat to a trough, H, and the next increase, or largest holes, delivering a medium size of grain to a trough, I, while the finest and largest grains are delivered over the lower end of the screen into a suitable receptacle.

In defining more clearly the distinctive features of our invention, we would state that we are aware of the patent to Watson, granted October 29, 1861, which shows a horizontal apron moving over a stationary screen, for the purpose of effecting the separation of different sizes of grains upon the same principle as in

our invention. In this case, however, there is no incline to assist the feeding of the grain, and if the apron becomes slack the grain will not feed. By making the screen and apron inclined it will be seen that we facilitate the feed; but the inclination alone does not effect the desired result, because if the apron become slack and the screen be inclined, some of the grains, and especially the round or globular cockle-grains, will roll too fast, and, in moving with their own momentum more rapidly than the apron, they jump the holes intended for their elimination. Hence, we have added a tension device for the apron, which, in connection with the inclination of the apron and screen, serves to give positive motion to the sluggish grains to effect a uniform feed, and at the same time has a retarding effect upon the grains which have a tendency to move too rapidly from their own gravity down the incline.

Having thus described our invention, what we claim as new is—

1. In a grain-separator, the combination of an inclined endless apron, a stationary inclined screen arranged beneath and in contact with the apron, and tension-adjusting devices for the apron, substantially as described.

2. The combination, with the inclined screen B, of the endless apron C, the roller D, journaled fixedly in the frame-work, the side bars E, carrying the lower roller, and having slots at their upper ends embracing the journals of the upper roller, and slots in its lower end embracing a clamping-bolt, *c*, substantially as described.

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Witnesses:

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