

(No Model.)

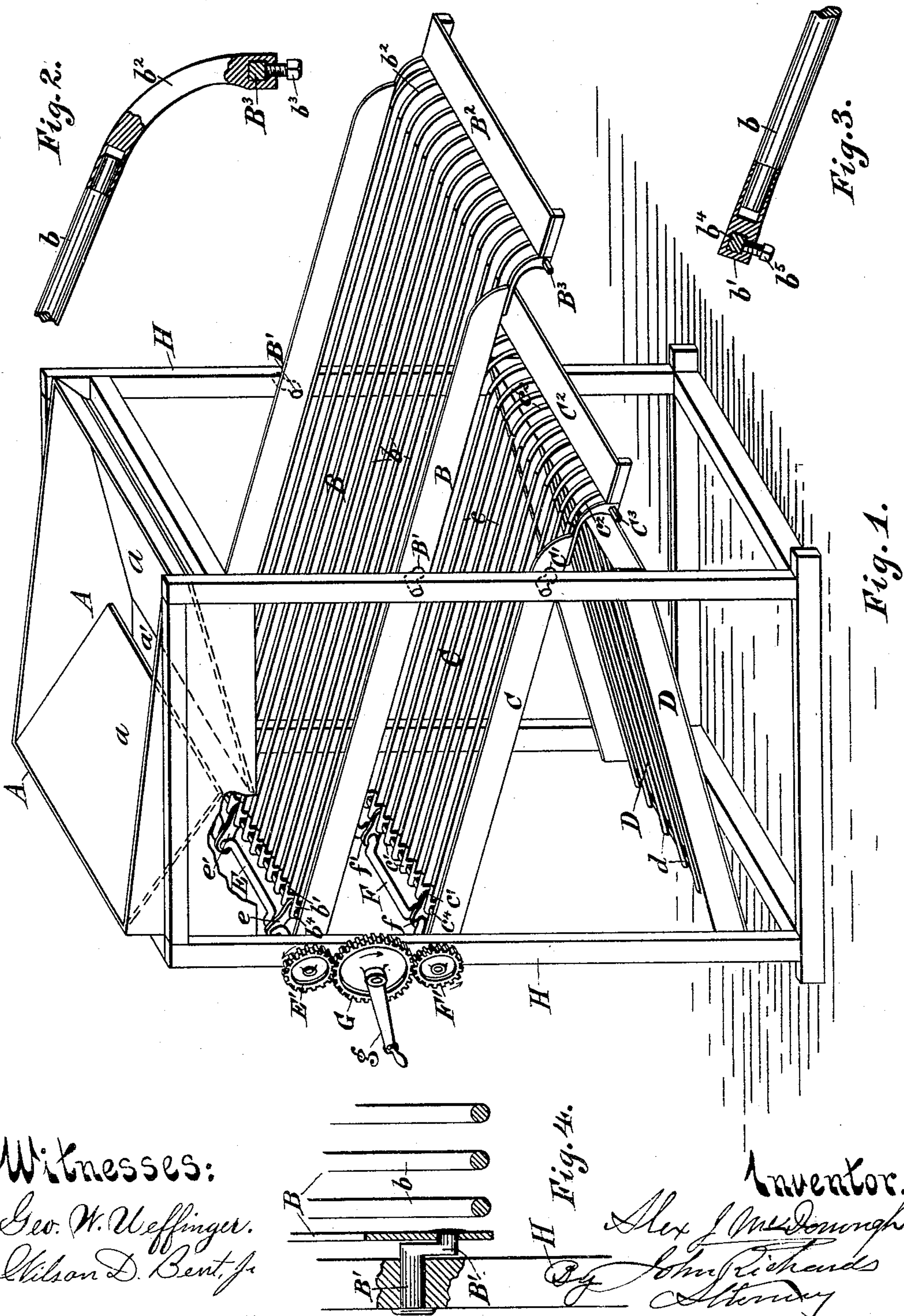
2 Sheets—Sheet 1.

A. J. McDONOUGH.

POTATO SEPARATING AND GRADING MACHINE.

No. 495,945.

Patented Apr. 18, 1893.



Witnesses:

Geo. W. Weffinger.
Wilson D. Bent, Jr.

Inventor.

Alex J. McDonough
By John Richards
Attorney

(No Model.)

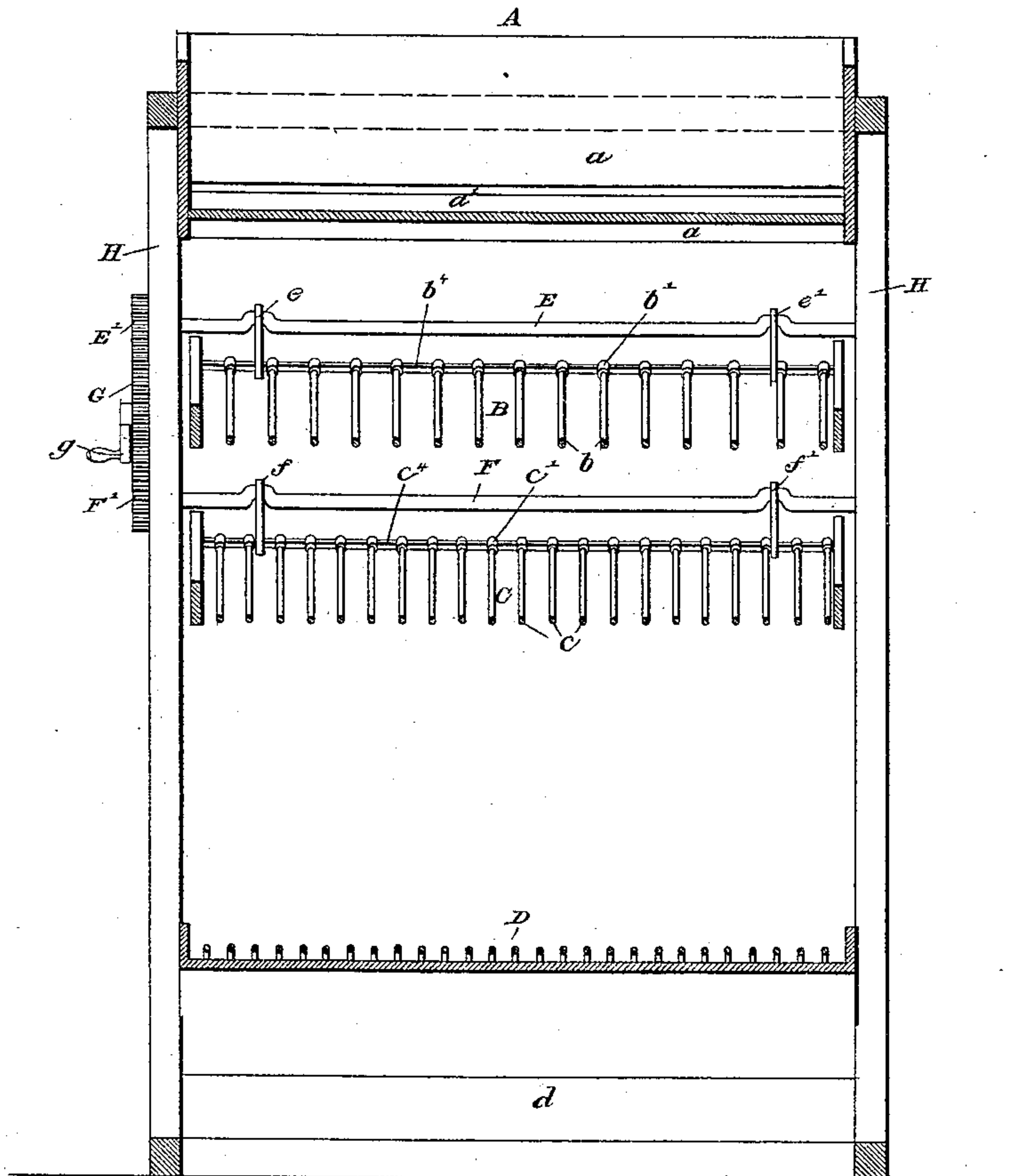
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A. J. McDONOUGH.

POTATO SEPARATING AND GRADING MACHINE.

No. 495,945.

Patented Apr. 18, 1893.



Witnesses
Edw. S. Dwyer, Jr.
Thos. L. Boyden

Inventor
Alexander J. McDonough
per Fred W. Vasker
Attorney

UNITED STATES PATENT OFFICE.

ALEXANDER J. McDONOUGH, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR
OF ONE-FOURTH TO JOHN V. BAIRD, OF SAME PLACE.

POTATO-SEPARATING AND GRADING MACHINE.

SPECIFICATION forming part of Letters Patent No. 495,945, dated April 18, 1893.

Application filed April 12, 1892. Serial No. 428,886. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER J. McDONOUGH, a citizen of the Dominion of Canada, residing at San Francisco, county of San Francisco, State of California, have invented certain new and useful Improvements in Machines for Grading, Assorting, and Cleaning Potatoes; and I hereby declare the following specification and the drawings therewith to be a full and exact description of my invention.

My invention relates to machines for grading, assorting, and cleaning potatoes into various sizes, and removing the earth and dirt from the same, and consists in the combination of two movable and one fixed screen, the whole contained on one frame, with suitable gearing for operating the screens, as shown in the accompanying drawings, in which—

Figure 1 is a perspective elevation of one of my improved potato grading or assorting machines, showing all the various parts connected. Fig. 2 is an enlarged detail, showing the manner of forming the curved ends of the bars or grates of the vibrating screens. Fig. 3 is another enlarged detail showing the metal tips or mountings for the rear or highest ends of the bars or grates of the vibrating screens. Fig. 4 is another enlarged detail, showing the oscillating supports on which the vibrating screens are mounted. Fig. 5 is a vertical transverse section of the machine, showing the graduated screens.

Similar letters of reference on the different figures indicate corresponding parts of the machine.

My invention relates to machines for assorting, selecting, or, as it is commonly called, grading, potatoes so as to separate them into their classes or lots of different size, also cleaning them and removing the sprouts when required and thus adapt them for market, for seed, or for any other purpose.

It consists of a machine having three screens, two of which have a vibrating motion imparted to them by suitable gearing, and a fixed screen at the bottom; it also consists in various mechanical details of the machine, as will be more fully explained in connection with the drawings.

The main frame H is of the usual construction, and requires no explanation. On the top of the main frame is a hopper A, into which potatoes are fed, and slide down on the inclined faces *a a*, passing through the throat *a'*, and from there they fall on the first screen B. So many of the potatoes as will not fall through the bars or grates of this screen pass off over the apron *B²*, and are there collected. The potatoes passing through the screen B, fall on the second one C, which is arranged with finer meshes between the bars S, and the same operation occurs as before, and a second size or grade is selected, and falls off over the apron *C²* as before. Such potatoes as pass through between the bars of this second screen C, fall on the stationary one D, which has still finer meshes, permitting only the smallest or waste potatoes to pass through, with earth or dirt that is detached by the shaking or vibrating action of the screens B and C. This gives a third or smaller grade of potatoes that are discharged at *d*.

To operate the two main screens B and C, I employ two cranked shafts E and F, each having two cranks *e e'* and *f f'*, as shown in Fig. 1. These two shafts are supported on bearings on the main frame H, and are connected or driven by means of wheels *E'* and *F'*, keyed on the ends. Between and meshing into these wheels *E'* and *F'*, is an intermediate wheel G, operated by a crank *g*, so that both shafts E and F are revolved at equal speed and in opposite directions. The cranks on these shafts E and F are also set opposite, so that the main screens B and C connected to the cranks by the links *e e'* and *f f'* will be given a simultaneous movement in opposite directions, and thus neutralize any vibration of the machine from the vibratory motion of the screens.

To connect the discharge ends of the bars or grates *b* and *c* I employ metallic tips *b²* of curved form as shown in Fig. 2. Through the ends of these tips is a square hole to receive a bar *B³* to which each bar is fastened by set screws *b³*. At the other ends of the screens the bars or grates are supported by means of metallic sockets *b'* as shown in Fig. 3, having also a through bar *b⁴* fastened by set screws *b⁵* so the bars *b* and *c* can be adjusted sidewise

and thus the spaces or meshes arranged at will or as the work may demand, and the whole confined and held firmly in place.

5 The screens B and C are suspended on the main frame H by means of crank or oscillating bearings B' shown in Fig. 4. These cranks or supports fit loosely in the sides of the screens B and C, and also in the main frame H, so that the curvature of their movement gives
10 the screens B and C a vertical or curved as well as a longitudinal movement, and thus produces a suitable agitation of the potatoes as they pass over the screens.

15 The two screens B and C, instead of being set parallel as shown, may be set with their pitch opposite so as to discharge at each end of the main frame, in which case the driving or shaking gearing would require modification accordingly.

20 It will be noted that the screen B is made longer than the screen C, so that the potatoes can be discharged from the screens with greater facility into their proper receptacles.

Having thus described the nature and ob-

jects of my invention, what I claim as new, 25 and desire to secure by Letters Patent, is—

A potato separator, consisting of the main frame H, the hopper A therein, the graduated screens B and C, suspended in the cranked bearings B' and C' and consisting of the ad- 30 justable bars *b* and *c*, supported at one end by the bars *b*⁴ and *c*⁴ and sockets *b*' and *c*' and held in place by set screws, the curved metallic tips *b*² and *c*² connecting the discharge ends of the bars *b* and *c*, said tips being pro- 35 vided with square holes to receive the bars B³ and C³, secured in place by set screws, the aprons, the gearing for operating said screens and the stationary screen D below the oscillating screen, substantially as described. 40

In testimony whereof I have hereunto affixed my signature in the presence of two witnesses.

ALEXANDER J. McDONOUGH.

Witnesses:

ALFRED A. ENQUIST,

WILSON D. BENT, Jr.