(No Model.) 2 Sheets—Sheet 1.

W. W. DOOLITTLE.

SEPARATOR FOR CASTINGS.

No. 490,274. Patented Jan. 24, 1893.

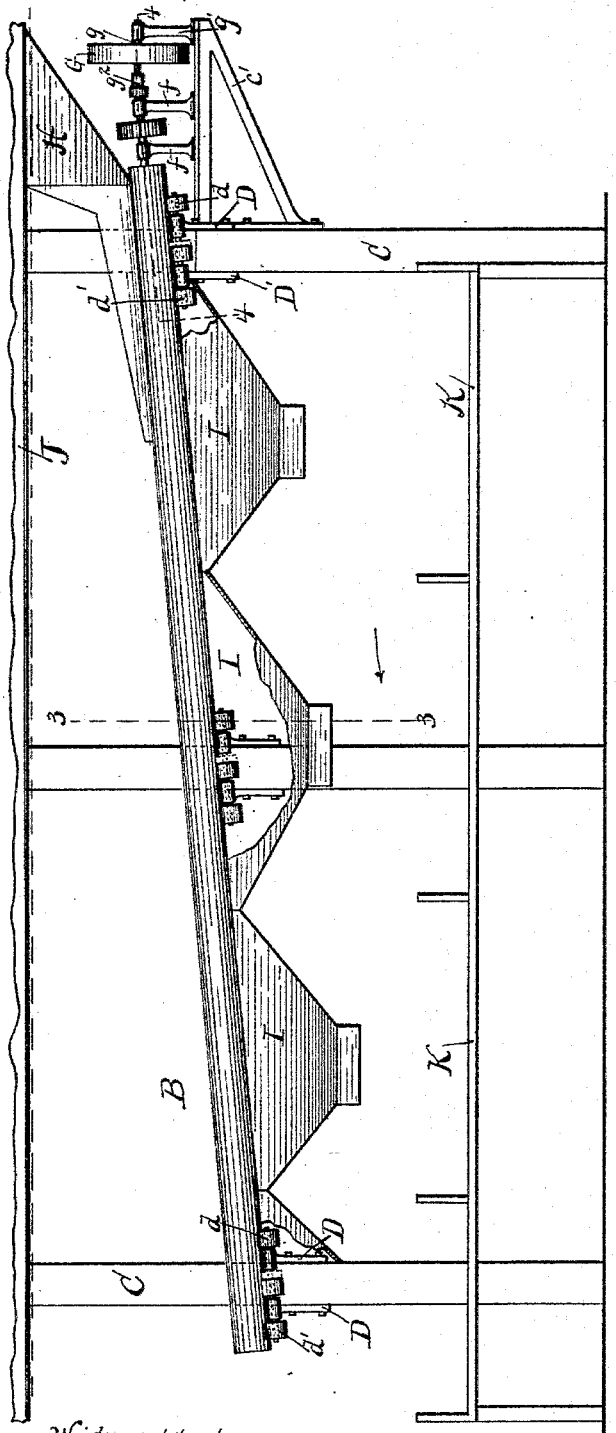

Fig. 1.

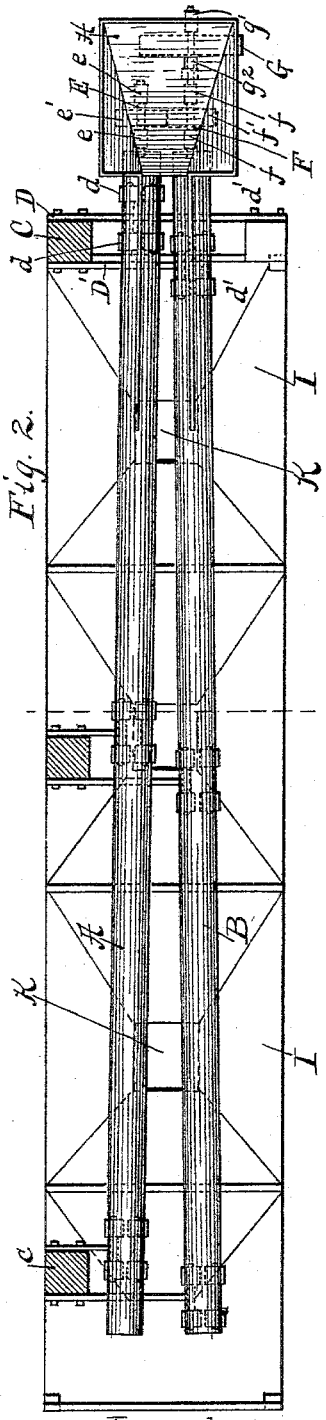

Fig. 2.

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Fig. 4.

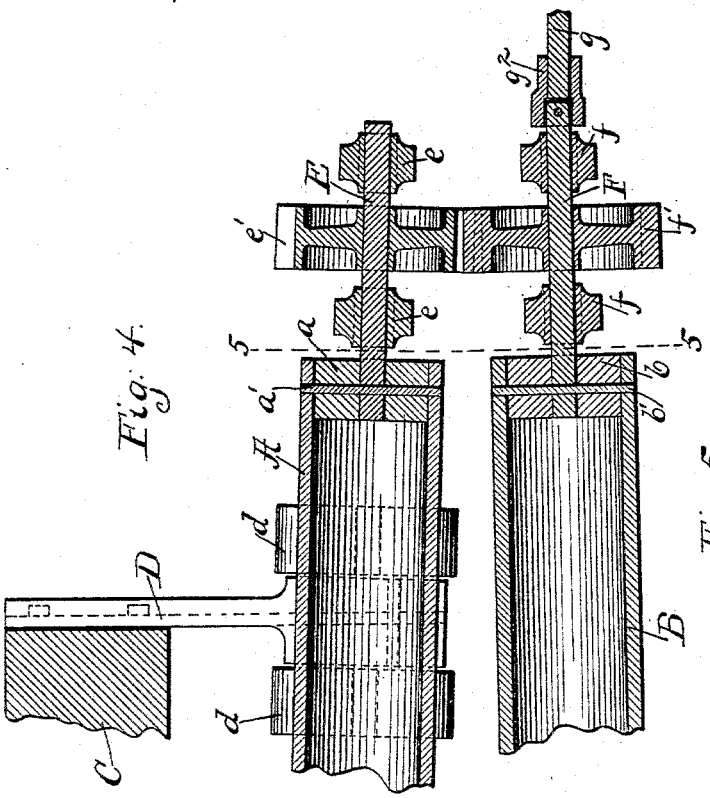


Fig. 5.

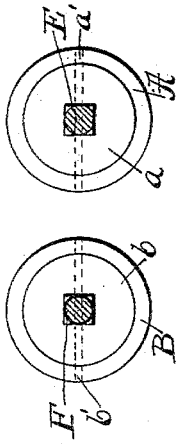
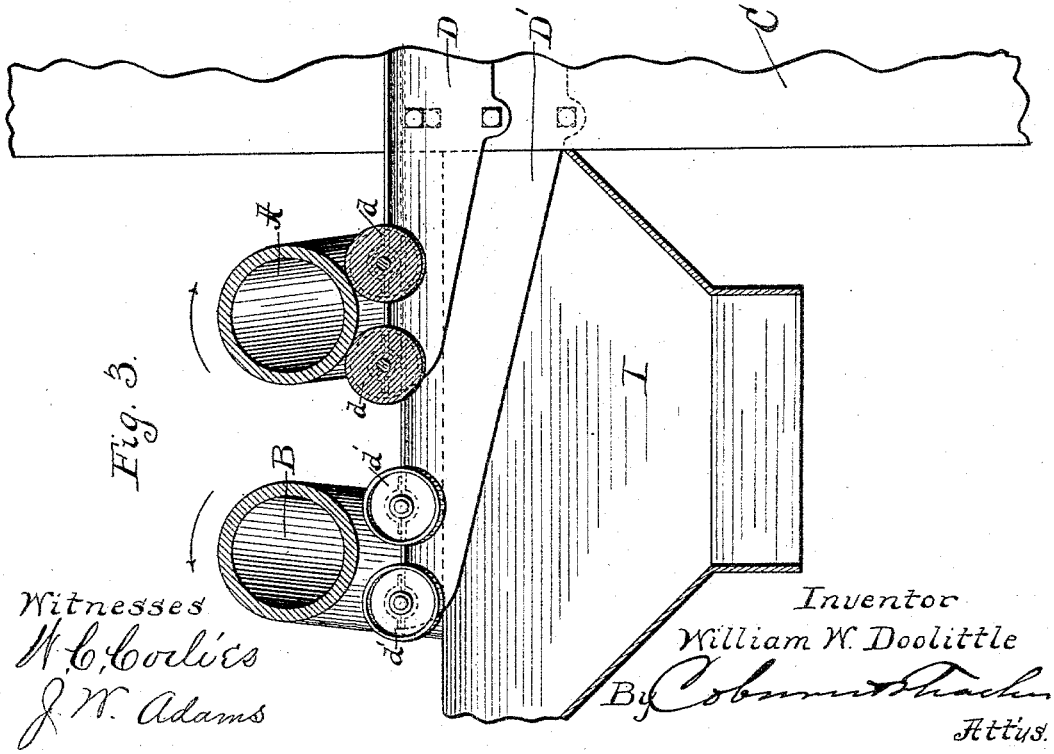


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM W. DOOLITTLE, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE CRANE COMPANY, OF SAME PLACE.

SEPARATOR FOR CASTINGS.

SPECIFICATION forming part of Letters Patent No. 490,274, dated January 24, 1893.

Application filed March 10, 1892. Serial No. 424,448. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. DOOLITTLE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Separators for Castings, &c., which are fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a side elevation of a separator embodying my invention with some parts broken away; Fig. 2, a plan view of the same; Fig. 3; a cross-section of the same, taken on the line 3, 3 of Fig. 1; Fig. 4, a detail plan section, taken on the line 4—4, of Fig. 1; and Fig. 5, a detail cross-section, taken on the line 5—5, of Fig. 4. Figs. 1 and 2 are upon one scale; and Figs. 3, 4 and 5 upon another and enlarged scale.

My invention relates to a machine for separating or sorting, according to size, castings, coal, ore and other like coarse material. The machine is particularly intended for sorting castings, but I do not wish in any way to be understood as limiting it to this particular purpose.

The invention consists in special means for supporting two long cylinders or tubes arranged in the same plane, slightly inclining downward from one end to the other, and with the opening between them gradually widened from the upper to the lower ends thereof.

I will now describe in detail the construction and operation of the machine shown in the drawings and the particular improvements which I believe to be new and wish to secure by Letters Patent will then be pointed out more definitely in claims.

In the drawings A and B represent two long rollers or cylinders. These cylinders are of the same size and preferably tubular, as seen in the drawings, though they may be solid. They are mounted on bearings which permit them to be rotated and at the same time give them an inclination downward from one end to the other, as seen in Fig. 1. These bearings are also arranged, so that at their upper or higher ends, the cylinders will be brought quite close together and thence will diverge or separate gradually from each other to their opposite or lower ends, as seen in Fig. 2. In the use of these rollers for sorting or separating castings and other coarse material, it is intended to deliver the material upon the cylinders at the upper or higher ends thereof and to rotate the latter, by any suitable mechanism for giving them a movement outward from each other. Obviously the material will gradually work downward upon the rollers and, when a point is reached where the opening between them is sufficiently large, articles of a corresponding size will drop through and so the material will be separated or sorted, as it passes down the rollers from one end to the other thereof, the smallest articles dropping through first and so on until a point is reached where the space between the rollers is sufficient for the largest articles delivered. Now the mounting and driving of these rollers may be accomplished by any suitable devices, whereby the above-named operation may be performed; those shown in the drawings, which I will now describe, are only in illustration of one practical organization. Here there is an upright frame structure, C, with posts, *c*, along one side. Brackets D and D′ are secured in pairs to each of these posts and on opposite sides thereof, the bracket D being considerably shorter than D′. These brackets all extend to one side in the same direction from the posts, but are arranged in an inclined plane and also with the difference in length between them increased in each pair beginning with those standing highest. The short brackets D carry on their outer ends bearing rollers, *d*, which are suitably mounted in the brackets and arranged to receive the cylinder or roller A thereon. The long brackets D′ also carry similar bearing rollers, *d′*, which are mounted in like manner and are arranged to receive thereon the companion roller B. Obviously this provides for the proper mounting of the rollers, as already described, with a widening space between them and in such manner that they may be rotated. At the upper end of the roller A there is a short journal, E, which is mounted in short posts, *e*, on a bracket, *c′*, fixed at this end of the upright frame C. If the rollers are tubular, as shown in the drawings, this jour-

nal is attached thereto, by means of a plug, *a*, set in the end of the roller, in which the journal is secured by means of a pin or bolt, *a'*, passing through all three parts, as seen in Fig. 4. A pinion, *e'*, is fixed on this journal between the posts *e*. The roller B is provided with a similar journal, F, mounted on like posts, *f*, and secured to the roller by means of a plug, *b*, and a pin, *b'*, as in the former case. A pinion, *f'*, is secured to this journal and engages with the pinion *e'* of the opposite roller. A driving-wheel, G, shown in the drawings as a band-pulley, is fixed on a shaft, *g*, one end of which is mounted in a short post, *g'*, also on the bracket *c'*, while at the other end it is secured to the outer end of the journal F by a tumbling joint, g^2. This driving-wheel or pulley is rotated in a direction to turn the roller B inward toward its companion and obviously the latter will be rotated in like manner inward through the pinions E and F. A hopper or chute, H, is arranged above the rollers at the upper ends thereof, which is adapted to deliver the material directly upon the latter at their highest point; in the drawings this hopper is shown arranged immediately below a flooring, J, on which the material may be conveyed to the hopper. A series of hoppers, I, is arranged immediately below the rollers and along the length thereof, by which the material, as separated within certain limitations as to size, is collected and delivered to bins, K, arranged immediately below the hoppers. These features of the construction shown in the drawings are all subordinate, however, and are subject to a variety of changes to suit different locations and different work.

The main feature of my invention is the pair of long cylinders or rollers mounted in an inclined plane and diverging from their upper to their lower ends and connected with suitable devices for giving them a rotatory movement outward from each other; and I do not wish to be understood as limiting myself to any particular construction of the rollers or to particular driving mechanism or adjuncts used in connection with this separating device.

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

In a separator for castings, &c., the cylinders A—B, in combination with the supporting brackets D—D' of different lengths arranged by pairs in different vertical planes, supports for said brackets all arranged at one side of the said cylinders the bearing rollers *d*—*d'* mounted on said brackets and arranged with the spaces between the successive pairs gradually increased, and mechanism for rotating the cylinders outward on said roller bearings, substantially as described.

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