

(No Model.)

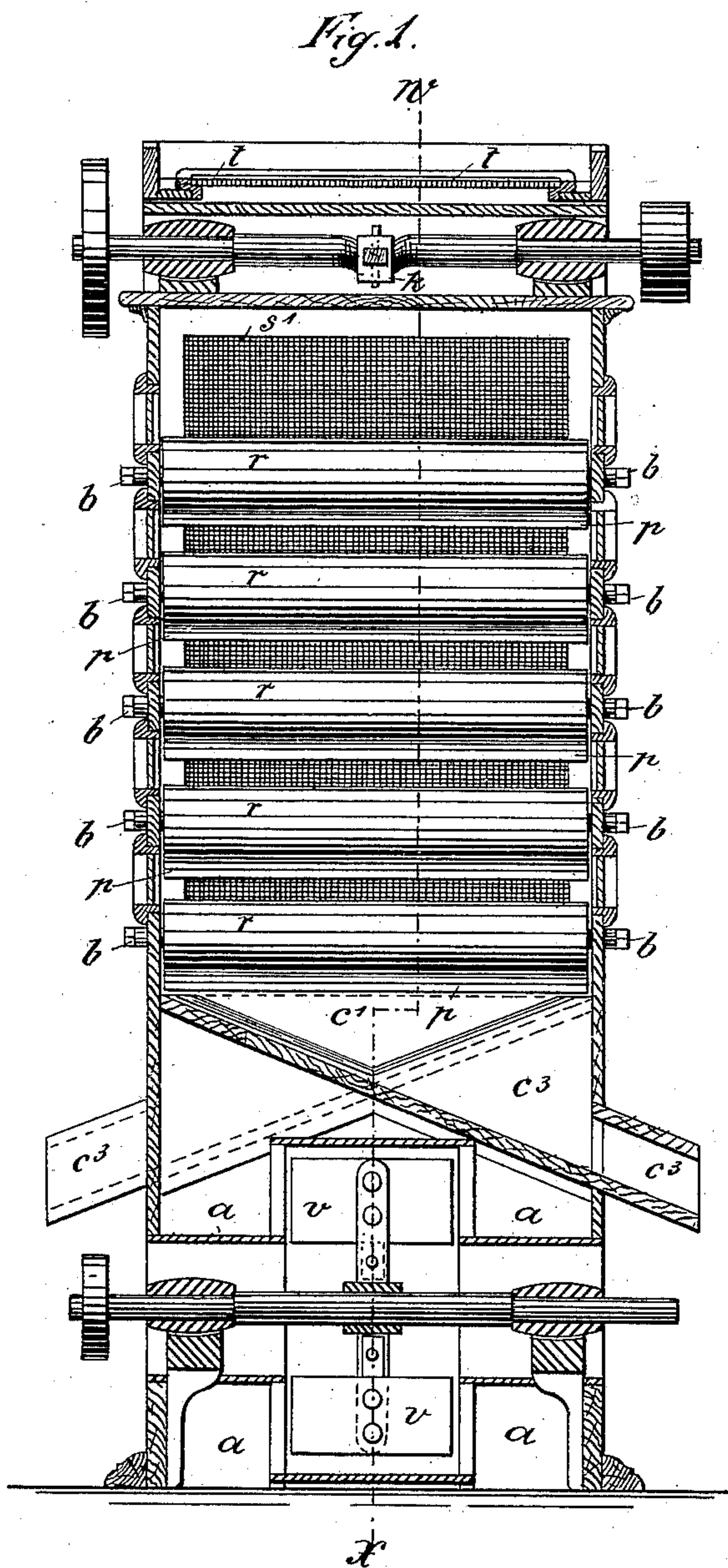
2 Sheets—Sheet 1.

E. WEISS.

SEPARATING MACHINE FOR CLEANING GROATS.

No. 378,562.

Patented Feb. 28, 1888.



Witnesses:  
J. Stitzel.  
Th. Hoover.

Inventor: Emil Weiss.  
by R. Dindler,  
attorney.

(No Model.)

2 Sheets—Sheet 2.

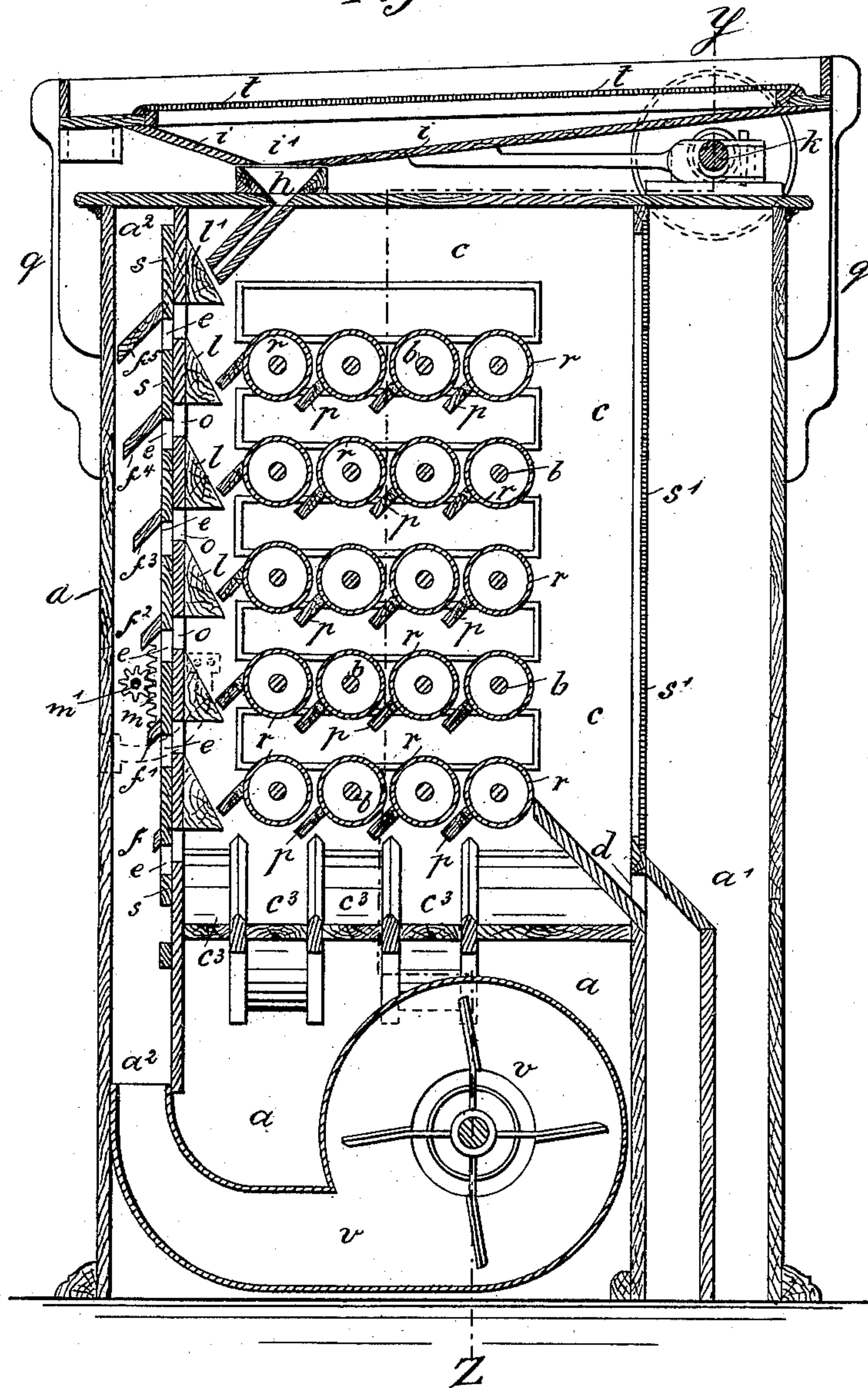
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Fig. 2.



Witnesses:  
J. Clutzel.  
J. Hoese.

Inventor: Emil Weiss.  
by R. Deissler,  
attorney.



# UNITED STATES PATENT OFFICE.

EMIL WEISS, OF BERLIN, GERMANY, ASSIGNOR OF ONE-HALF TO LOUIS  
FRAENKEL, OF SAME PLACE.

## SEPARATING-MACHINE FOR CLEANING GROATS.

SPECIFICATION forming part of Letters Patent No. 378,562, dated February 28, 1888.

Application filed February 16, 1887. Serial No. 227,842. (No model.) Patented in Germany April 15, 1886, No. 37,830.

*To all whom it may concern:*

Be it known that I, EMIL WEISS, a subject of the Emperor of Austria-Hungary, and a resident of Berlin, in the Kingdom of Prussia, German Empire, have invented certain new and useful Improvements in Separating-Machines for Cleaning Groats, (for which I have obtained Letters Patent in Germany, No. 37,830, April 15, 1886,) of which the following is a specification.

My invention relates to improvements in separating-machines for cleaning groats, and has for its object to prevent the obstruction of the feed-channels by the groats. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a transverse vertical section of my improved machine on the broken line  $y z$ , Fig. 2. Fig. 2 is a longitudinal vertical section of the same upon the broken line  $w x$ , Fig. 1.

Similar letters refer to similar parts in the two views.

$a a' a^2$  is the outer casing of my machine, which has in its lower part a blast-fan,  $v$ , of well-known construction. When put into motion, this fan  $v$  drives a strong current of air into the compartment or vertical air-trunk  $a^2$ , and from thence through the openings of a slide,  $s$ , and through the openings of a partition,  $o$ , of the frame  $a$  into the cleaning-machine proper,  $c$ . At the top of the machine a sieve,  $t$ , is arranged, being fixed to a trough,  $i$ , and provided with wooden springs or guides  $g$  at two sides, to secure an equal motion of said sieve as soon as it is moved by the crank  $k$ , situated underneath the trough  $i$ . The latter is provided with an aperture,  $i'$ , at its lower part and connected with a channel,  $h$ , leading to the inclined plate  $l'$  of the box  $c$ . This box  $c$  is provided with a number of rolls,  $r$ , being arranged as shown in Fig. 1 of the drawings, which are mounted on shafts  $b$ , that rest in the outside casing,  $a$ , of the machine, and may be turned at times, said box being, by means of a sieve,  $s'$ , separated from the compartment  $a'$ . Nearly touching these rolls  $r$  a corresponding number of slanting boards,  $p$ , are arranged, being fastened to the walls of the frame  $a$ .

The machines heretofore built for the above-mentioned purpose were generally provided

with funnels consisting of two boards set to an angle which had on its vertex but a small space for the passage of the groats, and which space was often obstructed by the groats when the latter were fed a little faster than usual into the machine. The process of cleaning had then to be stopped until the obstruction was removed, which gave considerable annoyance to the workmen.

By my arrangement of rolls  $r$  an obstruction can be easily removed without stopping the machine by simply turning one or several or all of the rolls  $r$ . This may be done by providing the ends of the shafts  $b$  with winch-handles or with toothed wheels that gear into each other, or by any other well-known means, to which no claim is laid in this specification, and which are therefore not shown in the drawings.

By the turning of the rolls  $r$  the groats are removed that may have collected between the rolls  $r$ , and the dust, &c., that sticks to the surface of the rolls is scraped off from them by the boards  $p$ .

Another improvement in the construction of this machine consists in a regulator for the force of the air-current that is driven into the compartment  $a^2$ , having lateral openings, and through a slide,  $s$ , and partition  $o$  by the above-mentioned fan. This slide  $s$  has for each set of rolls  $r$  an opening,  $e$ , and corresponding projections  $f f' f^2 f^3 f^4 f^5$  above the openings  $e$ , of which projections the lowest one,  $f$ , is the shortest, and the uppermost,  $f^5$ , is so far extending that it touches the outside casing,  $a$ , of the frame of the machine. The purpose of this is to force a stronger blast through the upper openings of the slides than through the lower ones, so that most of the dust can be taken away from the groats in the upper part of the cleaning-box  $c$ . The inclined deflecting-boards  $f f' f^2 f^3 f^4 f^5$  are graduated in width in the manner specified in order to equalize the strength of the blast through the successive apertures  $e$ , and the boards, being attached to slide  $s$ , and moving with it, thereby maintain the same relation to the openings  $e$ . The slide  $s$  is movable by the gearing  $m$  and  $m'$ , so as to open or close each blast-inlet, according as a stronger or weaker blast is desired.



On the inside of the inner box, *c*, the inclined plates *l* are attached to the inner wall between the air-openings *o*.

The operation of the machine is as follows:

5 When the groats are thrown on the sieve *t* and motion communicated thereto, they fall into the trough *i*, which has in its lowest part an opening, *i'*, which communicates with box *c* by channel *h*. When in the box *c*, the groats  
10 fall first on the uppermost inclined plate, *l*, and then on the uppermost set of rolls, *r*. On their way they are subjected to the influence of strong blast, and the principal portion of the lightest dust will be blown through the sieve  
15 *s'* into the compartment *a'*. From the first set of rolls the groats come to the second, and so forth, always being subjected to the full force of the blast that comes through the respective openings *e* of the slide *s*. The heavier parti-  
20 cles of the dirt and dust will not reach the sieve *s'*, and will hence fall through chute *d* into a separate compartment being divided from *a'*. The groats themselves fall at last into four inclined chutes, *c'*, alternately inclined in  
25 opposite directions and discharging at opposite sides of the outer casing, *a a' a''*. When the passage between two or more of the rolls is obstructed, it is but necessary to turn the respective rolls or all rolls, according as the  
30 gearing may be.

Having thus fully described and explained the nature of my invention, I claim as new and desire to secure by Letters Patent—

1. In separating-machines for cleaning groats, the combination of the feed-hopper, outer cas- 35 ing, the blast-fan, the vertical blast-trunk having lateral blast-openings, a series of movable rolls arranged transversely of the outer casing, with intervals between them and forming di-  
40 viders for grading the material falling through the air-current, and the spouts or troughs *c'*, arranged to receive the graded material, substantially as set forth.

2. The combination of the feed-hopper, the outer casing, the blast-fan, the vertical blast- 45 trunk having lateral blast-openings, the inclined plates attached to the inner wall of the blast-trunk, the series of movable rolls having intervals between them and serving as divid-  
50 ers for the falling material, and the boards or scrapers *p*, substantially as set forth.

3. The combination of the feed-hopper, the outer casing, the movable dividing rolls, the blast-fan, the vertical blast-trunk having lat- 55 eral openings, the vertical slide *s*, having openings *e* and registering therewith, and the inclined deflecting-boards *f f'*, &c., attached to said slide above the openings *e* and gradu-  
60 ated in width, the widest being the uppermost, substantially as set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

EMIL WEISS.

Witnesses:

A. MÜHLNER,  
B. ROE.