

No. 626,306.

Patented June 6, 1899.

W. SELTNER.

SEPARATOR FOR GRANULAR OR LIKE MATERIAL.

(Application filed Dec. 28, 1897.)

(No Model.)

2 Sheets—Sheet 1.

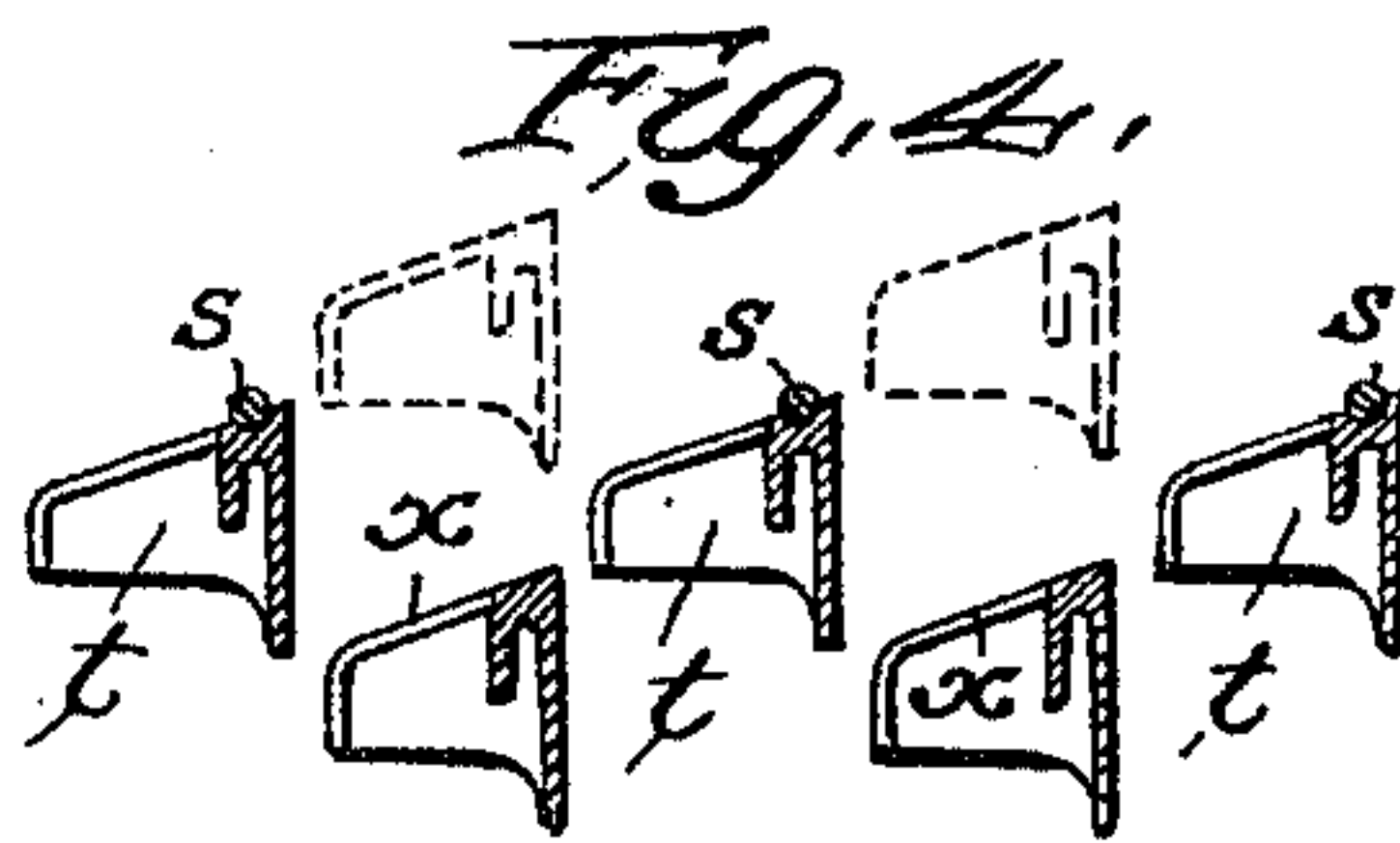
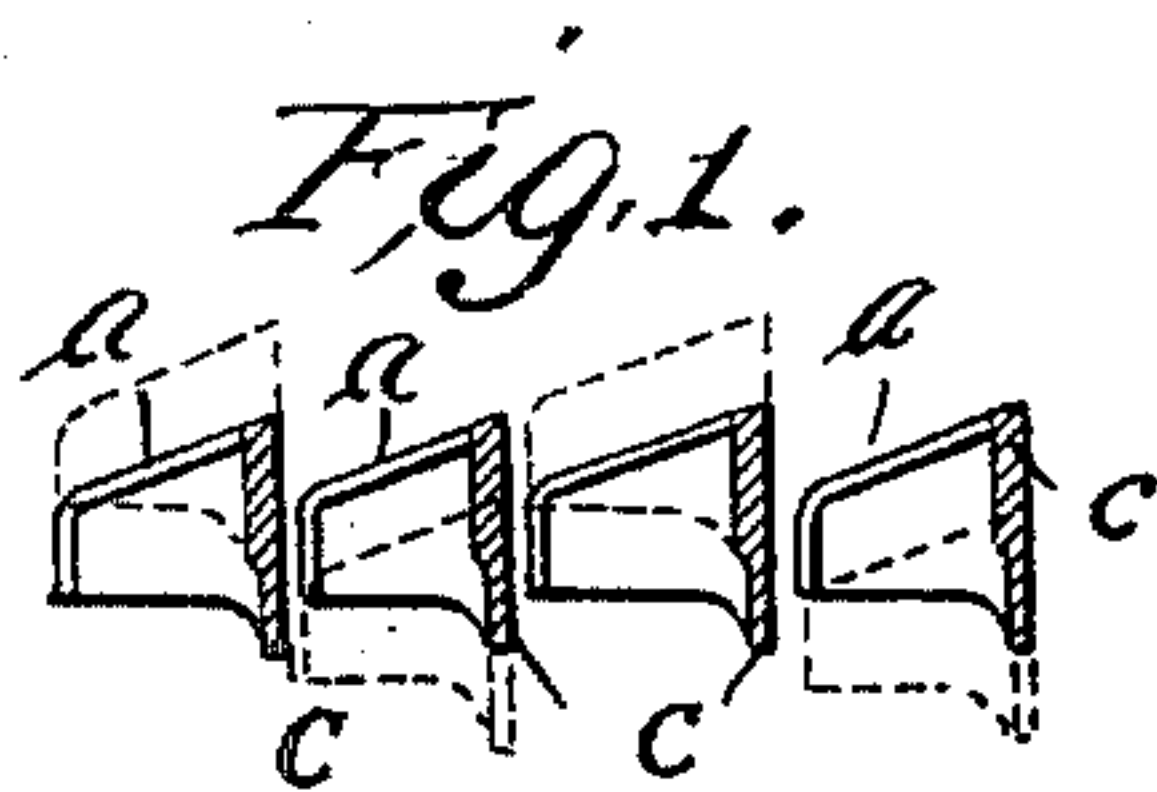


Fig. 5.

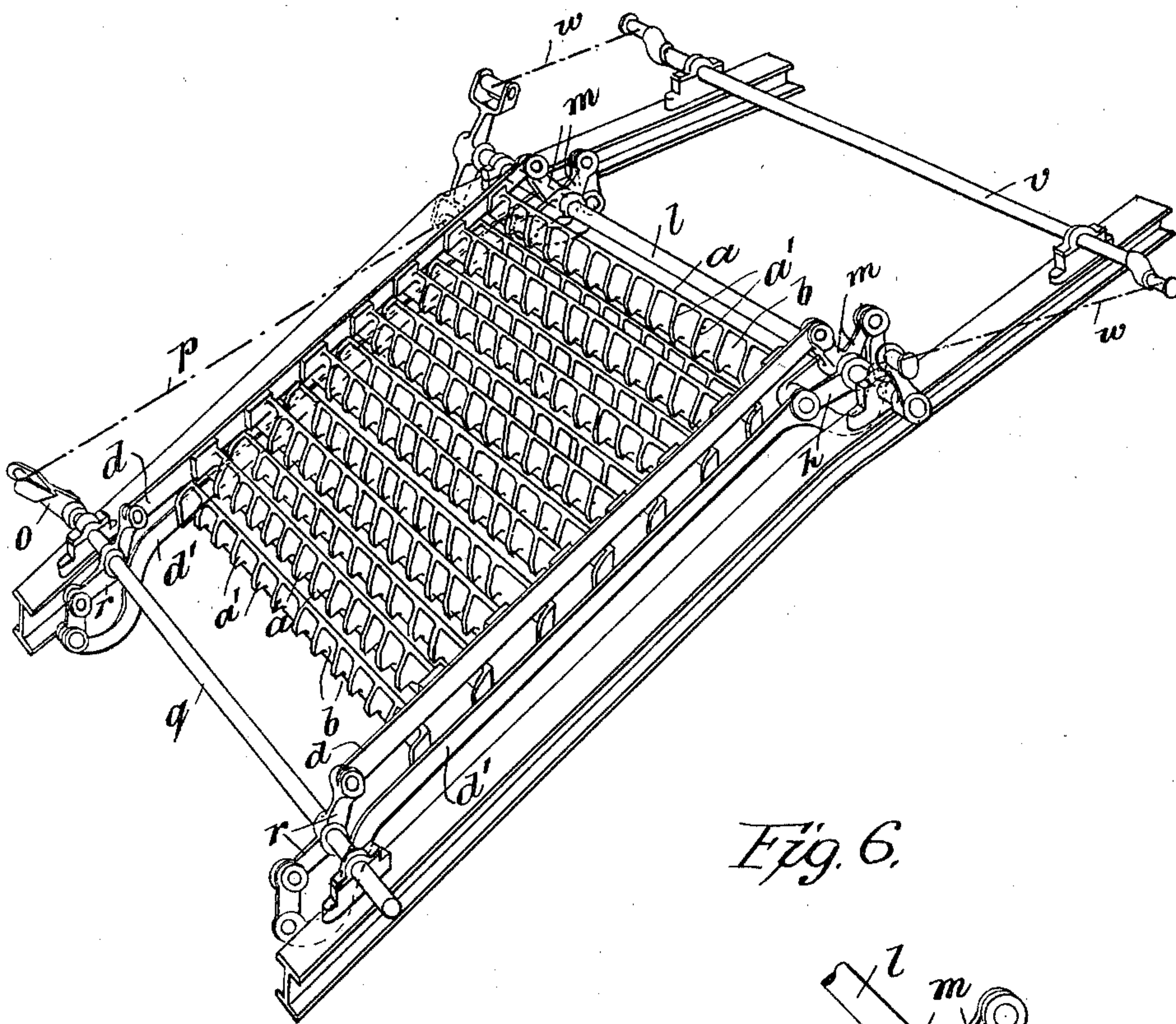
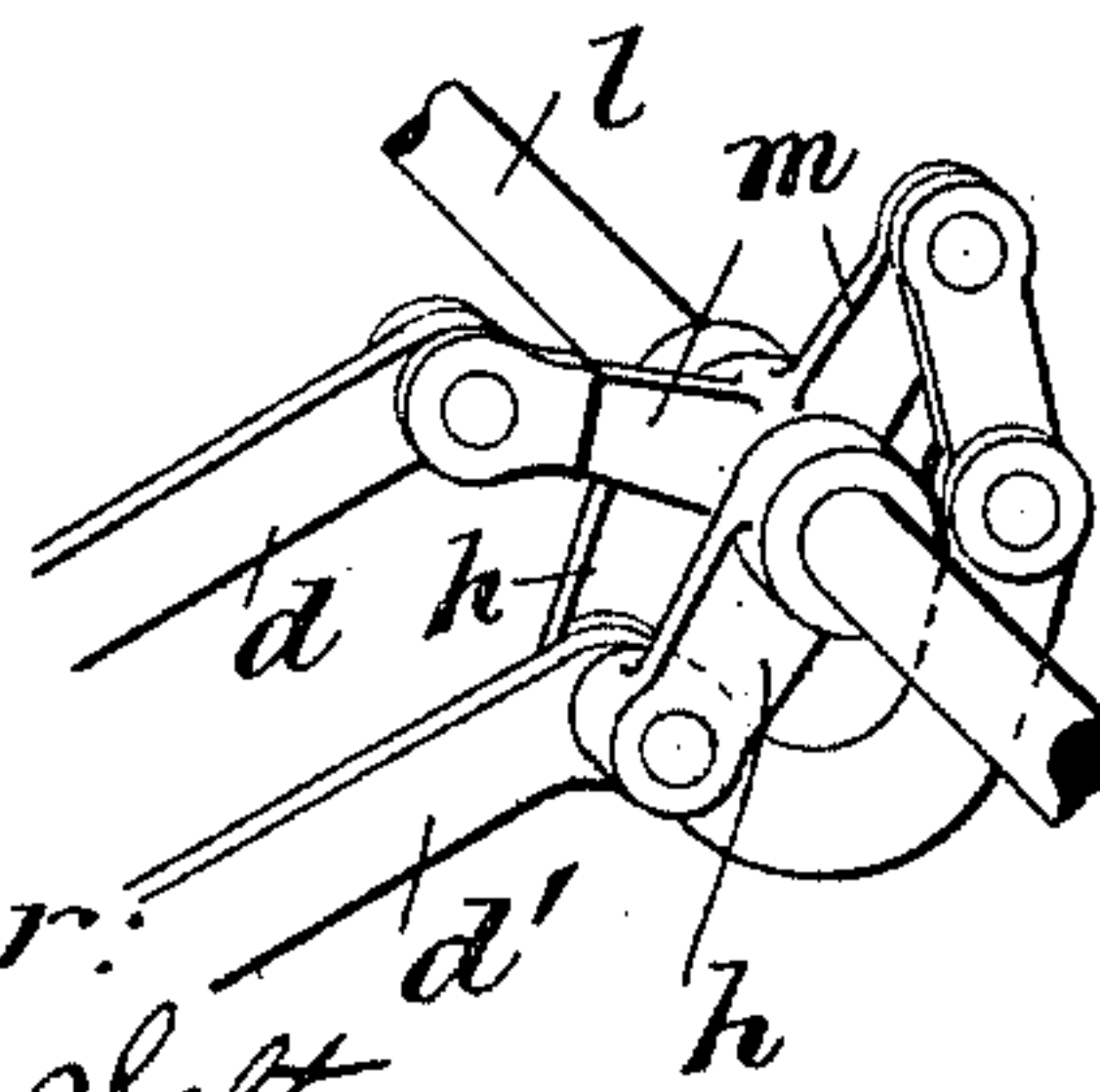


Fig. 6.



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2 Sheets—Sheet 2.

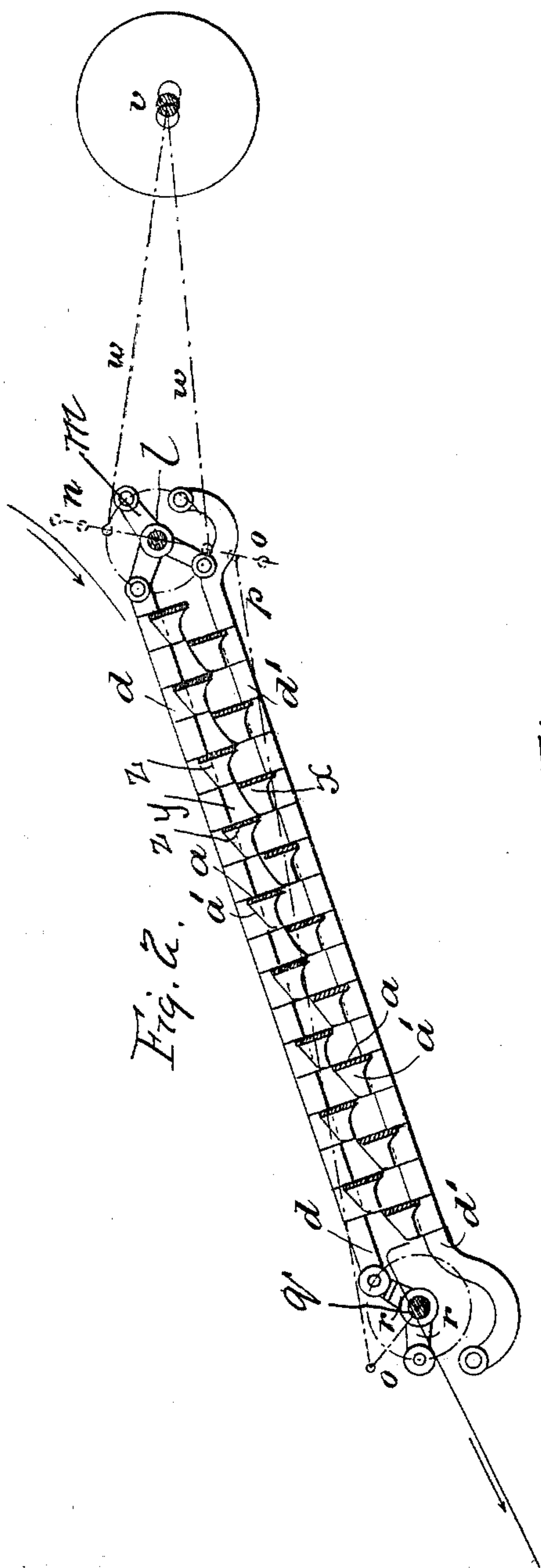
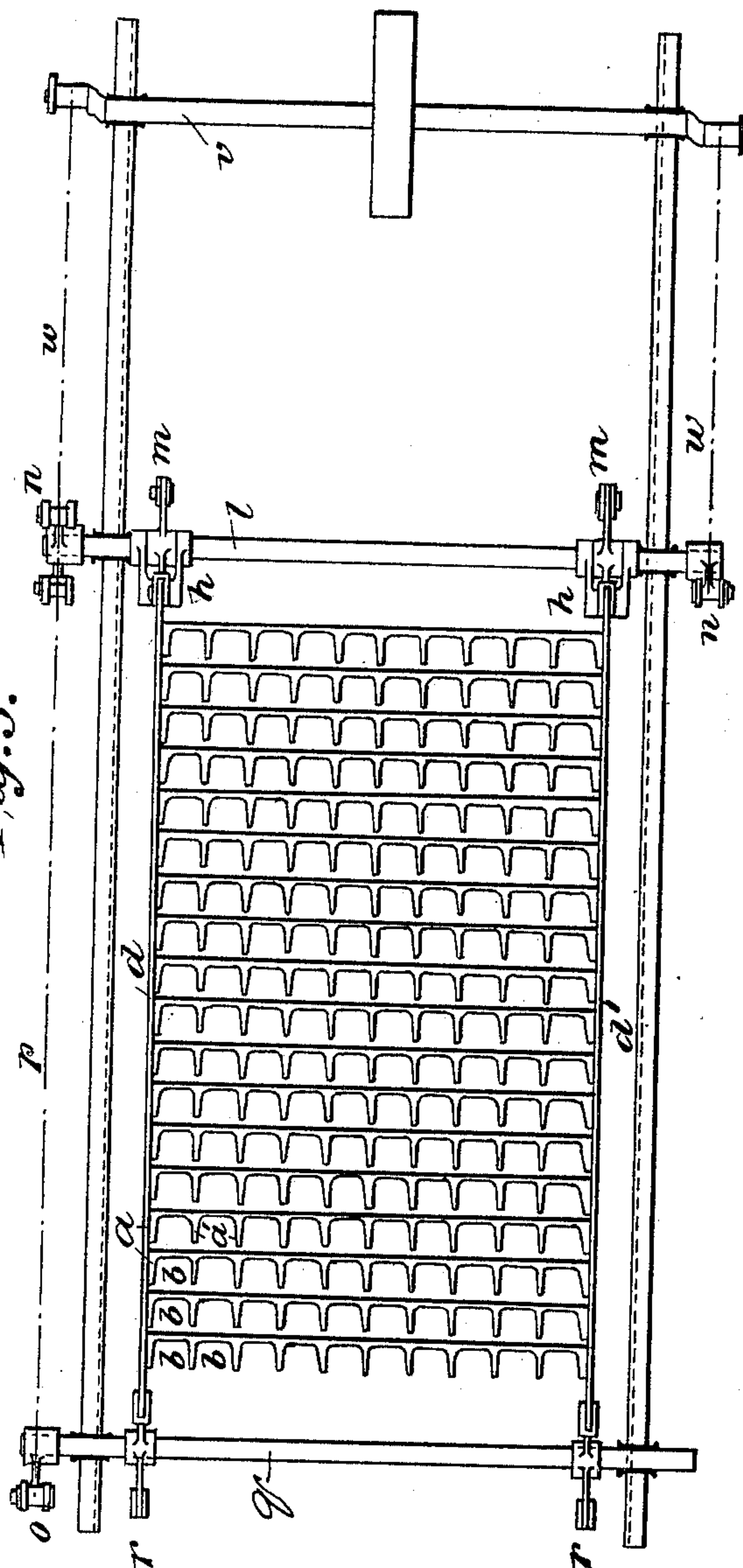


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILHELM SELTNER, OF SCHLAN, AUSTRIA-HUNGARY, ASSIGNOR TO
HERMANN KÜHNE, OF LONDON, ENGLAND.

SEPARATOR FOR GRANULAR OR LIKE MATERIALS.

SPECIFICATION forming part of Letters Patent No. 626,306, dated June 6, 1899.

Application filed December 28, 1897. Serial No. 663,949. (No model.)

To all whom it may concern:

Be it known that I, WILHELM SELTNER, engineer, residing at Schlan, Bohemia, in the Empire of Austria-Hungary, have invented certain new and useful Improvements in or Relating to Separators for Granular or Like Materials, (which invention has been patented in Austria, No. 46/3,788, dated September 28, 1896; in Germany, No. 92,063, dated September 11, 1896; in Belgium, No. 123,590, dated September 19, 1896, and in Great Britain, No. 20,160, dated September 11, 1896,) of which the following is a specification.

This invention relates to separators for granular or similar materials.

Apparatus constructed according to this invention is chiefly adapted to be used in the dressing of ore, coal, and similar substances and serves for separating small-sized pieces from larger pieces.

In the accompanying drawings, Figure 1 is a section of some of the bars forming the grating hereinafter referred to. Fig. 2 is a longitudinal section, and Fig. 3 a plan, of a complete separator; and Fig. 4, a view similar to Fig. 1, illustrating an alternative arrangement. Fig. 5 is a perspective view of the invention. Fig. 6 is a view of a detail.

With reference first to Figs. 1, 2, and 3 the apparatus comprises a series of transverse bars *a*, having inclined projections thereon in the form of vertical webs *a'*, between which are openings *b* of any desired shape and size, one set of alternate transverse bars comprising the first, third, fifth, &c., being secured to one pair of longitudinals *d d*, hereinafter termed the "frame *d*," and the other set of alternate bars (second, fourth, sixth, &c.) being secured to a second pair of longitudinal bars *d' d'*, hereinafter termed the "frame *d'*."

A motion is given to both frames such that the set of bars supported by one frame rises, while the set of bars secured to the other frame descends, and vice versa, so that the alternate ascent and descent to the bars provides transverse furrows or channels, into which smaller pieces of the material under treatment can fall. Over these bars producing by their up-and-down motion the furrows aforesaid the coarser material travels

and is discharged at the lower end of the apparatus, the finer pieces falling through the openings *b*. The travel of the material is effected by raising the material when one set of bars rises and as the other bars moving downward come to lie lower than the first ones the material falls down onto these next lower bars. This movement is repeated, the lower set of bars rising, while the higher set descends, so that the material raised again falls down to the bars next below, and so on. The alternating high and low positions of the sets of bars are shown in dotted lines in Fig. 1.

When the material treated contains very large pieces which rest simultaneously on three or more bars, special transport devices may be combined with this separator, which devices will help to move the large pieces along the grating constituted by the bars *a* and projections *a'*. Such a transport device is represented in Fig. 4. It may consist simply of cylindrical rotatable rods *s*, which are arranged over alternate bars *a*, which rods, being able to rotate, allow the larger pieces to move on. It is not necessary that both sets of bars, Fig. 4, should reciprocate vertically. One set, comprising the bars marked *t*, may be stationary. The second set, composed of bars *x*, then reciprocates vertically, the highest position of the latter being indicated by dotted lines, while its lowest position is represented in full lines.

The movement of the sets of bars can be effected in many different ways, a simple way being illustrated in Figs. 2, 3, 5, and 6, in which bell-crank levers *m*, keyed to a shaft *l* and supporting the upper ends of both frames, are rocked by means of one or more connecting-rods *w* from a crank or eccentric shaft *v*. In a similar manner a rocking movement is communicated to other bell-crank levers *r*, keyed on a shaft *q* at the other end of the grating by means of levers *o* and connecting-rods *p*, and these bell-crank levers *r* operate the lower ends of the frame. These bell-crank levers thus communicate to the frames, and therefore to the series of bars, the before-mentioned up-and-down motion.

In order to guide the ascending and descend-

ing sets of bars in the desired path relatively to each other, there may be provided on one of the shafts *l* loose guiding-levers *h*, which are connected to the frames *d'*. Thus the separator may consist of a series of bars *a*, with inclined projections or vertical webs, in which or between which are openings, the bars moving up and down in a curved or straight direction in such a manner that the rear wall *c* prevents the sliding down of material over the bars of the grating, the bars alternately rising and descending, and thus forming cavities in the direction of the discharge.

The frames, as shown in Fig. 2, are inclined, and it will be noticed that the bars at the position *x* form with their projections *a'* transverse furrows or channels *y* in conjunction with the upper bars at the positions *z z*.

Having thus described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

In combination, the two series of bars extending transversely of the machine and of the line of travel of the material being separated, the inclined projections on said bars extending laterally thereof to form pockets, means for raising and lowering the bars alternately so that one set of bars will be up while the other set is down, and the transporting-rods extending over the bars, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

WILHELM SELTNER.

Witnesses:

ADOLPH FISCHER,
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