

G. W. WELFELT.

GRAIN SIEVE.

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952,288.

Patented Mar. 15, 1910.

Fig. 1

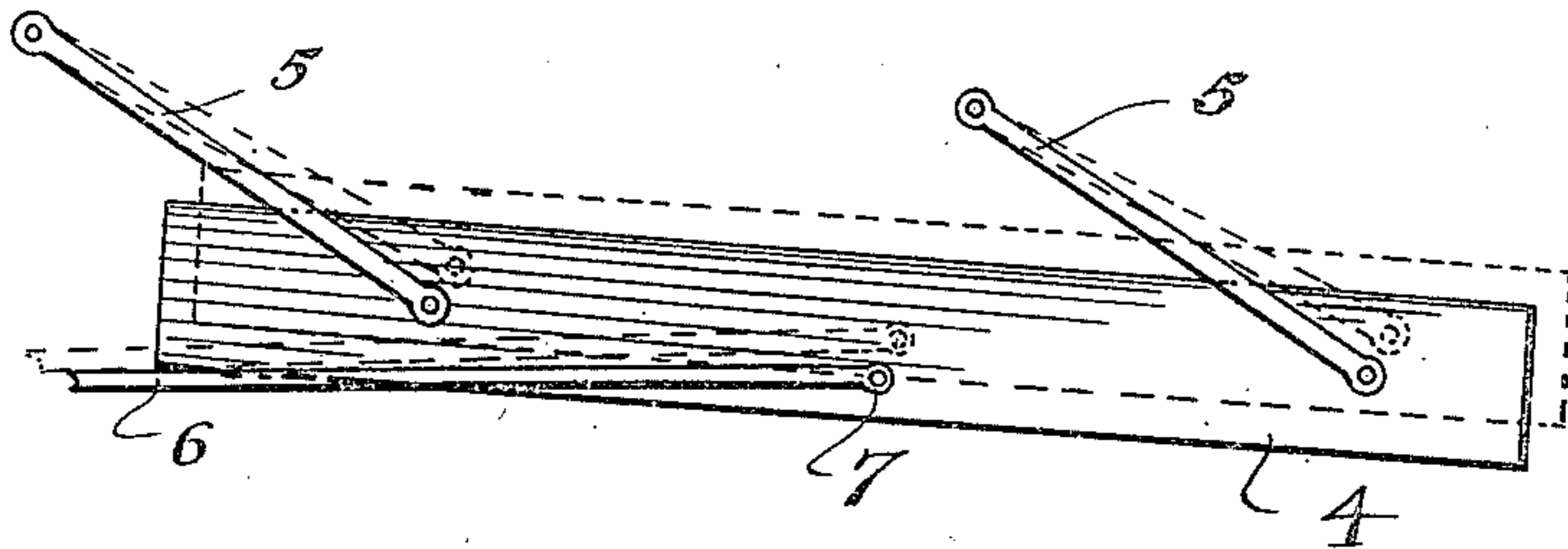


Fig. 2

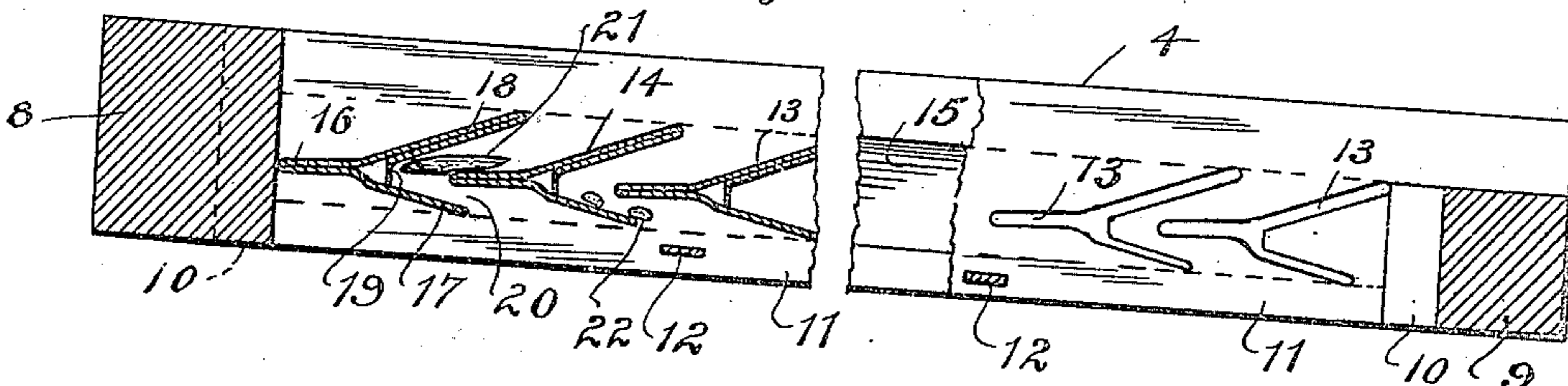
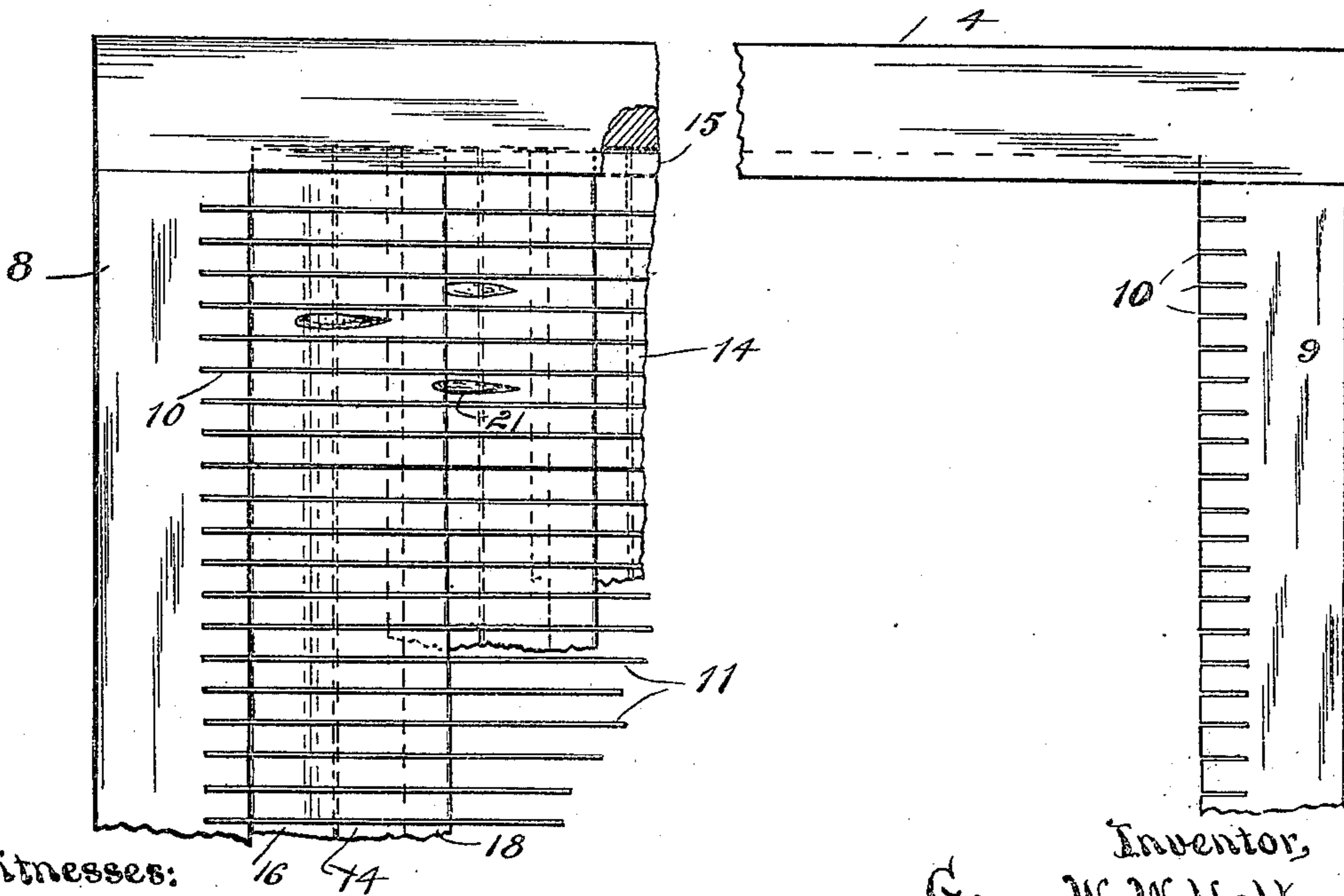


Fig. 3



Witnesses:

A. W. Fenstermaker
E. H. Lichtenberg

Inventor,
George W. Welfelt,
By Glenn S. Noble
Att'y.

UNITED STATES PATENT OFFICE.

GEORGE W. WELFELT, OF CHICAGO, ILLINOIS.

GRAIN-SIEVE.

952,288.

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Application filed July 6, 1908. Serial No. 442,172.

To all whom it may concern:

Be it known that I, GEORGE W. WELFELT, 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 Grain-Sieves, of which the following is a specification.

This invention relates more particularly to sieves for cleaning grain or separating one kind of grain from another, and its objects are to provide a sieve of this character which will be more effective in operation than those heretofore in use and also to improve the construction of such devices. I attain these objects and such other advantages as will appear hereinafter from the device shown in the accompanying drawings, in which—

Figure 1 is a side elevation showing the general arrangement of my device for operation; Fig. 2 is a partial longitudinal section, with some of the separating plates omitted at the right-hand side; and Fig. 3 is a top plan view of the device shown in Fig. 2.

As shown in these drawings, 4 represents in general any suitable riddle or sieve frame which I prefer to have mounted by means of arms 5—5 lying in a somewhat oblique direction, and operated by means of a pitman or shaker rod 6 attached to the frame at 7, so that when the frame is reciprocated it will also be given an upward movement, as indicated by the dotted lines in Fig. 1. The frame 4 is pitched slightly downward in the direction in which the grain passes over the same, the degree of pitch being preferably comparatively slight, substantially as shown in Figs. 1 and 2. The end bars 8 and 9 of the frame 4 are provided on the inner edges with grooves or saw cuts 10—10 to receive the ends of longitudinal bars 11. These bars fit tightly in the grooves 10, so that ordinarily no other means of holding them is necessary; but in order to stiffen the sieve, I provide cross-rods or bars 12 which pass through holes in the lower sides of the bars or plates 11. Each of the bars 11 is provided with a series of forked or Y-shaped holes 13 to receive the somewhat similarly shaped separating strips or blades 14 which extend laterally across the sieve and have their ends engaging with grooves 15 in the inner sides of the side bars of the frame 4. It is the peculiar form and arrangement of these separating blades that constitutes the

main feature of this invention. Each of these blades consists of a strip of suitable metal, such as zinc or the like, which is folded to form a stem portion 16 with a forwardly and downwardly projecting lip 17 and a forwardly and upwardly projecting lip 18. The metal is folded back on the lip 18 to a point adjacent to the forward end of the stem 16 and is there bent down so that the edge comes in contact with the lower lip 17 and a shoulder is formed at 19 by the downwardly turned edge of the metal strip. These separating blades or strips are arranged so that the short under-lip of one strip is slightly below the end of the stem of the succeeding strip, while the long upwardly projecting lip 18 extends above and forward to a point about opposite the forward end of the stem of the succeeding strip, substantially as indicated in Fig. 2. When the sieve is given the desired pitch for its operative position, the stem pieces 16 will lie in a substantially horizontal position and form, with the forwardly projecting lips 18, somewhat long cells between the longitudinal strips or plates 11, while there is a short, free opening between the rear end of the stem 16 and the preceding lower lip 17, such as indicated at 20.

A particular use for this invention is the separating of oats from other grain, such, for instance, as wheat, having differently shaped kernels. The operation of the sieve or screen, when used for this purpose, will be readily understood from the drawings, in which 21 represents grains of oats which, being of considerable length, are held in longitudinal alinement in the sieve by means of the plates 11. When these grains or kernels pass down below the upwardly extending lips 18, they will lie on the horizontal stem portions 16, with the backward ends of the kernels in engagement with the shoulders 19. When in this position, the long forwardly projecting end of the lip 18 will prevent the kernels from turning upward so as to assume a vertical position and will thereby hold the kernels in suitable position so that they will be readily discharged from their position in such cells. The sieve being given a forward and upward movement, will cause these kernels to be thrown forwardly and upwardly so that they will be raised off from the horizontal stem and projected forwardly so that when the sieve again moves down and back such kernels

will slide ahead over one or more of the separating blades 14 until finally they are discharged over the front of the sieve. Any kernels of small grain, such as wheat, as indicated at 22, will pass readily down through the openings 20 to be discharged underneath the sieve. It will be noted that the stem 16 of the first strip or blade 14 lies against the end piece 8 of the frame 4 to prevent any grain from passing down through this portion of the sieve, while the forwardly and upwardly projecting lip of the last cross-piece 14 registers with the top of the end piece 9, so that the grain passing over these strips will be readily discharged from the sieve.

I am aware that heretofore patents have been issued for sieves of the same general character as that set forth in this invention, such, for instance, as the patents to Rowell No. 452,065, May 12, 1891, and Emerson No. 861,446, July 30, 1907, and therefore I do not herein claim a separating sieve, broadly; but I consider the present device as being an improvement over the devices shown in said patents, and

What I claim and desire to secure by Letters Patent is:

1. In a grain sieve, the combination of a series of separating plates, each of said plates comprising a stem portion with a short forwardly and downwardly projecting lip and a long forwardly and upwardly projecting lip, said plates being arranged so that the stem portion of one plate projects into the space formed between the diverging lips of the preceding plate.

2. In a grain sieve, the combination of a series of separating blades, each of said

blades having a stem portion and diverging projections, the upper projections being longer than the lower projections, said blades being arranged so that the stem of one blade extends into the opening formed between said projections of the preceding blade.

3. A separating blade for a grain sieve, comprising a strip of metal folded to form a stem portion, one edge of said strip being bent outwardly to form one lip, the other edge of said strip being bent outwardly and folded back and then bent downwardly to engage with the first-named edge, thereby forming a substantially Y-shaped member with one branch longer than the other and with a shoulder in the fork thereof.

4. In a grain sieve, the combination of a frame having slotted end pieces, a series of plates engaging with said slots and having holes therethrough, a series of separating blades arranged crosswise in said sieve and passing through said holes, the ends of said blades engaging with grooves in the side pieces of said frame, each of said blades comprising a stem portion with diverging forward projections and a shoulder adjacent to the point of divergence of said projections, the stem of each blade projecting into the space formed between the diverging projections of the preceding blade whereby long kernels of grain will be prevented from passing through the sieve while small kernels of grain or other material may pass therethrough.

GEORGE W. WELFELT.

Witnesses:

E. H. LICHTENBERG,
A. H. FENSTEMAKER.