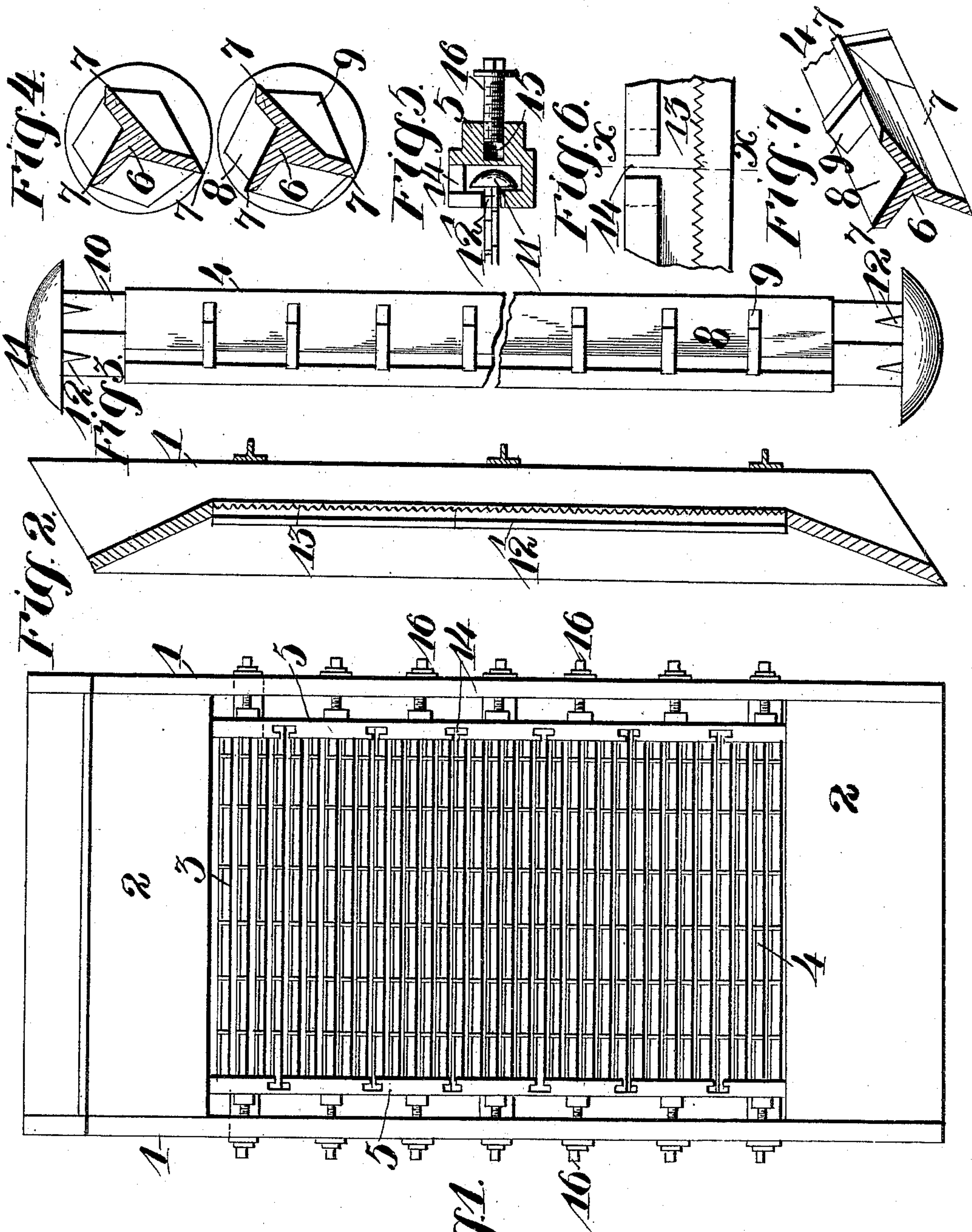


(No Model.)

E. WITTMANN.  
SIEVE OR SIFTER.

No. 464,841.

Patented Dec. 8, 1891.



WITNESSES  
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Fig. 1.

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# UNITED STATES PATENT OFFICE.

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## SIEVE OR SIFTER.

SPECIFICATION forming part of Letters Patent No. 464,841, dated December 8, 1891.

Application filed May 20, 1891. Serial No. 393,419. (No model.)

*To all whom it may concern:*

Be it known that I, ERNST WITTMANN, of the city of St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Sieves or Sifters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in sieves or sifters for sifting sand and other like purposes; and it consists in the novel arrangement and combination of parts, as will be more fully hereinafter described, and designated in the claims.

In the drawings, Figure 1 is a top plan view of my complete invention. Fig. 2 is a longitudinal section of the supporting frame-work with the inner mechanism removed. Fig. 3 is a top plan view of a bar which I employ in carrying out my invention. Fig. 4 is a transverse section of two of the bars enlarged, showing the relative position of said bars when in use. Fig. 5 is a cross-section taken on the line *xx* of Fig. 6. Fig. 6 is a side elevation of one of the supporting-pieces for the bars, with parts broken away, showing the same provided with an opening for removing the bars, and also the teeth to prevent the same from slipping when in use. Fig. 7 is a perspective view of one of the bars which effects the sifting of the sand, with parts broken away.

The object of my invention is to construct a sieve or sifter for sifting sand, for separating different sizes of shot, and other like purposes; and it consists in the employment of metallic bars to effect said result in place of using netted wire, as has been the usual construction of sieves heretofore constructed. By the construction of bars which effect the sifting, as will be more fully hereinafter described, I can separate and so regulate the sieve that I can remove any size of foreign substances that may be disintegrated in the sand.

My invention is also equally adapted to sieve or sift grain.

Having given a general outline of the object of my invention, I will now proceed to describe in detail its mechanical parts and substantially the manner in which they are put together to accomplish the desired result.

Referring to the drawings, 1 indicates the

side bars of the frame-work of my invention, which may be of any construction, but preferably as shown in the drawings, and 2 the end pieces of the frame-work, which are of the ordinary construction. It may be premised in this connection that the normal position of the frame-work, and consequently the sieve located therein, is at a general incline, and for this reason the side bars 1 are provided with beveled or inclined ends, as can be readily perceived by referring to Fig. 2. The essential feature of my invention, however, is in the construction of the sieve, and does not relate to the supporting frame-work.

3 indicates the sieve itself, which consists of a series of bars 4, of the construction as will be more specifically hereinafter described, the ends of the same being mounted in bars 5, as will be also more specifically hereinafter described.

The bars 4, when properly located in bars 5, effect the sifting or sieving of the desired material or substance. The said bars 4 consist of a triangular core 6, the same being provided or surmounted at each corner or angle thereof with wings or flanges 7, of the construction as shown in Figs. 4 and 7. The wings or flanges 7 are of different heights, or, in other words, some project farther than others from the core 6, but embody substantially the same form and function. It may be premised in this connection that by means of the different heights of the wings or flanges 7 spaces of different degrees are formed.

It can be readily perceived by inspecting Figs. 4 and 7 that by the angles or triangles of the core 6 being provided with wings or flanges 7 valleys or troughs 9 are formed of different forms and dimensions. The valleys or troughs 8 are partitioned off at regular or predetermined intervals by means of blocks or projections 9, the same being of different forms and sizes, but embodying substantially the same function. It may be observed in this connection that one of the troughs 8 is partitioned or divided off at regular intervals by means of blocks or projections 9 of the same form and size, and each of the remaining troughs is divided off, also, at regular intervals by means of said blocks, but at different distances from each other; or, in other words, each of the troughs 8 are differently divided by means of different blocks or pro-



jections to the others. The blocks or projections 9 retard and hold back the foreign substances—such as gravel or large stone—when sifting sand, while the sand itself is permitted to fall down in the troughs 8, thence through the spaces between the bars 4, and ultimately pass out into the sifted products of sand.

By changing the relative positions of the bars 4 different sizes of foreign substances may be removed from the sand or the product or material to be sifted.

In order that the invention may be clearly understood in regard to regulating the bars in order that the sand may be properly sifted and foreign substances removed therefrom, it will be well to state by moving the said bars to and from each other within the supporting-frame only the desired quality of sand is permitted to pass through the spaces between each of the bars 4. It may be well to state in this connection that the blocks or projections 9 serve to prevent only the stone and foreign substances from passing through the spaces between the bars when the sand is being sifted. The triangular cores 6 terminate at both ends in angular portions 10, the same being surmounted with knobs 11. The angular portions 10 are of such shape as to move freely in the elongated groove 12', formed in bars 5. It will be seen that when the bars 4 are in their proper position and the whole device set up the heads 11 will be entirely incased by the bar 5. The knobs 11 are provided on their inner surfaces with teeth 12, the same being situated or located opposite to each other, as better shown in Fig. 3. Said teeth 12 are adapted to engage with teeth 13, formed in bar 5, it being premised in this connection that said bars are provided with a series of teeth, such as 13. The engagement between the teeth 12 and 13 will permit the bars 4 from sliding and rotating after the said bars have been adjusted and ready for use.

Bars 5, in which bars 4 are mounted, are provided at certain or predetermined intervals with openings 14, which communicate with grooves 12', through which the knobs 11 of the bars 4 may pass or the said bars be removed; or, in other words, bars 4 may be removed intermediately to the length of bars 5, as better shown in Figs. 1, 5, and 6. Bars 5 are provided with screw-threaded bores 15, into which screw-threaded bolts 16 are adapted to be inserted. Said bolts 16 pass through suitable perforations formed in bars 1 and are then screwed into bores 15. By screwing in said bolts it can be readily perceived that bars 5 will be drawn toward bars 1, and consequently bars 4 will be held in a rigid position in their suitable bearings.

It may be observed that flanges 7 may be cast integrally with core 6 or secured to the same, and it may be further observed that the blocks or projections 9 may be cast integrally with or secured to said wings or flanges 7.

In order to fully comprehend the invention, it will be well to remember that the only function assigned to the blocks 9 is to prevent stone from passing down and coming in contact with the edges of the wings 7, thereby choking up the spaces between the bars.

Having fully described my invention, what I claim is—

1. In a sieve or sifter for sand or other like materials, a bar 4, consisting of an angular core, such as 6, wings or flanges 7, formed on the same, and blocks or projections 9, cast integrally with or secured to said flanges, substantially as set forth.

2. In a sieve or sifter for sand or other like materials, a bar 4, consisting of a triangular core, such as 6, wings or flanges 7, cast integrally with or secured to said core, and blocks or projections 9, cast integrally with or secured to said flanges, substantially as set forth.

3. In a sieve or sifter for sand or other like materials, a bar 4, consisting of a triangular core, such as 6, wings or flanges 7, of different heights, cast integrally with or secured to said core, and blocks or projections 9, cast integrally with or secured to said wings or flanges, substantially as set forth.

4. In a sieve or sifter for sand or other like materials, a bar 4, consisting of a triangular core, such as 6, wings or flanges 7, of different heights, cast integrally with or secured to said core, and blocks or projections 9, of different forms and sizes, cast integrally with or secured to said wings or flanges, substantially as set forth.

5. In a sieve or sifter for sand or other like materials, a bar 4, consisting of a triangular core, such as 6, the ends thereof terminating in angular portions 10, surmounted or provided with knobs 11, teeth 12, formed on said knobs, wings or flanges 7, of different heights, cast integrally with or secured to said core, and blocks or projections 9, of different forms and sizes, cast integrally with or secured to said wings or flanges, substantially as set forth.

6. In a sieve or sifter for sand or other like materials, a bar 4, of the character described, bars 5, provided with elongated grooves or slots 12', teeth 13, and with openings 14 for supporting said bar or bars 4, substantially as set forth.

7. A sieve or sifter for sand or other like materials, consisting of bars 1, screw-threaded bolt 16, carried by said bars, bars 4, of the character described, and bars 5, of the character described, for supporting said bars 4, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ERNST WITTMANN.

Witnesses:

ED. E. LONGAN,  
JNO. C. HIGDON.