

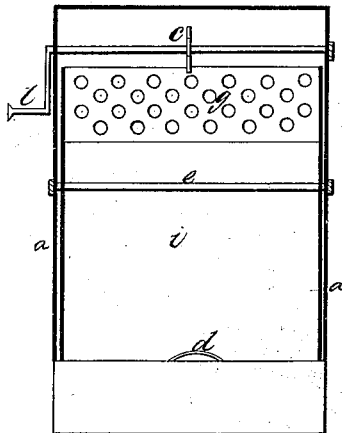
*Payne & Woodruff,*

*Coal Screen.*

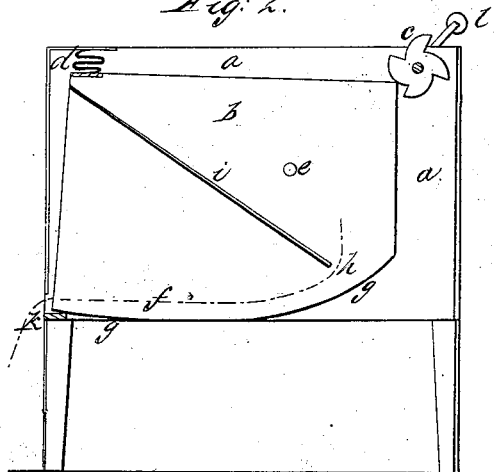
*N<sup>o</sup> 2,058.*

*Patented Apr. 19, 1841.*

*Fig. 1.*



*Fig. 2.*



*Witnesses:*

*Chas. Freeman  
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*Inventor:*

*E. S. Payne  
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# UNITED STATES PATENT OFFICE.

ELISHA D. PAYNE AND ENOS WOODRUFF, OF NEWARK, NEW JERSEY.

MACHINE OR SCREEN FOR SIFTING COAL, GRAIN, &c.

Specification of Letters Patent No. 2,058, dated April 19, 1841.

*To all whom it may concern:*

Be it known that we, ELISHA D. PAYNE and ENOS WOODRUFF, of Newark, in the county of Essex and State of New Jersey, have invented a new and useful machine for the purpose of sifting all materials that are to be sifted, which plan may be used in the construction of common screens, whether single, double, or multiplied, a single screen being used to separate any material to be sifted into two parts, a double screen into three parts, and a multiplied screen into four or more parts.

We propose to make screens for grain, flour, meal, coal, sand, &c., on our plan.

Our improvement consists in a new method of hanging the sifting box by means of two gudgeons or by a single rod or axle, and providing a guide board in the sifting box to guide the material to be sifted on to the head of the screen. We give to the screen a peculiar shape which forms the under part of the sifting box and incline it from its head to its delivery end to suit the nature of the material sifted. The axle or gudgeons we place about one third of the way from the head of the sifting box to the tail or delivery end, and we agitate the sifting box by raising or depressing the one end by means of a cam-toothed wheel with a spring at the other end to return the motion against the tooth wheel so that it is vibrated vertically like a tilt hammer.

We do hereby declare that the following is a full and exact description of the construction and operation of our improvement, reference being had to the annexed drawings making a part of this specification.

Figure 1 is a plan. Fig. 2 is a section.

We first make a box or frame to hang the sifter box in which is seen at *a, a*. We next make a sifter box seen at *b*, which we provide with a guide board seen at *i*, which with the head board of the sifter box and the head end of the screen seen at *g, g*, forms the throat way of the sifter box seen at *h*. At *f*, is seen the course of the sifted material through the throatway and along the upper surface of the screen or sieve to where it passes off at the delivery end of the screen. See the dotted line. The gudgeons or axle by which the sifter box is hung in the frame are seen at *e*, and placed about one third of the distance from the head end of

the screen to the tail end of it. At *l*, is seen the crank and shaft and at *c*, is seen the cam-toothed wheel attached to the shaft. The shaft is attached to the frame or case *a, a*, by means of caps. This cam-toothed wheel may be either made to work on the upper or under edge of the sifting box and at either end of it. We commonly make it work on the upper edge of the head end of the sifting box and place the spring seen at *d*, on the other end to react against the tooth wheel and against the beater bar seen at *k*, the bar being attached to the frame *a, a*, under the delivery end of the sifting box for the delivery end of the sifter box to rock on.

It is obvious that from the different qualities and nature of the various materials that require to be sifted that different machines have to be variously modified to suit each kind; still our plan of forming the sifting box and of hanging and agitating it may be applied for all purposes of sifting or screening. We in some cases make a screen coarse at the head fine in the middle and finer at the tail end to separate the sifted material into a number of qualities. In other cases we place one riddle over another in the same sifting box, the upper one coarse and the under one fine and so on using any number that may be required in the same sifting box.

Operation: The material to be sifted being put into the sifting box, by turning the crank in the right direction to press the convex sides of the cam-toothed wheel on the edge of the sifter box, the sifter box is made to vibrate vertically like a trip hammer. The spring reacting against the teeth of the wheel and the beater bar produces an effective operation. The coarser part of the material being screened glides off at the delivery end of the sifting box, the finer dropping through the sieve into the box provided to receive it underneath.

What we claim and for which we ask Letters Patent is—

1. Combining the inclined guide board with a box or case for receiving the material to be sifted, constructed as described, said box consisting of side and end pieces and an inclined bottom pierced with apertures for sifting the coal or other materials, the whole being arranged as herein set forth.

2. Also in combination with the sifting box thus constructed, an exterior case for containing the same.

3. Lastly in combination with the sifter box and external case the method of suspending and operating the shoe by means of the axle *e*, the spring *d*, and the wheel *c*,

the whole being constructed and operating in the manner herein set forth.

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ENOS WOODRUFF. [L. S.]

Witnesses:

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