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HOUSING GUARD AND ABRASIVE STREAM CONTROL UNIT
FOR ROTATABLE ABRASIVE THROWING ASSEMBLIES
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Fig. 1.

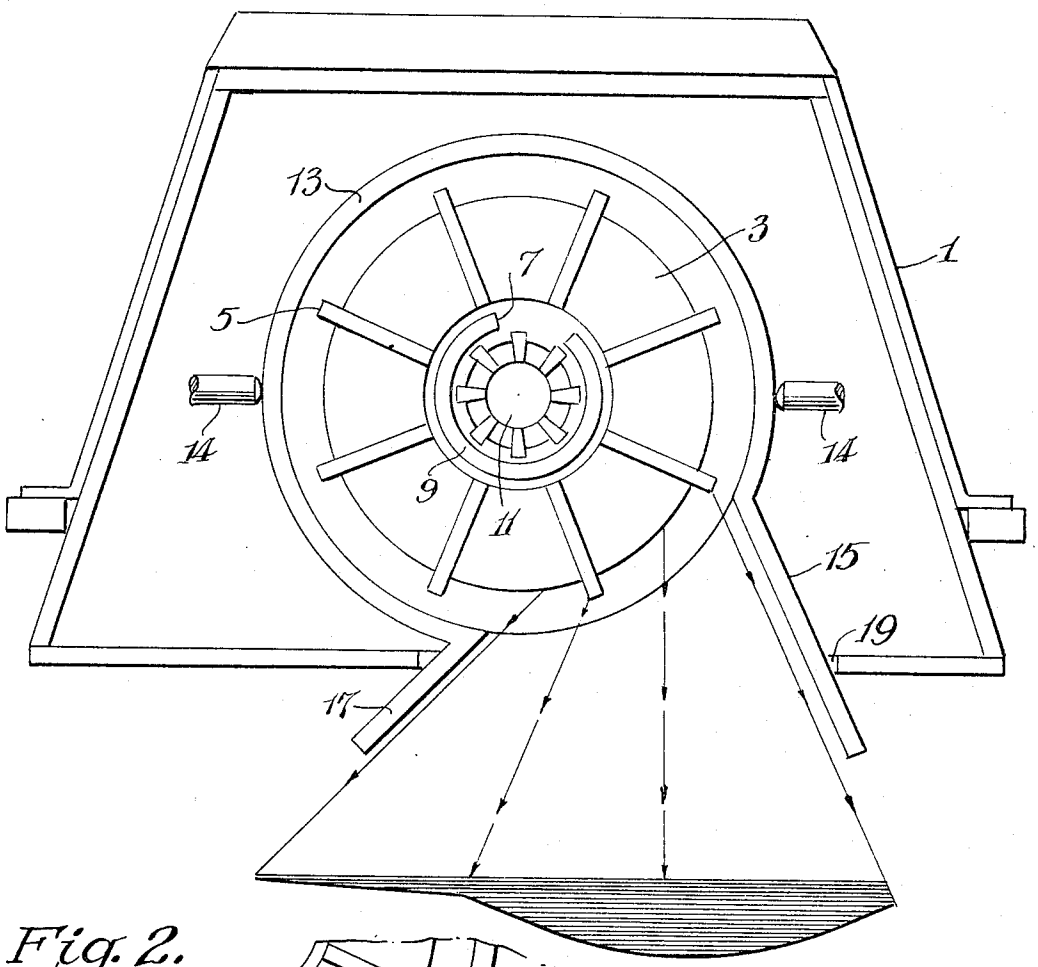
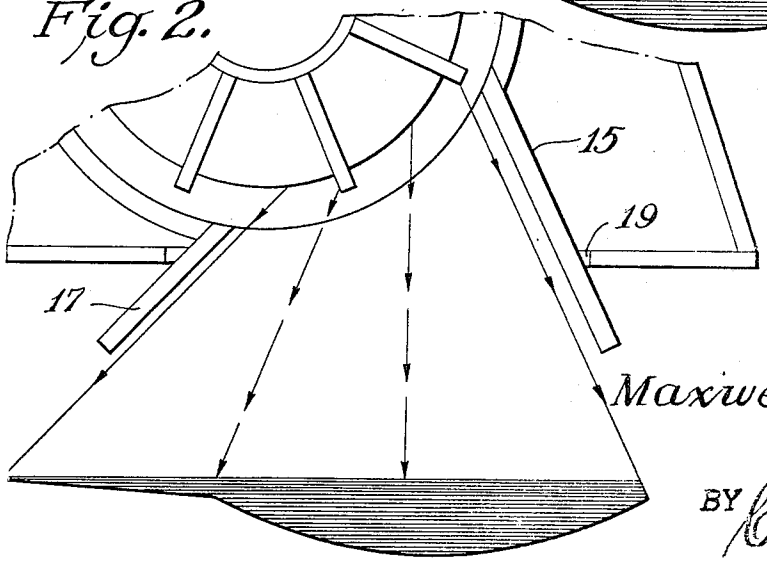


Fig. 2.



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HOUSING GUARD AND ABRASIVE STREAM CONTROL UNIT FOR ROTATABLE ABRASIVE THROWING ASSEMBLIES

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3 Claims. (Cl. 51—9)

The present invention relates to a housing guard which is positioned around an abrasive blasting wheel assembly supported within a housing, which guard also controls the width of the abrasive stream as it is discharged from the blasting wheel assembly and the surrounding housing.

In many instances it is important that the length of the emitted abrasive stream be limited to certain lengths for exact coverage. For instance, in some cases only a portion of a work article will be blasted for one reason or another.

In the past, the type of blast stream control disclosed herein has not been possible since the materials from which the housing and other components of the rotatable blast wheel assembly were made were not very resistant to erosion from both direct and ricocheted blast of the abrasive being emitted at great speeds by the rotatable blast wheel assembly. In other words, the metals used could not be made sufficiently hard to resist erosion caused by abrasive action.

It is therefore one object of the present invention to provide a new and novel abrasive blasting assembly of the rotatable wheel type wherein the abrasive stream emitted from the blast wheel can be exactly controlled according to its length.

Another object of the present invention is to provide a novel and improved rotatable blast wheel assembly wherein the lengthwise spread or path of the abrasive being emitted from the blasting wheel assembly is controlled by a suitable guard or wear plate which extends substantially around the wheel.

Other objects and advantages of the invention will become more apparent from a study of the following description and drawing wherein:

FIGURE 1 is a side view of the rotatable blast wheel assembly with the side plate of the housing removed to show the inner workings of the assembly; and

FIGURE 2 is a fragmentary view of a modified form of this invention.

Referring now to the drawing, there is shown an overall housing **1** which supports or houses a rotatable abrasive blast wheel **3** which carries radially-extending vanes **5** which propel abrasive media. The media is received by the blades or vanes **5** through an opening **7** in cage **9** to which abrasive media is supplied by a rotatable impeller **11**. The impeller **11** receives the media from a feed spout member supported adjacent a side wall of the housing **1** and extending therethrough to connect with impeller **11**. The wheel **3** and impeller **11** are driven from the same shaft by an electric motor or other impeller source, not shown.

Encircling the rotatable wheel assembly is a circular guard or wear unit **13** supported by movable guard positioning and supporting shafts **14**, which also extend through the end walls of the housing **1**. The guard **13** extends substantially around the wheel **3** and is open at the bottom thereof as shown in the drawing. From the free ends of the circular guard, abrasive limiting legs **15** and **17** extend downwardly at angles. The depending guide baffles or legs **15** and **17** extend downwardly through an opening **19** in the main housing **1**.

With the above arrangement the only escape for the abrasive particles picked up and propelled by the wheel **3** from the housing is through the area defined by the inner surfaces of the legs **15** and **17** extending through housing opening **19**. With this arrangement the lengthwise pattern of the abrasive stream or blast emitted from the vanes **5** of the wheel **3** is accurately and positively controlled. The length of the blast pattern can be changed or varied merely by changing the angles at which the legs **15** and **17** depend from the ends of circular guard or housing **13** extending around the wheel **3**.

The legs **15** and **17** can either be integral with the housing or separate attached legs as shown in FIGURE 2.

The circular guard **13** including legs **15** and **17** are formed preferably of a steel alloy metal including the following weight percentage composition:

Carbon	3.15 to 3.35.
Manganese	.60 to .90.
Silicon	.40 to .60.
Chrome	16.00 to 18.00.
Molybdenum	3.00 to 3.50.
Phosphorus	.05 max.

Of course other metals having the degree of hardness and resistance to abrasive media as that described above may also be used.

Obviously many modifications and variations of the present invention are possible in the light of the above reachings. It is, therefore, to be understood that within the scope of the appended claims the invention may be practiced otherwise than as specifically described.

What is claimed is:

1. A rotatable abrasive blasting wheel assembly comprising a rotatable wheel, abrasive propelling vanes mounted on one face of said wheel and extending radially thereof, means supported by the wheel for providing supply abrasive media to the vanes, a cylindrical guard housing encircling the rotatable wheel over an arc substantially greater than a semicircle and having an opening through which abrasive is propelled by the wheel, legs extending outwardly from each side of the opening in said guard housing, a main housing enclosing the guard housing, said main housing having a bottom, an opening in said bottom of said main housing, said legs being divergent and extending through said opening in said bottom of said main housing and being positioned so as to limit the size of the pattern of abrasive media propelled by said vanes, and each of said legs being at an angle substantially less than 180° to a tangent to the cylindrical guard housing at the juncture of each leg and the guard housing.

2. The assembly of claim **1** wherein the legs of the guard housing are an inherent part of the guard housing.

3. The assembly of claim **1** wherein the legs are separate and connected to the guard housing.

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