

Sept. 8, 1931.

C. G. A. SCHMIDT, JR

1,822,507

VIBRATING SCREEN

Filed Sept. 21, 1929

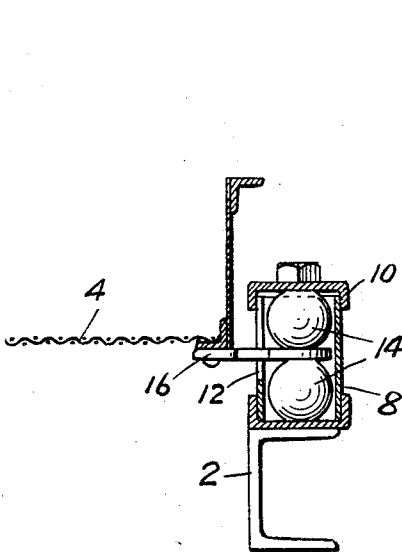


FIG. 1.

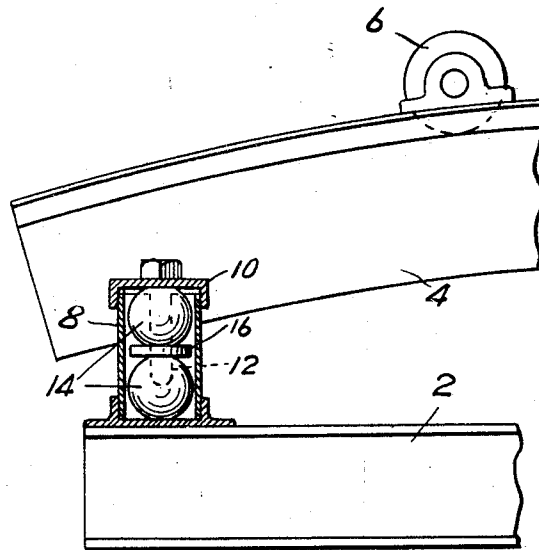


FIG. 2.

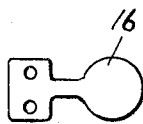


FIG. 3.

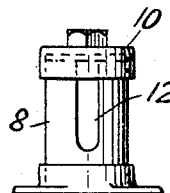


FIG. 4.

WITNESS:

Robert R. Mitchell

INVENTOR

Carl G. A. Schmidt, Jr.

BY

Bussan & Harding
ATTORNEYS.

UNITED STATES PATENT OFFICE

CARL G. A. SCHMIDT, JR., OF KENNETT SQUARE, PENNSYLVANIA, ASSIGNOR TO
AMERICAN ROAD MACHINERY COMPANY, OF KENNETT SQUARE, PENNSYLVANIA, A
CORPORATION OF DELAWARE

VIBRATING SCREEN

Application filed September 21, 1929. Serial No. 394,168.

This invention relates to a vibrating screen adapted for the classification of powdered or granular material and more particularly to a supporting means for such vibrating screen.

Vibrating screens of the type described generally mount rotating shafts having eccentric weights or the like arranged for imparting vibratory movement to the screen. Such screens are supported in general by some resilient means such as springs adapted to permit the vibratory movement and absorb recoil. It is found, however, that when springs are so used, there is an absence of jolting action and, while the frequency of vibration is of the order of 1800 times per minute, or the like, it is found that there is considerable trouble in getting fine material through a screen cloth. Furthermore, even this relatively low period of vibration causes crystallization in the metallic supports or springs, whereby failure by fractures occurs.

It is accordingly the object of the present invention to provide supporting means for a screen of this character whereby a jolting action is effected without, however, the disadvantage of crystallization in the supporting means.

In the drawings:

Fig. 1 is a fragmentary transverse sectional view of the screen and the supporting means.

Fig. 2 is a fragmentary side elevation partly in section showing the supporting means.

Fig. 3 is a detail showing a pad or arm supporting the screen.

Fig. 4 shows a casing or housing embodied in the supporting means.

The support for the screen is conventionally indicated at 2 as including a channel beam, although it will be understood that any suitable support, such as a floor of a building, or the like, may constitute the non-vibrating supporting means for the screen. The screen is indicated at 4 and consists of a frame having a wire mesh or cloth bottom, depending on the size of the particles being sieved. As conventionally indicated in Fig.

2, there is mounted on the screen an eccentric vibrating device 6. While this type of device is disclosed, it will be clear that any equivalent vibrating means may be used.

An upright cylindrical casing 8 is mounted on the support 2 and is provided with a cap 10, preferably threaded on the upper end thereof. The casing is provided with an upwardly extending slot 12. Within the casing are arranged a plurality of rubber balls 14 between which extends a pad or arm 16 carried by the screen, this arm extending through slot 12. As shown in Fig. 2, the combined vertical extent of the two balls 14 and the pad 16 is such as to project the upper ball beyond the top of the casing. By this arrangement, adjustment of cap 10 serves to increase or decrease the normal tension on the balls, thereby regulating both amplitude and period of the vibrations of the screen. As the screen is vibrated by means 6 at, say, 1800 times a minute, the vibratory motion is imparted to the rubber balls. By reason of the tension on these balls, each impact imparted thereto will produce a violent and extremely rapid up and down movement of pad 16 which movement will in turn be imparted to the screen. The result is a violent jolting action which serves very effectively to produce proper screening of the finest material.

While rubber balls have been specified as the resilient supporting means, it is possible to substitute therefor cylinders or blocks of rubber which will serve the same purpose, so far as vibration is concerned. It is found most desirable to use balls, however, since during the vibration rotary movement takes place, whereby new surfaces are constantly being presented to the reaction of the adjacent portions of the casing and pad 16. Furthermore, rubber balls are common articles of commerce and are consequently inexpensive.

The balls, being made of rubber, are not subject to crystallization and furthermore, absorb the vibrations so that no crystallization of the adjacent metallic parts occurs.

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

1. In combination, a vibrating screen, an arm carried by the screen, a support, and a plurality of rubber balls carried by the support, the arm being interposed between the rubber balls.

5 2. In combination, a vibrating screen, an arm carried by the screen, a support, a plurality of rubber balls carried by the support, the arm being interposed between the rubber balls, and means for adjusting
10 the normal degree of stress on the balls.

3. In combination, a vibratory screen, a support, a casing on the support, rubber balls within the casing, means for adjusting
15 the rubber balls, and an arm on the screen extending within the casing and between the rubber balls.

4. In combination, a vibrating screen, an arm carried by the screen, a support, and
20 a plurality of rubber balls carried by the support, the arm being interposed between the rubber balls; and the balls being free to rotate relative to the support.

5. In combination, a vibratory screen, a
25 support, a casing on the support, rubber balls within the casing, means for adjusting the rubber balls, and an arm on the screen extending within the casing and between the rubber balls, the balls being free
30 to rotate within the casing.

In testimony of which invention, I have hereunto set my hand, at Kennett Square, Pa., on this 16th day of Sept., 1929.

CARL G. A. SCHMIDT, JR.

35

40

45

50

55

60

65