Dec. 28, 1965 A. W. DOSTATNI 3,225,926

VIBRATING SIEVES

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Fig. 1

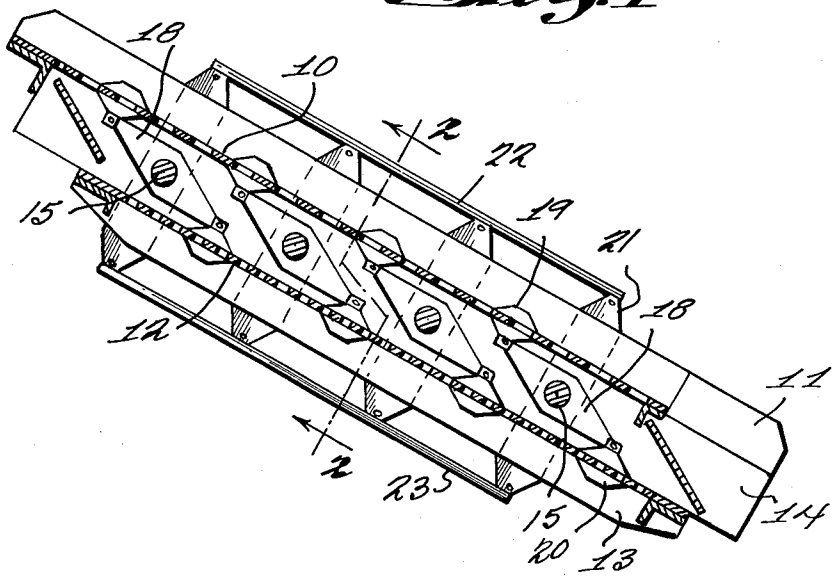
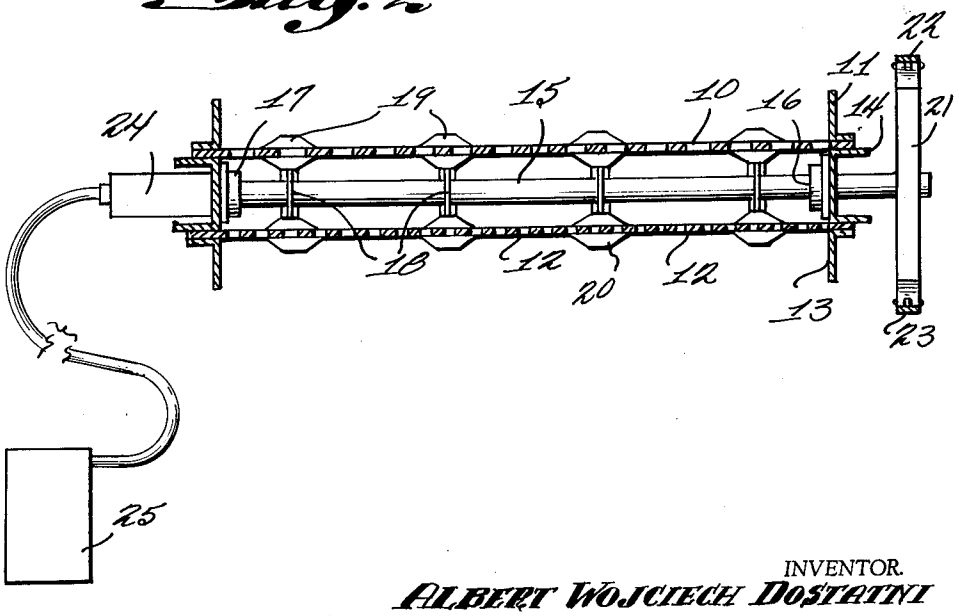


Fig. 2



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VIBRATING SIEVES

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1 Claim. (Cl. 209—315)

This invention relates to screening apparatus and has more particular reference to vibrating sieves whose operation is effected by electromagnetic vibrators directly driving the screening surfaces without the supports of the latter participating in the motion.

One object of the present invention is to proivde a vibrating sieve whose operation is effected by electromagnetic vibrators directly driving the screening surfaces without the supports for the latter participating in the motion, thereby avoiding the vibration of masses not participating in the screening process, thus suppressing the dynamic stresses and the useless consumption of energy.

Another object of the present invention is to provide a vibrating sieve, as above characterized, in which the screening surface is pivotally connected to at least one lever mounted on a shaft resiliently pivotally mounted in the frame supporting the sieve and integrally connected to one of the two parts of the electromagnet of the driving electromagnetic vibrator.

Another object of the invention is to provide a vibrating sieve, as above characterized, comprising two superposed screening surfaces connected together by a series of pivoted levers driven by a single vibrator.

A further object of the invention is to provide a novel and improved vibrating sieve which is simple in construction and efficient in carrying out the purpose for which it is designed.

Other objects and advantages of the invention will appear in the following specification when considered in connection with the accompanying drawing, wherein:

FIG. 1 is a diagrammatic longitudinal sectional view of a sieve constructed in accordance with the present invention, and

FIG. 2 is a transverse sectional view on the line 2—2 of FIG. 1.

The present invention provides a novel and improved vibrating sieve and, in general comprises a vibrating sieve whose operation is effected by an electromagnetic vibrator designed to vibrate the screening surfaces without the supports of the latter participating in the motion.

The invention further contemplates the use of a pair of vertically spaced superposed screening surfaces driven by one or more electromagnetic vibrators which directly drive the screening surfaces without the supports for the latter participating in the motion.

Referring now to the drawing, there is shown, in FIG. 1, an upper vibrating screen **10** fitted on an upper frame **11**, and a lower vibrating screen **12** fitted on a lower frame **13**, with both frames fixedly mounted on a central supporting structure or generally rectangular frame **14**.

A plurality of shafts or tubes **15** (four such being shown), each pivoting within resilient articulations **16** and **17**, are carried by the supporting frame **14**.

Each of the shafts **15** supports four driving levers **18** with the upper ends of each of the driving levers **18** pivotally connected by connections **19** to the upper sieve **10** and its lower end pivotally connected by connections **20** to the lower screen **12**.

Each of the shafts **15** also supports, at one of its ends,

a transmission lever **21** and all of the levers **21** have their upper and lower ends pivotally connected to a pair of connecting rods **22** and **23**, respectively.

In the particular embodiment of the invention illustrated, and as shown in FIG. 2, one of the shafts **15** supports an electromagnetic vibrator **24** which, in turn, is connected to an electric control device **25**. The shafts **15** may be integral with the bed plate or the magnetic core of the electromagnetic vibrator. In the particular modification shown it is made integral with the bed plate of the vibrator.

The shaft **15** supporting the vibrator **24** pivots alternately inside the articulations **16** and **17** under the action of the vibrator.

The electromagnetic vibrator and the control chest or device **25** may be of any suitable usual type.

The operation of the apparatus is believed apparent. The shaft **15** connected to the vibrator **24** transmits electromagnetic vibrations, by means of lever **21** and connecting rods **22** and **23**, to the levers **18** mounted on the other shafts **15** and thus transmits vibrations to the upper and lower sieves.

Obviously, if desired, electromagnetic vibrators may be connected to additional ones of the shaft **15**. Also, if desired, only one screening surface may be employed.

From the foregoing description, it readly will be seen that there has been provided a novel screening apparatus operated by one or more electromagnetic vibrators and so constructed that only the sieves themselves vibrate while the supporting frame remains stationary.

Obviously, the invention is not restricted to the particular embodiment thereof herein shown and described.

What is claimed is:

A vibrating sieve comprising a supporting frame, a first screening surface mounted on said frame, a second screening surface vertically spaced from and disposed substantially parallel to said first screening surface, a plurality of shafts resiliently and pivotally mounted on said frame between said spaced screening surfaces and disposed substantially parallel to each other, lever means rigidly secured to one end of each of said plurality of said shafts, said lever means comprising a plurality of levers connected at their upper and lower ends to a pair of connecting rods, an electromagnetic drive means connected to at least one of said plurality of shafts, and a plurality of drive lever means each rigidly secured to one shaft and driven thereby, means pivotally connecting said drive lever means between said first and second screening surfaces, said shafts connected to said electromagnetic drive means, said lever means associated with said shafts, said connecting rods, and said drive lever means imparting the vibrational forces produced by said electromagnetic drive means to said first and second screening surfaces.

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