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MECHANISM FOR DRIVING SIEVES.

APPLICATION FILED DEC. 31, 1912.

1,116,124. Patented Nov. 3, 1914.

Fig. 1.

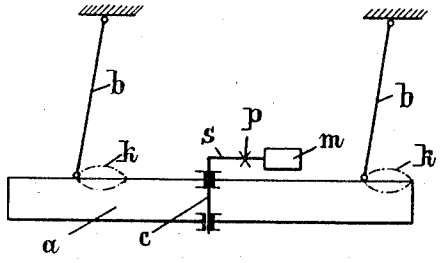


Fig. 2.

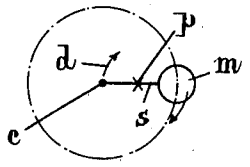


Fig. 3.

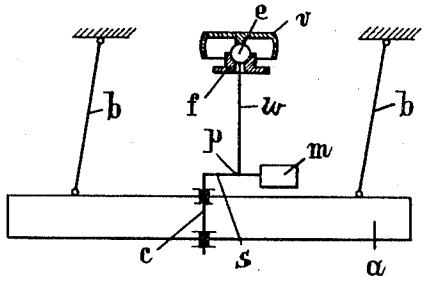
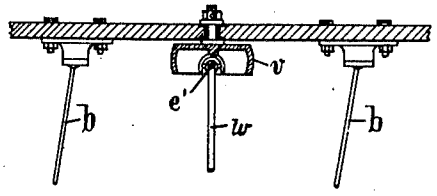


Fig. 4.



Witnesses,

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MECHANISM FOR DRIVING SIEVES.

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To all whom it may concern:

Be it known that I, KARL ROJAHN, technician, citizen of the Duchy of Brunswick, Empire of Germany, residing at Brunswick, Germany, have invented certain new and useful Improvements in Mechanisms for Driving Sieves, of which the following is a specification.

My invention relates to improvements in mechanisms for driving sieves, and the like, and more particularly to driving mechanisms in which the driving member consists of a revolving body mounted on the sieve and adapted by centrifugal action to impart to the sieve parallel swinging movement along a circular path.

The object of the improvements is to provide a driving mechanism which is simple in construction and effective in operation.

With this object in view my invention consists of the matters to be described hereinafter and particularly pointed out in the appended claims, reference being had to the accompanying drawing and the letters of reference marked thereon, which form a part of this specification.

In said drawing—Figure 1, is a diagrammatical side view of a sieve, its supporting means and driving member illustrating the principle on which the invention is based, Fig. 2, is a diagrammatical plan showing the revolving driving member and the center of revolution of the system, Fig. 3, is a side view partly in section illustrating in a diagrammatical way an embodiment of the invention, and Fig. 4, is a side view partly in section showing a modification of a detail.

The same letters of reference have been used in all the views to indicate corresponding parts.

In order that my invention be more clearly understood, I deem it best first to describe the general principle on which it is based. Referring to the diagrammatical views shown in Figs. 1 and 2, a plane sieve *a* is mounted in the usual way on four links or elastic rods *b*, and carries on a vertical axis or shaft *c* and at the end of an arm *s* a revolving body *m*. If the body *m* is made to revolve, the reaction causes the sieve to move along a circular path which in Fig. 1 has been indicated by the letter *k*, and each point of the sieve moves along a similar circular path. Therefore, while the body *m* revolves around the axis *c* also the axis *c* revolves in the same sense in a circular path, as has been indicated in Fig. 2 by the arrow *d*. Therefore, as the ends of the arm *s* perform revolving movements along circular paths, it follows, that there is a point *p* of the said arm which is relatively stationary and constitutes the axis of revolution of the arm. If a vertical shaft *w* is rigidly connected with the arm *s* at the point *p*, as is shown in Fig. 3, and the said shaft is rotated by means of a belt gearing or the like, the shaft does not change its position while the sieve *a* moves along a regular or normal circular path and the body *m* revolves, and it rotates around its longitudinal axis. Hence a shaft arranged in this manner may be used without having to be mounted in fixed sleeve-bearings, as is the case with the crank-drive employed in the plane sieve shown in Fig. 1.

Since the shaft *w* has a tendency, in exceptional cases, *e. g.* in change of load of the plane sieve and shifting of its center of rotation *p*, to make small turns, said shaft is so mounted as to enable it to follow this tendency by being yieldingly suspended at its upper end for movement in all directions. The suspension mounting consists, as shown in Fig. 3 of a ball *e* and socket *f*. Where the shaft *w* is driven by means of a belt gearing, the pulley *v* can be rigidly secured to the shaft, as is shown in Fig. 3, or it may have a stationary support, as is shown in Fig. 4, in which case it is connected with the shaft *w* by means of a universal joint e^1.

Preferably the construction of the system is such, that the bearing of the shaft *c*, the center of gravitation of the sieve and the center of gravitation of the body *m* are so located, that the horizontal forces are within the same horizontal plane, so that they balance one another, and a momentum is avoided. Also the said shaft or pivot *c* is so mounted as to be capable of such freedom of movement as not to bind when the shaft *w* and, consequently, the arm *s* are inclined.

My improved construction of the driving mechanism possesses the following advantages: As the body *m* is eccentrically mounted on the shaft *w*, and the latter is pivotally suspended from its socket *f*, it presses the sieve also in the position of rest into the position which corresponds to the radius of its circle of revolution, as is shown in Fig. 3, so that it is not necessary to gradually move the sieve in this position when starting

the operation, as is necessary with the arrangement shown in Fig. 1. In the construction shown in Fig. 3 the body *m* does not bear on the sieve, but it is supported on the shaft *w*. Therefore, when the body *m* is revolving the tensional strain on the points of support of the rods *b* is not varied, so that no jars are transmitted to the building in which the sieve is provided. Furthermore no bearings are necessary for the shaft *w* which would likewise transmit shocks to the building. And finally objectional driving means for the body *m* such as flexible shafts, oscillating belts, etc., are avoided.

I claim herein as my invention:

1. The combination, with a driven member provided with a bearing, and supporting means for said member arranged to permit swinging movement along a closed curve; of a vertical drive shaft suspended at its upper end above said member for free oscillatory movement; and a revoluble arm rigidly and laterally attached intermediate its ends to the lower end of said shaft and provided at its inner end with a pivot mounted in said bearing and at its outer end with a weight.

2. The combination, with a driven member, and supporting means therefor arranged to permit swinging movement along a closed curve; of a revoluble arm mounted on said member and provided at its outer end with a weight; a vertical drive shaft located above said arm and having its lower end rigidly attached to the same at a point thereon which constitutes the axis of revolution of the arm; and a ball-and-socket mounting from which the upper end of said shaft is suspended, to permit free oscillatory movement thereof.

3. The combination, with a driven member, and supporting means therefor arranged to permit swinging movement along a closed curve; of a vertical drive shaft suspended at its upper end above said member for free oscillatory movement; and a lateral arm revolubly mounted at its inner end on said member and rigidly attached to the lower end of said shaft, whereby the ends of said arm will move revolubly through circular paths during the rotation of the shaft. the point at which said shaft and arm are attached constituting the axis of revolution of the latter.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

KARL ROJAHN.

Witnesses:
WILHELM LEHRKE,
HERMANN FAHLBERG.