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SHAKER SIEVE AND METHOD FOR PRODUCING THE SAME

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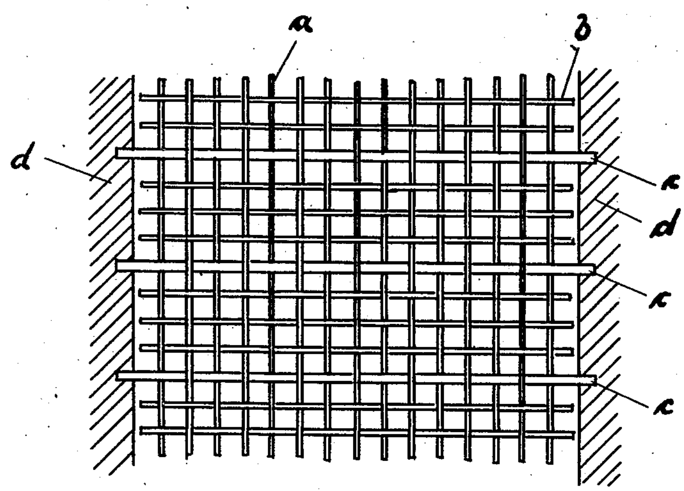

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SHAKER SIEVE AND METHOD FOR PRODUCING THE SAME

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Through the short successive swinging motions of a sieve bottom the wires of the sieve gauze are exposed to an exceptionally large strain. If these wire gauzes are only of the usual commercial quality, the disadvantage of quick destruction of this wire gauze frequently results.

For the production of wire gauze in general there must be employed a soft shapable wire material, which can be woven so that the wires crossing each other undulate. If hard material is employed on the contrary, such an undulation of the wire does not occur, with the result that the position of the wire is not secured and the wires can easily change in their position, as a result of which inequality and inaccurate sifting often arise.

In order to remove these disadvantages and to obtain wire gauze for shaker sieves with a greater length of life and with equal accuracy of mesh, according to the present invention, the warp wires are formed of soft shapable material, while the weft wires are formed on the contrary from high quality spring steel; the warp wires undulate in the weaving in similar manner as in gauze of normal construction, because the material has a soft shapable quality. As the weft threads consist of high quality spring steel, and therefore cannot undulate in the weaving, the weft wires of spring steel are undulated previously in the manner known per se, whereby the undulation corresponds exactly to the distance between the warp wires and in this previously undulated condition are inserted between the open divisions of the warp wires for the weaving.

If gauze thus produced is secured to the longitudinal sides of the sieve frame, the spring steel wires are secured on both sides, so that the latter operate as flexible springs, whilst the longitudinal wires of soft material only determine the equal distance between the spring wires. Such a sieve has not only unusually great spring action and increases as a result the shaking motion, but at the same time great stability is obtained by the application of high quality steel wire, as well as great strength and spring flexibility attained therewith. Also in employing a high quality steel wire material for the weft wire the use of a much smaller wire thickness is made possible, whereby a larger total open space is provided in the sieve and as a consequence a higher penetrability and more efficient performance is assured.

This method for the production of wire gauze for shaker sieves is not applicable for wire gauze of very small width of mesh, because the prior undulating of the spring steel weft wires can not be produced with absolute equality for small width of mesh as a result of certain inequalities of hardness of material, whereby again inequalities of size in close mesh wire gauze become very noticeable.

For the production of wire gauze in a small width of mesh for shaker sieves the method may be altered in that not only the warp but also the weft wires consist of soft steel material and at certain intervals a stronger harder steel wire is used as weft instead of a weak soft steel wire, so that plain wire gauze widths are provided which lie between the stronger hard spring steel wires. If such gauze is fastened to the longitudinal sides by means of the stronger harder spring steel wires, the spring steel wires in the sieve bottom form the main bearing element, to take over from the other wires almost exclusively the strain due to the shaking motion of the sieve. The gauze widths hang to a certain degree loose between the secured spring steel wires and serve only for the sifting off of the material conducted over it.

In the accompanying drawing the invention is illustrated by way of example on an enlarged scale.

As is evident from the drawing the wire gauze for shaker sieves consists of warp wires *a* of soft shapable material, whereas weft wires *b* according to the first method consist of high quality spring steel. According to the second method for producing wire gauze in small width of mesh the weft wires *b* consist of soft steel material. At certain distances there are used in said wire gauze strong spring steel wires *c* as weft, by which the finished wire gauze is secured to the frame of a vibrator or sieve bottom *d*.

What I claim and desire to secure by Letters Patent is:—

1. Method for the production of shaker sieves, for vibration, made of wire gauze consisting in providing warp wires of soft shapable material and weft wires of high quality spring steel, undulating the weft wires before weaving, and in this previously undulated condition inserting the weft wires in the open division of the warp wires for the weaving.

2. Process for the production of wire gauze for shaker sieves consisting in providing warp wires and weft wires of soft steel material and at certain intervals replacing the soft steel weft wire with a stronger steel wire, and fastening said stronger steel wires to a framing device.

3. Shaker sieves for vibration formed of wire gauze having in combination warp wires of soft shapable material, and weft wires which are undulated before weaving and are inserted in their previously undulated condition in the open division of the warp wires, the weft wires consisting of high quality spring steel, and being secured at both sides to a framing device.

4. A shaker sieve for vibration formed of wire gauze comprising in combination warp wires of soft steel material, weft wires of soft steel material, and other weft wires of stronger spring steel wire disposed at intervals, the last mentioned weft wires being secured to the frame of the vibrator.

In testimony, that I claim the foregoing as my invention, I have signed my name this 18th day of July, 1929.

RUDOLF HERRMANN.