

July 18, 1967

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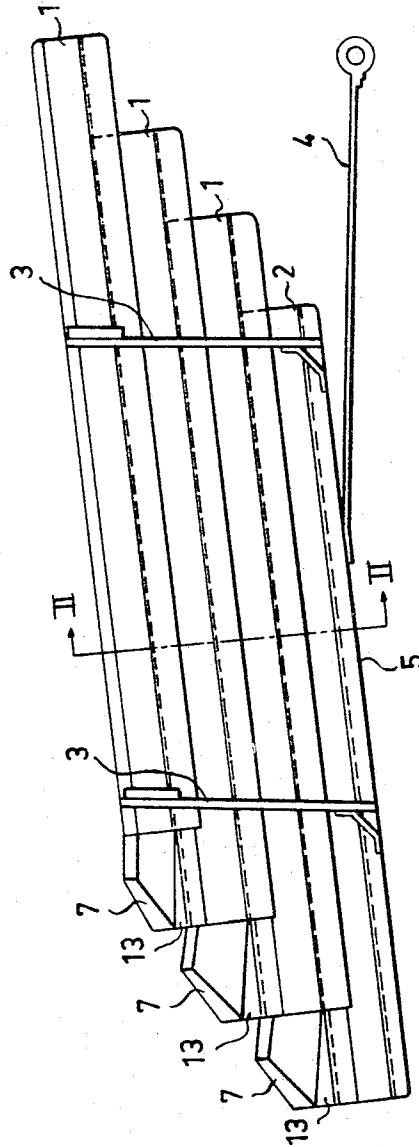
3,331,508

CHANNEL SUPPORTS FOR SCREEN FRAMES

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3 Sheets-Sheet 1

FIG. 1



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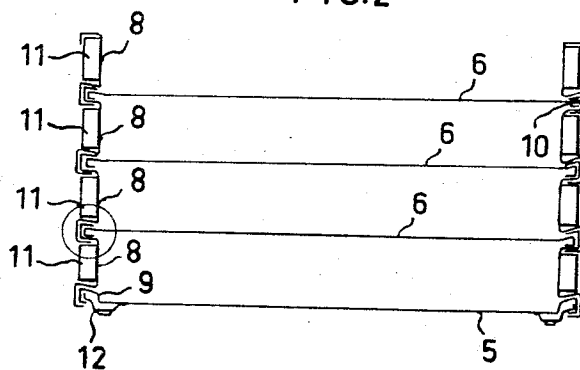
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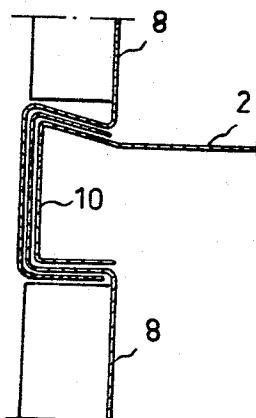
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FIG. 2



II - II

FIG. 3



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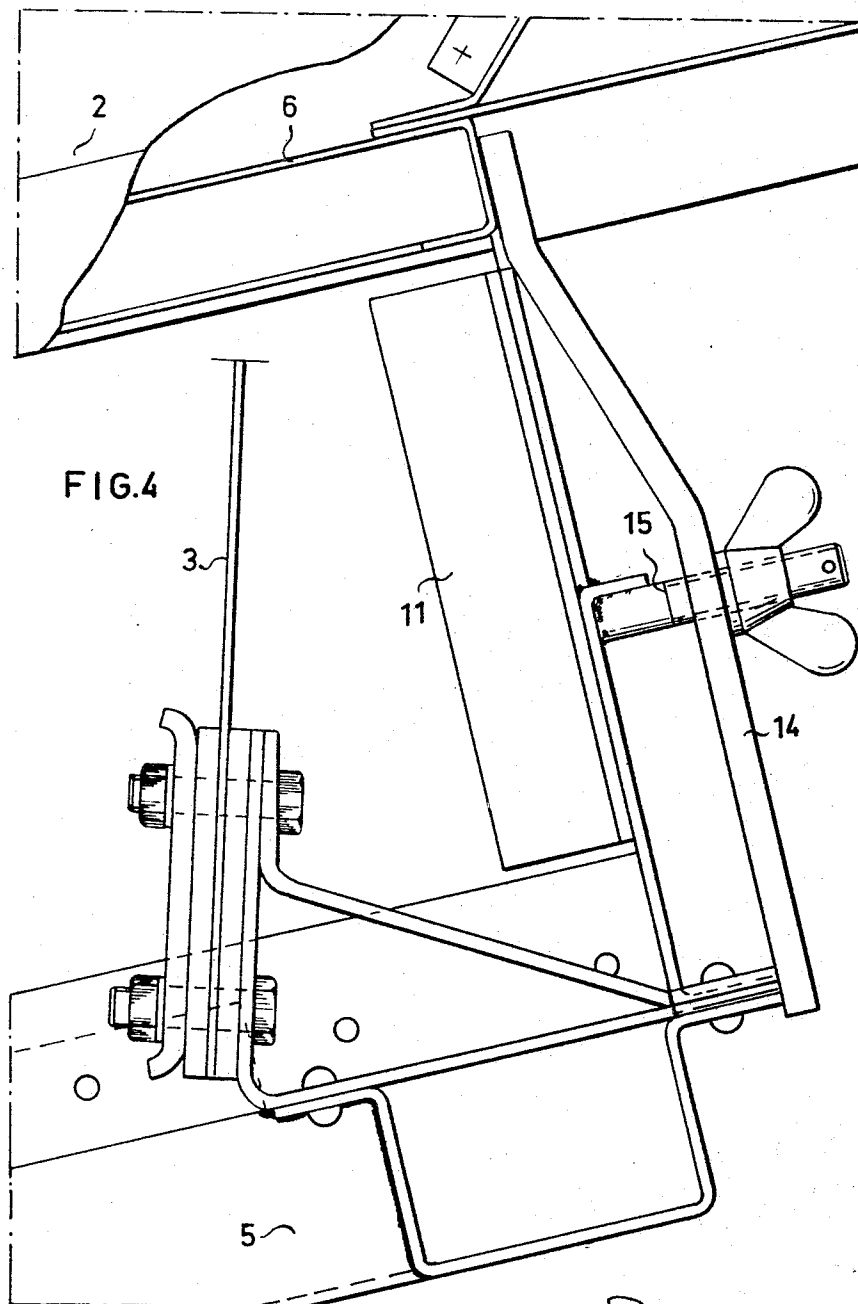
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3 Sheets-Sheet 5



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CHANNEL SUPPORTS FOR SCREEN FRAMES

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2 Claims. (Cl. 209—319)

This invention relates to a screening apparatus comprising a number of screens mounted in rectangular frames and carried by side walls in vertically spaced relationship.

The screening apparatus suggested by the present invention is primarily characterized by the fact that the side walls are composed of a number of wall elements which consist of preferably bent or rolled metal sheets and of which the adjoining longitudinal edge portions of at least the adjoining wall elements are so designed that one of said edge portions is longitudinally insertable in the other edge portion and constitutes a guide which is adapted to accommodate and carry one side of a screen frame longitudinally insertable therein.

The invention has for its object to realise assembling of a desired number of screen units to form so-called screening boxes, with the use of but a few different structural elements so shaped as to permit easy assembly by means of simple connecting means and easy mounting in any desired position offset relatively to each other. This will make it possible to manufacture the screen elements in large series at relatively low costs. Besides, mounting and storage are thereby simplified.

Owing to the particular construction of the wall elements other elements associated with the screening apparatus according to the invention, such as the bottom and the collecting channels, can be formed with holders or frames adapted to be passed onto or pushed into the edge portions of the wall element. When the screening apparatus according to the invention is equipped with transverse collecting channels at the end of each screen unit, said collecting channels constitute interconnecting means for the entire screening apparatus.

These and further features of the invention will become apparent from the following description in which reference is made to the accompanying drawings, in which:

FIG. 1 is a vertical side elevational view of a screening box including three screens;

FIG. 2 shows a cross-sectional view on line II—II in FIG. 1;

FIG. 3 on a larger scale shows the connection between two adjoining wall elements and a screen frame;

FIG. 4 on a larger scale shows the fixation of a screen in the screening box.

The screening apparatus shown in FIGS. 1 and 2 is composed of three screen units 1 and a bottom section 2 for a so-called screening box. Said box is suspended by means of springs 3 in a position inclined towards one end and is connected with a vibrating means in the shape of an eccentric connecting rod 4 the outer end of which is attached to the bottom 5 of the screening box.

Each screen unit 1 comprises a screen 6 and a transverse collecting channel 7 which is placed at the lower end of the inclined screen unit 1 and adapted to receive material which does not pass the respective screens 6. The screens 6 and the screen bottom 5 are vertically spaced equal distances apart and as shown in FIG. 1 are preferably longitudinally offset in relation to each other, which brings the advantage that the material to a major portion falls onto the adjoining screen 6 as near as possible to the upper end thereof.

According to the invention, the longitudinal side walls of the screening box are composed of wall elements 8

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which in number correspond to the number of screens 6, and a bottom 5. These wall elements 8 together form the longitudinal side walls of the screen units 1 and the bottom section 2. Each wall element 8 consists of a long rectangular plate which in the example shown is a metal sheet and has its longitudinal portions bent into channels which are open in the same direction. The said channels have their one side walls inclined and their opposite side walls perpendicular to the bottom of the respective channel so that said channels will be of increasing width, as viewed from the open sides. The channel-shaped edge portions at the upper and lower edges of the wall elements are of such a conforming shape that the upper edge portion of one wall element fits, and is insertable in, the lower edge portion of the adjoining upper wall element, in the manner of a dovetail connection. The lower edge portion of the lowermost wall element 8 constitutes a guide and a support means for the bottom 5 of the screening box, and the longitudinal edge portions 9 of said bottom 5 are made in the form of frames of the same shape as the upper edge portions of the wall element. The screens 6 are mounted in frames 10 the longitudinal sides of which are of the same shape as the lower edge portions of the wall elements 8 but have a smaller cross section so that they are longitudinally insertable in the upper edge portions of the respective wall elements. The connection between the wall elements 8 and the bottom and screen frames 9, 10 of the screening box thus likewise is of the dovetail connection type.

Transverse angle irons 11 (FIG. 2) are welded to the wall elements 8. Resilient elements 12 are connected with the bottom 5 of the screening box and engage in the lower edge portions of the lowermost wall elements 8 to keep the bottom 5 interlocked with the edge portions of the wall elements, in the manner of clamping jaws.

The upper edges of the uppermost wall elements 8 may have the same shape as the corresponding edges of the other wall elements; in the embodiment illustrated, however, they are bent outwardly and downwardly so that the side walls of the screening box will have smooth upper edges.

As earlier mentioned, and as shown in FIG. 1, the screen units are longitudinally offset in relation to each other. They are preferably offset a distance corresponding to the width of the transverse collecting channels 7 at the ends of the screen units. At their short sides these collecting channels 7 have vertical carrier plates 13 the lower edge portions of which are conformed to the edge portions of the wall elements 8 and are pushed into or passed onto the upper edge portion of the side walls 8 of the next underlying screen unit 1. Moreover, the collecting channels 7 are connected to said underlying screen unit and to the associated screen unit 1 or bottom section 2 by bolts or other connecting means, forming assembling means for the screening box units 1, 2 at this end. At the opposite end the units 1, 2 of the screening box are kept together by latching stirrup means 14 which are connected with the angle irons of the wall elements 8 and adapted to be resiliently clamped with the aid of bolts 15 against the ends of the respective screens 6 to retain them in the channel-shaped edge portions of the wall elements 8.

The foregoing description and accompanying drawings relate to a preferred embodiment of the screening box for screening seeds, cereals, granular material etc. It may, however, be enlarged as desired to comprise more than three screen units, but it may also include but a single screen unit together with a bottom section depending upon the type of the products to be screened or special wishes.

The screening apparatus according to the invention naturally was described in the above embodiment for

purposes of illustration rather than limitation and it will be readily understood that variations and modifications of the invention are possible within the scope of the appended claims.

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

1. A channel support for a plurality of rectangular frames having a screen mounted in each of said frames comprising side walls in which said frames are carried in vertically spaced relationship, said side walls comprising a plurality of spaced wall elements of bent metal sheets, the adjacent longitudinal edge portions of adjoining wall elements having one of said edge portions longitudinally insertable in the other edge portion forming a guide to accommodate and carry one side of a frame longitudinally insertable therein, said adjoining edge portions of said adjacent wall elements having the form of a channel opening inwardly of the screening apparatus and being of increasing width as viewed from the open sides, one channel having an outer contour substantially corresponding in size and shape to the inner contour of the other channel.

2. A channel support as claimed in claim 1, wherein

said wall elements are of substantially the same size and shape, and the lower edge portions of the two lowermost wall elements of said side walls form a guide and support means and a bottom plate having longitudinal edges insertable in said guide and support means.

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