Jan. 19, 1937. A. D. HUNSICKER 2,068,413

SIEVE

Filed Nov. 26, 1934 2 Sheets-Sheet 1

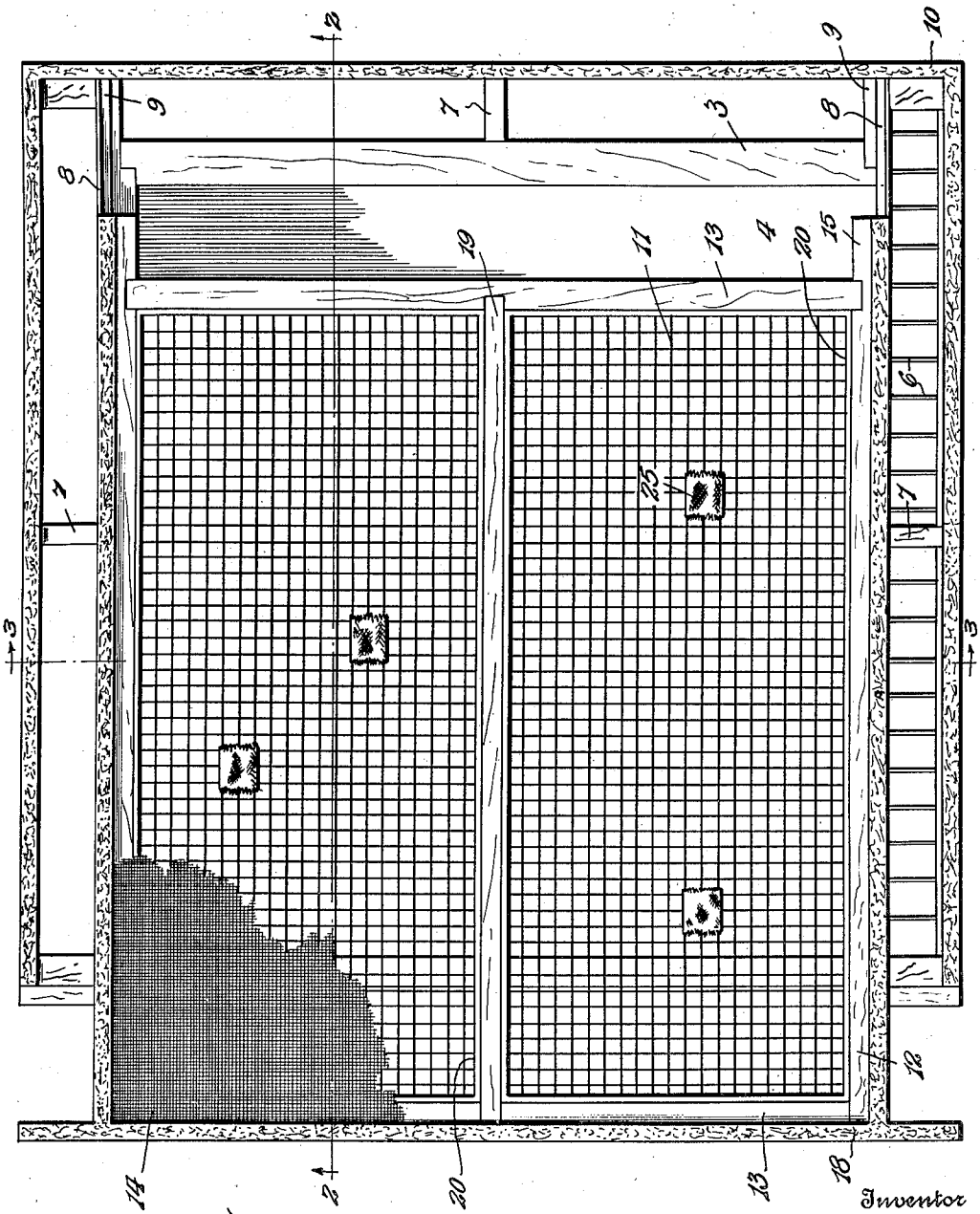


Fig. 1.

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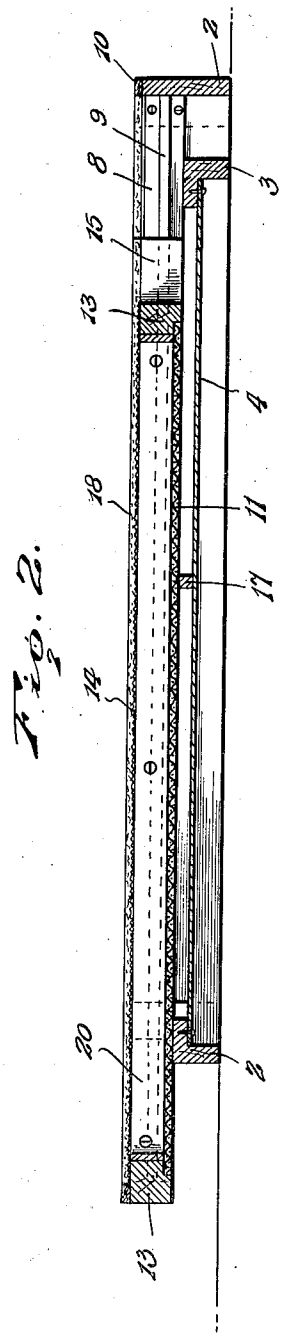


Fig. 2.

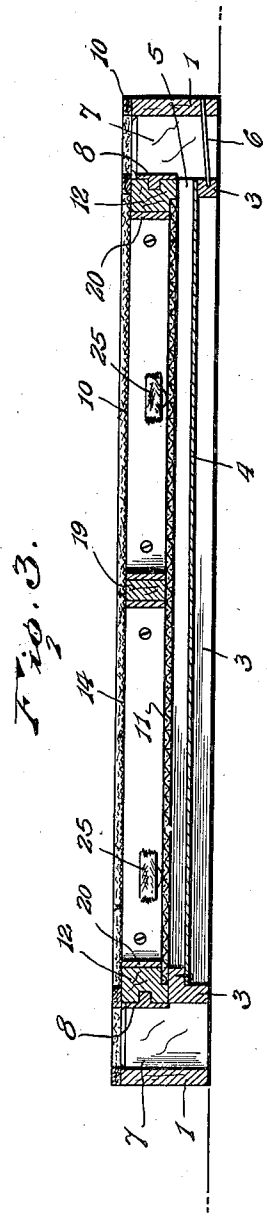


Fig. 3.

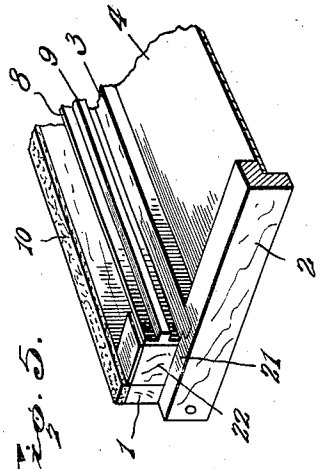


Fig. 5.

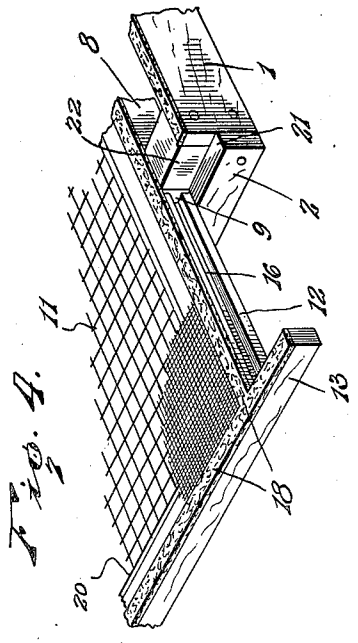


Fig. 4.

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Patented Jan. 19, 1937 2,068,413

UNITED STATES PATENT OFFICE

2,068,413

SIEVE

Allan D. Hunsicker, Salina, Kans.

Application November 26, 1934, Serial No. 754,878

1 Claim. (Cl. 209—408)

This invention relates to sieves for flour-bolting machines, and its primary object is to provide a structure which will obviate the necessity of providing a large number of complete units to accommodate the right and left hand arrangement now employed in flour-bolting machines. It is also an object of the invention to provide a removable screen which may be easily placed in a sieve frame and may be employed upon either a right or a left hand frame. The invention also seeks to improve the construction to the end that the capacity and durability of the sieve will be increased without any appreciable cost in production and with a decided reduction in maintenance cost. These several stated objects, and other objects which will appear in the course of the following description, are attained in such a device as is illustrated in the accompanying drawings, and the invention resides in certain novel features which will be particularly defined in the claim following the description.

In the drawings:

Figure 1 is a plan view of a sieve embodying the present invention, the screen or sieve proper being partly withdrawn.

Figure 2 is a longitudinal section on the line 2—2 of Figure 1.

Figure 3 is a transverse section on the line 3—3 of Figure 1.

Figure 4 is a detail perspective view showing the corner construction of the main frame and of the detachable sieve.

Fig. 5 is a detail perspective view more particularly showing the tracks or guides upon the main frame.

The main frame of the sieve is composed of side bars 1 and end bars 2 with inner bars 3 spaced from the side bars and one end bar to form the usual vertical passages, it being understood that the sieves are arranged in stacks and the material treated in the stack of sieves is discharged alternately at the right and left hand sides of the sieves. An imperforate plate 4 extends across the frame and is secured to the inner bars 3 of the same, as shown most clearly in Figures 2 and 3, the bar 3 at the discharge side of the frame being of less height than the opposite bar 3 so as to provide an opening 5 through which the screened material may pass, and across the adjacent side space are secured rods 6 which operate in the usual manner. At the back end of the frame, and at the centers of the same, a brace or stay block 7 is secured between the end or side bar and the adjacent inner bar 3 and the rear block 7 projects somewhat above the edge of the inner bar 3 so that it serves as a stop for the inward movement of the screen or upper frame, as will presently appear. Carried by the inner side bars 3 are metal tracks or guide plates 8 having horizontal ribs 9 on their inner opposed faces to be engaged by and slidably support the upper screen frame, as will presently appear. Upon the upper edges of the side bars and the back bar of the lower frame is secured a strip 10 of felt or similar material which serves as a packing or seal to prevent leaks between sieves.

The coarse screen 11, according to the present invention, is secured to and carried by an upper frame including side bars 12 and end bars 13, the side bars being extended somewhat beyond the rear end bar 13, as shown at 15, so that, when the screen is pushed rearwardly upon the lower or main frame, a space will be left between the rear end bar of the main frame and the rear end bar of the screen frame coinciding with the space between the rear end and inner bars of the main frame. The usual bolting cloth or fine screen 14 is secured upon and stretched over the bars 12 and 13. The side bars 12 of the screen frame are provided in their outer sides with longitudinal grooves 16 adapted to engage the ribs 9 whereby the screen frame will be slidably engaged in and supported by the main frame. The usual cross brace bar 17 is secured in the main frame and bears against the under side of the screen 11 to resist sagging thereof. The front end bar 2 performs the same function for the front portion of the screen and it will be understood that the screen rests directly on the side bars of the main frame so that the strain upon the ribs 9 will be minimized, all of which will be understood upon reference to Figure 3. A facing strip 18 of plush, felt or the like, similar to the strip 10 on the main frame, is secured upon the upper edges of the side bars and the front end bar of the upper or screen frame, and a central longitudinal bar 19 extends between and is secured to the front and rear end bars 13 of the screen frame whereby to reinforce the frame with the minimum diminution of its active surface. A metal liner 20 is secured to the inner faces of the side and end bars and the central brace bar of the screen frame so that said frame will keep its shape and resist wear even under long continued use, this liner making the cross bars ordinarily employed unnecessary. The capacity of the sieve is thereby very materially increased as the blocked surface of the bolting cloth is reduced about one-half. The bolting

cloth rests upon the brace bars of the screen frame and, of course, that portion of the cloth in contact with the bars is inactive, but in the present structure the inoperative surface is appreciably reduced without any weakening of the frame.

It will be readily noted from the foregoing description, taken in connection with the accompanying drawings, that I have provided a very simple and compact structure which will obviate the necessity of providing a large number of complete sieve frames as a reserve stock for emergency use. The wear in these sieves comes, of course, upon the screens and heretofore it was necessary for the miller to have on hand a large number of complete sieve units so that in the event of damage to one screen the unit containing that screen could be quickly replaced. It was also necessary to have these reserve units in rights and lefts but by the use of my invention it is not necessary to maintain a reserve supply of compete units inasmuch as it is only necessary to maintain reserve upper or screen frames. The screen frame is readily slidable into or out of the lower or main frame and it will be particularly noted, upon reference to Figure 4, that the front end bar of the lower or main frame is of a stepped formation providing a horizontal shoulder **21** and a vertical shoulder **22**, while the front end bar **13** of the screen frame extends beyond the side bars of said frame and is adapted to impinge against the vertical shoulder **22** and rest upon the horizontal shoulder **21** when the screen frame is pushed inwardly upon the lower supporting frame. Inasmuch as the screen frame is removable and may be readily slid into or out of the lower frame, it is adapted to either a right or a left hand sieve and, consequently, the reserve supply necessary for any establishment is very materially reduced so that the cost of maintenance is minimized.

The usual cleaners **25** are disposed freely in the space between the screens, and the motion of the machine in operation causes them to fly against and rub over the under surface of the cloth so that the cloth will be kept in operative condition.

In operation, the sieve constructed according to the present invention functions in the same manner as the sieves now ordinarily used but when repairs or replacements are necessary with my screens all that needs to be done is to withdraw the damaged screen and insert a fresh screen, dismantling, either wholly or partly, of the entire machine being avoided.

Having thus described the invention, what is claimed as new is:

A sieve comprising a supporting frame having side bars and front and rear bars, a cross bar in said frame spaced from the rear bar and defining a passage across the rear end of the frame open at its top and bottom, tracks in said frame extending between front and rear bars thereof over the cross bar, a screen frame in the supporting frame having end bars and side bars slidably engaging said tracks, and screening secured to the screen frame, the side bars of the screen frame having their rear end portions extending rearwardly beyond the rear end bar of the screen frame to engage the rear bar of the supporting frame and limit rearward movement of the screen frame when the screen frame is slid into the supporting frame and leave the passage between the cross bar and the rear bar of the supporting frame unobstructed.

ALLAN D. HUNSICKER.