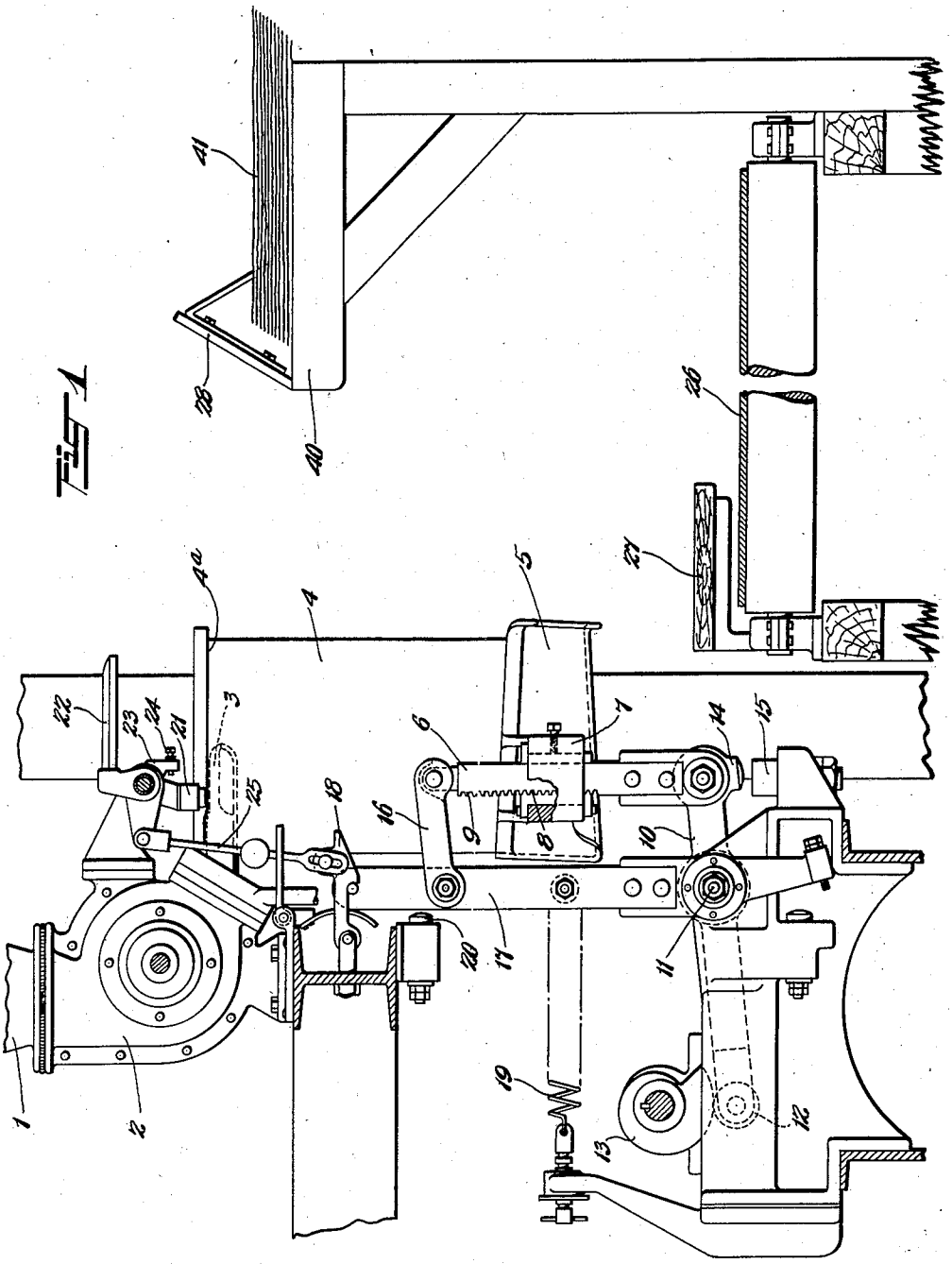
Jan. 22, 1935. K. STAHM 1,988,705

BAG CHAIR FOR BAG FILLING MACHINES

Filed Oct. 10, 1931 2 Sheets-Sheet 1

Fig. 1



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Filed Oct. 10, 1931 2 Sheets-Sheet 2

Fig 3

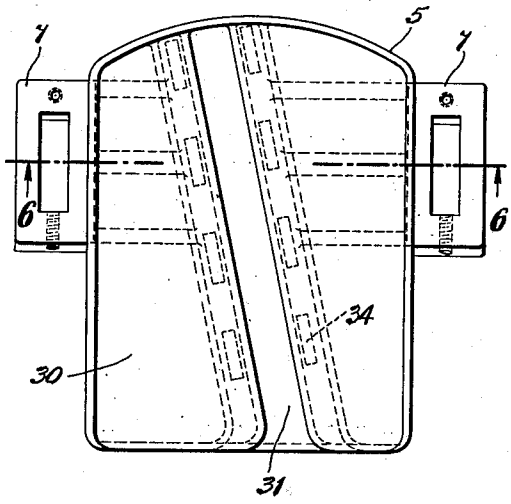


Fig 4

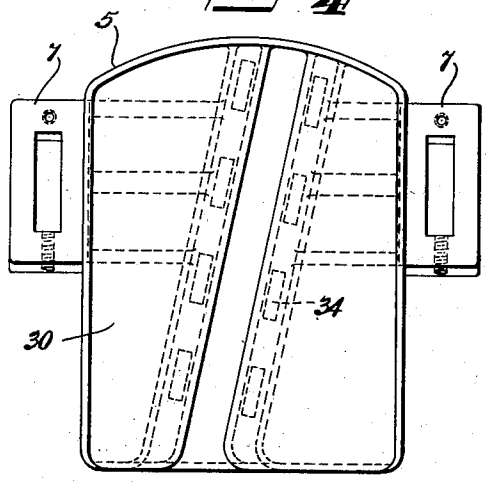


Fig 5

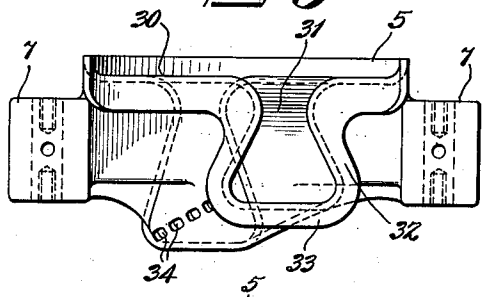
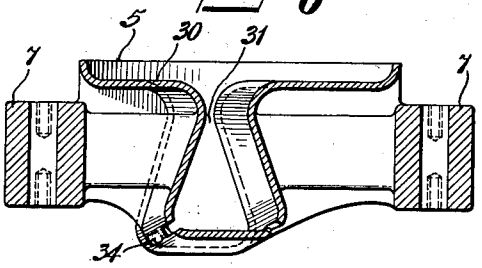


Fig 6



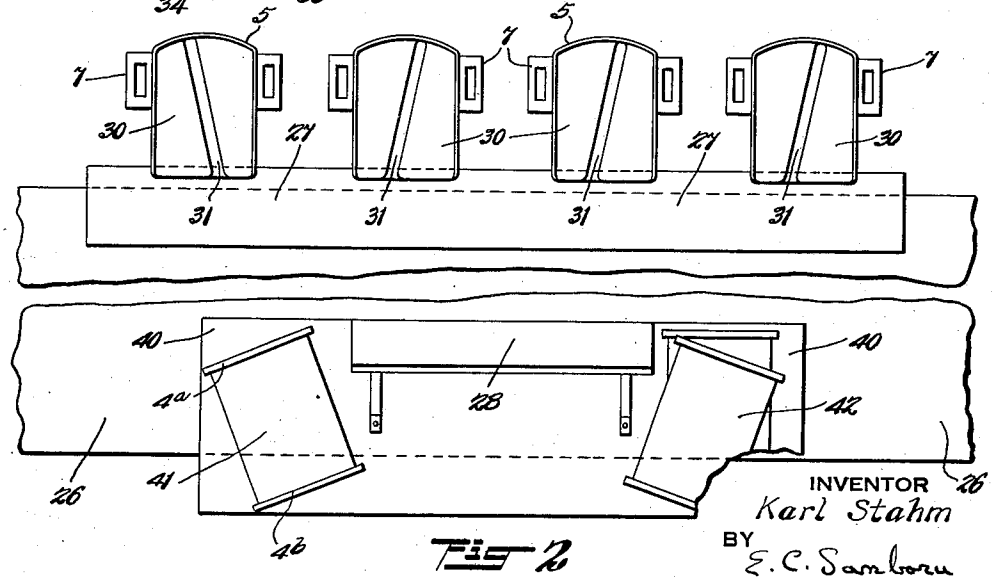


Fig 2

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UNITED STATES PATENT OFFICE

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BAG CHAIR FOR BAG FILLING MACHINES

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Application October 10, 1931, Serial No. 568,010

14 Claims. (Cl. 226—48)

This invention relates to bag chairs for bag filling machines, and particularly to such chairs for supporting the bottoms of paper bags which have seams projecting outwardly from the portions thereof which receive the contents. These bags would be apt to be damaged if rested upon chairs with flat seats. The present invention aims to provide an improved chair including a novel slot construction, adapted especially for such bags and for use in machines in which the bag is jogged during filling and discharged upon tilting of the chair, but also capable of supporting other types of bags upon various types of machines.

More specifically, then, one object of the invention is to make provision in a slotted bag chair for facilitating the positioning of bags for support by the chair, and for aiding in retaining the bags in this position especially prior to the commencement of the filling operation and during the first part thereof, as is especially important in machines of the type described in the copending applications Arno Andreas Serial Nos. 419,986 and 570,330, wherein the bag chair is jogged continuously, or in other words, not only when substantial material is in the bags, but while they are being put in place and while they are comparatively empty. Another object is to provide a bag chair construction adapted to permit the operator readily to place bags thereon while standing at one side thereof, convenient to a stack of empty bags, which chair is particularly suited to machines including several units arranged in bank, for control by a single operator preferably standing in one position. A further object is to devise a bag chair which is capable of insuring the discharge of bags therefrom when tilted, especially when the weight of material in the bag is to effect the discharging action.

Still another purpose of the invention is to devise a construction embodying these advantages, which, at the same time, partly by reason of a novel slot construction, avoids injury to the bag from the jogging, although the bottom of the bag is jogged, and also avoids the sticking or wedging of the bag in the slot as the bag fills and expands.

Moreover, the invention aims to provide such a chair in which openings are formed for disposing of dust which collects in the slot when the bags are being filled with powdered material, which openings shall not interfere with the placing of bags in filling position.

Another object is to provide a bag chair embodying these advantages which shall be simple and inexpensive to manufacture and of sturdy construction.

These and other objects and advantages of my invention will be more apparent from a preferred embodiment thereof which will now be described, reference being had to the accompanying drawings, wherein:

Fig. 1 is a side elevation of bag filling mechanism, partly in section. Fig. 2 is a plan view, mainly diagrammatic, of the construction shown in Fig. 1. Figs. 3 and 4 are detail plan views of the bag chairs shown in Fig. 2. Fig. 5 is a front elevation of the chair shown in Fig. 3, and Fig. 6 is a section on the line 6—6 of Fig. 3 looking in the direction of the arrows.

In Fig. 1 there is shown mechanism for supporting a bag and for jogging it, while filling it with finely divided material. This construction is described and claimed in copending application Serial No. 570,330, and hence will only be described here in sufficient detail to explain its principal features and operation, inasmuch as my present bag chair construction is especially adapted for use with such a machine, although it is, as stated above, capable of use in connection with other bag filling machines.

There is shown at 1 a hopper for feeding finely divided material to a turbine 2, the latter operating to impel the material through a spout 3 into valve bag 4. This bag is shown as the seamed type, having seams 4*a* and 4*b*. The bag is supported on a bag chair 5 which may be carried on normally upright arms 6 by means of ears 7 having teeth 8 for engagement with teeth 9 on said arms. These arms 6 are shown pivoted on a jogging arm 10 which, in turn, is pivoted at 11 and is jogged through roller 12 by cam 13. The forward end of the jogging arm is shown provided with a downwardly extending portion 14 for abutment against stop 15, so that the cam is relieved of the force due to dropping of the bag chair. For discharging a bag from the bag chair in this construction, the upright arms 6 tilt forwardly and the construction is preferably such that the resultant center of gravity of the chair and a bag thereon containing material is forward of the pivot of the arms so that the discharge is accomplished without substantial effort on the part of the operator, who is merely required to release a latch, as hereafter indicated. For normally retaining the arms 6 in generally upright position there is provided mechanism which does not interfere with the jogging and which is free to operate

notwithstanding the jogging. This may consist of links 16 pivoted to the upper ends of arms 6 and also to uprights 17 which are pivoted at 11 and retained by latch 18. A spring 19 may be attached to the uprights 17 in suitable manner and adjusted so that it does not prevent their tilting to effect discharge of a bag containing material, but does retract the chair to the position shown upon said discharge. Stops 20 are provided for limiting the tilting of uprights 17. A bag clamp 21 serves to retain the bag on the spout and is releasable by handle 22 through arm 23 and set screw 24, the latch 18 also being operated by the handle through link 25. As the bag is discharged it falls onto conveyor 26 for carrying it to any desired point. The operator stands on platform 27 and may rest his back against support 28.

Referring now to Figs. 3, 5 and 6, the bag chair is shown as consisting generally of a seat portion 30 which is adapted to support a bag, and a slot 31, in which the seam of the bag may reside. As shown in Fig. 1, the seat 30 of the bag chair is inclined slightly downwardly and forwardly, or in other words, downwardly from the rear portion of the chair toward the front, a construction which materially aids in discharging the bag when the chair is tilted. However, this is not essential in instances where the tilting alone is sufficient to cause the discharge. Nevertheless, the inclination of the seat 30 does aid in this action. This inclination may be effected as shown by simply forming the ears 7 at the desired angle to the bag chair or by casting the seat at the predetermined angle with respect to the rest of the chair, though it may also be accomplished by constructing the machine so that its upper portion is located as shown in Fig. 1, while its lower portion including the pivot 11 and the parts carried thereon are moved slightly rearward, or to the left in this figure, thus inclining the arms 6 and 17.

The slot 31 is preferably formed with side walls 32 which flare downwardly and outwardly and are connected between their lower ends by a bottom wall 33 one purpose of this construction being to provide for ready positioning of the bags with respect to the chair and at the same time to permit the formation of openings 34 in the bottom of the slot for the escape of dust which is apt to settle therein when bags are being filled with materials such as cement, which openings do not interfere with the bags as they are being put in place. It will be appreciated that in order to make most efficient use of the machine and also of the operator's time, each bag must be put in place rapidly. Hence, the construction of the chair so as not to interfere with or impede this operation is important, and it has been found that the slot with tapered walls aids in guiding the bags into proper position. Moreover, it is natural and convenient for the operator, in fitting the valve opening in the bag over the spout, to incline the bag so that the valve is somewhat lower than the other top corner. The lower edge of a paper or other relatively stiff bag is similarly inclined in this operation, and accordingly the lowermost corner of the bag would be apt to catch in any unevenness in the slot. Thus, openings in the bottom of the slot would ordinarily tend to interfere with or at least delay the bag positioning operation. However, by means of the flanged walls, the bag is guided centrally of the slot by the walls at the narrow portion of the slot, while the wide portion of the slot provides for openings 34 adjacent the juncture of the walls and bottom of the slot and clear of the bag.

Although the seat of the chair is inclined forwardly, I prefer to construct the bottom of the slot with an opposite incline, or in other words, downwardly towards the rear of the bag chair. This construction is advantageous in aiding the operator in putting the bags in place easily because, as indicated above, the bags are generally tipped so that their upper and lower edges incline downwardly away from the operator, as their valves are placed over the spout. It is particularly important where the bag is jogged, because the jogging tends to displace the bag, especially before the top of it is clamped, and the inclined bottom of the slot serves to prevent this action.

For a number of reasons not necessary to be enumerated here, it is highly desirable that bag filling machines include several units, generally three or four, for operation by a single attendant who should not be required to move around more than necessary. In Fig. 2, I have shown a machine including four bag chairs, each for cooperation with a filling unit as illustrated in Fig. 1. I have found that when the operator is placing bags on a number of units, his work is simplified and speeded up if the slots in the bag chairs are extended diagonally laterally from the front of the chairs to the back, preferably so that the ends of the slot are on opposite sides of the spout. Contrary to expectations, this slot construction does not interfere with the filling of the bag or with its location on the spout. For instance, the operator standing on platform 27 and leaning against back rest 28 can take a bag from pile 41 on table 40, and place it on the left-hand unit in Fig. 2. In this way he finds it natural and convenient to have the slot diagonally located, as shown. He next takes another bag from pile 41 and places it on the unit next to the left, this slot being also suitably inclined to accommodate the bag as the operator naturally reaches forward with it. So also, with the unit next to the right-hand end. For the unit at the right-hand end the operator may take a bag from the pile 42 on the other end of the table. It will be noted that in this construction, at least one of the slots is extended diagonally in one direction, while the other slots take the opposite direction and it will be appreciated that this simplifies the motions of the operator considerably.

In constructing the bag chairs in accordance with the invention they may be cast as a single piece, including the ears. In other words, the seat, bottom wall of the slot, and side walls of the slot as well as the means for securing the chair to the machine may all be integral. In this way a simple, sturdy construction is obtained.

The terms and expressions which I have employed are used as terms of description and not of limitation, and I have no intention, in the use of such terms and expressions, of excluding any equivalents of the features shown and described or portions thereof, but recognize that various modifications are possible within the scope of the invention claimed.

I claim:

1. In a machine for filling bags, a supporting chair for the bag including a slot formed therein, and a bottom below the slot sloping toward

the rear of the chair, the slot as a whole extending diagonally from front to rear.

2. In a machine for filling bags, a supporting chair for the bag including a slot formed therein, downwardly diverging walls forming sides of the slot, and a bottom below the slot sloping toward the rear of the chair, the slot as a whole extending diagonally from front to rear.

3. In a machine for filling bags, a chair for supporting the bag including a seat portion having a slot formed therein and a bottom below the slot sloping from front to rear of the chair.

4. In a machine for filling bags, a chair for supporting the bag including a seat portion having a slot formed therein and a bottom below the slot sloping from front to rear of the chair, the seat sloping in the opposite direction.

5. In a machine for filling bags with finely divided material, a bag support including a seat having a slot formed therein, walls extending downwardly from the seat at the sides of the slot a bottom joining the lower ends of the walls, and openings in the bottom adjacent the walls.

6. In a bag filling machine, a bag-supporting chair having a slot formed therein, downwardly diverging walls forming sides of the slot; a bottom joining the walls of the slot, and said walls diverging to a substantial degree.

7. In a bag filling machine having a plurality of units each including a spout for discharging material into a bag, a chair for supporting each bag and provided with a slot, the slot in the chair at one end of the machine extending diagonally from front to rear toward that end of the machine, and the slot in the chair at the other end of the machine extending diagonally from front to rear toward that end of the machine.

8. In a bag filling machine, a chair for supporting the bottom of a bag and including a seat portion, a slot formed therein, downwardly extending walls at either side of the slot, and a bottom joining said walls and inclined from front to rear of the chair.

9. In a bag filling machine, jogging means to support the bottom of a bag for filling and including a bag chair adapted to tilt for discharging the bag, said chair having a seat portion, a slot formed therein, downwardly extending walls at either side of the slot, and a bottom joining said walls and inclined from front to rear of the chair.

10. In a bag filling machine, jogging means to support the bottom of a bag for filling and including a bag chair adapted to tilt for discharging the bag, said chair having a seat portion, a slot formed therein, downwardly extending walls at either side of the slot, and a bottom joining said walls and inclined from front to rear of the chair, said seat portion being inclined in the opposite direction.

11. In a bag filling machine, a bag chair having a seat portion with a slot formed therein, downwardly diverging walls forming sides of said slot, and a bottom joining said walls below said seat portion, said chair having dust escape openings communicating with said slot below said seat portion and laterally displaced with respect to the edges of the slot in said seat portion.

12. In a machine for filling bags, a bag chair having a seat portion inclined downwardly from the rear to the front of the chair, said seat portion having a slot formed therein, downwardly extending diverging walls forming sides of said slot and a bottom joining said walls beneath said seat portion and sloping downwardly from the front to the rear of the chair.

13. In a machine for filling bags, a bag supporting chair having a seat portion inclined downwardly toward the front of the chair when in bag filling position.

14. In a bag filling machine, a bag chair having a slot formed therein, downwardly extending walls for said slot, a bottom joining the lower portion of the walls of the slot, said bottom substantially exceeding in width, the width of said slot.

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