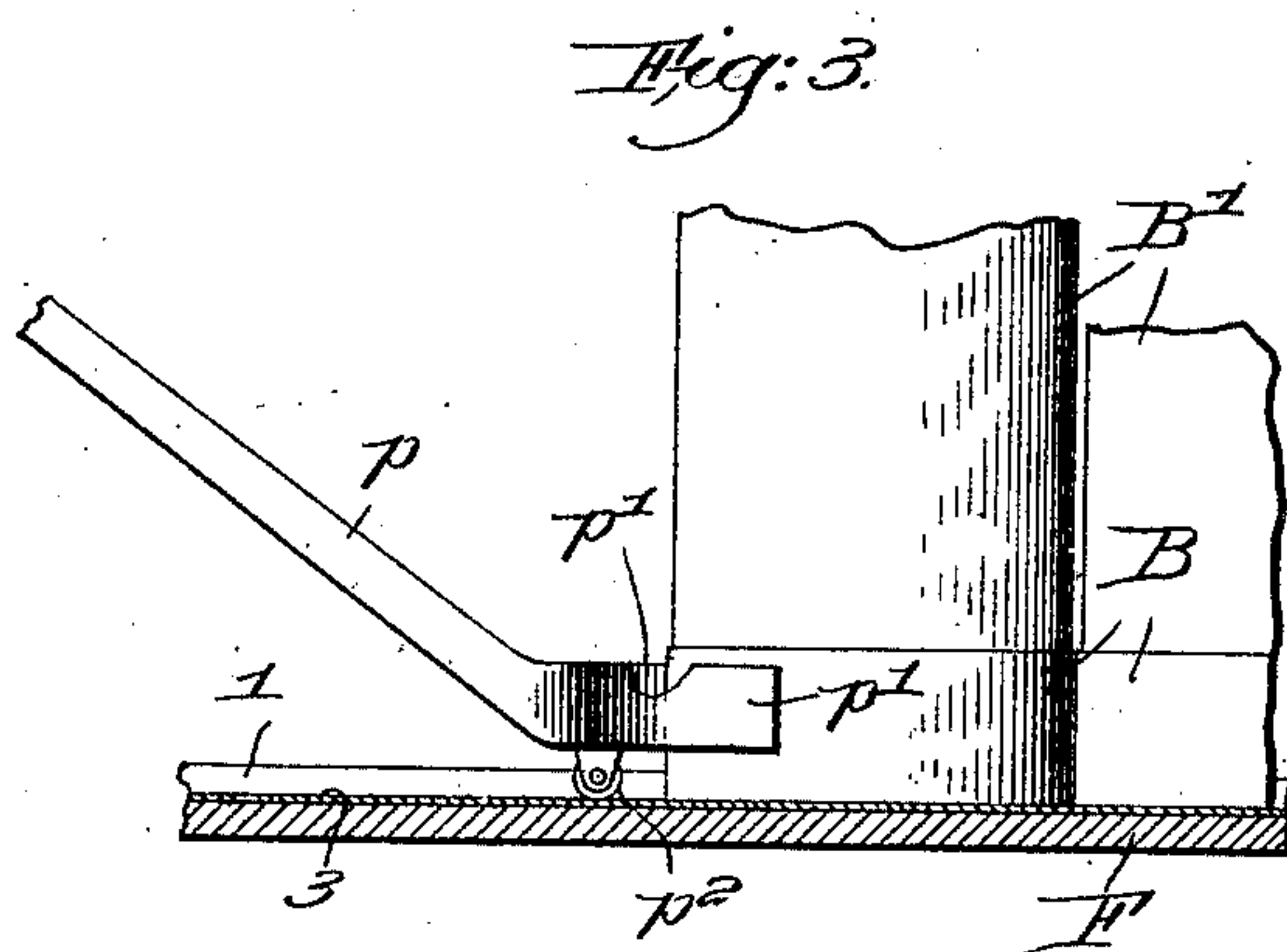
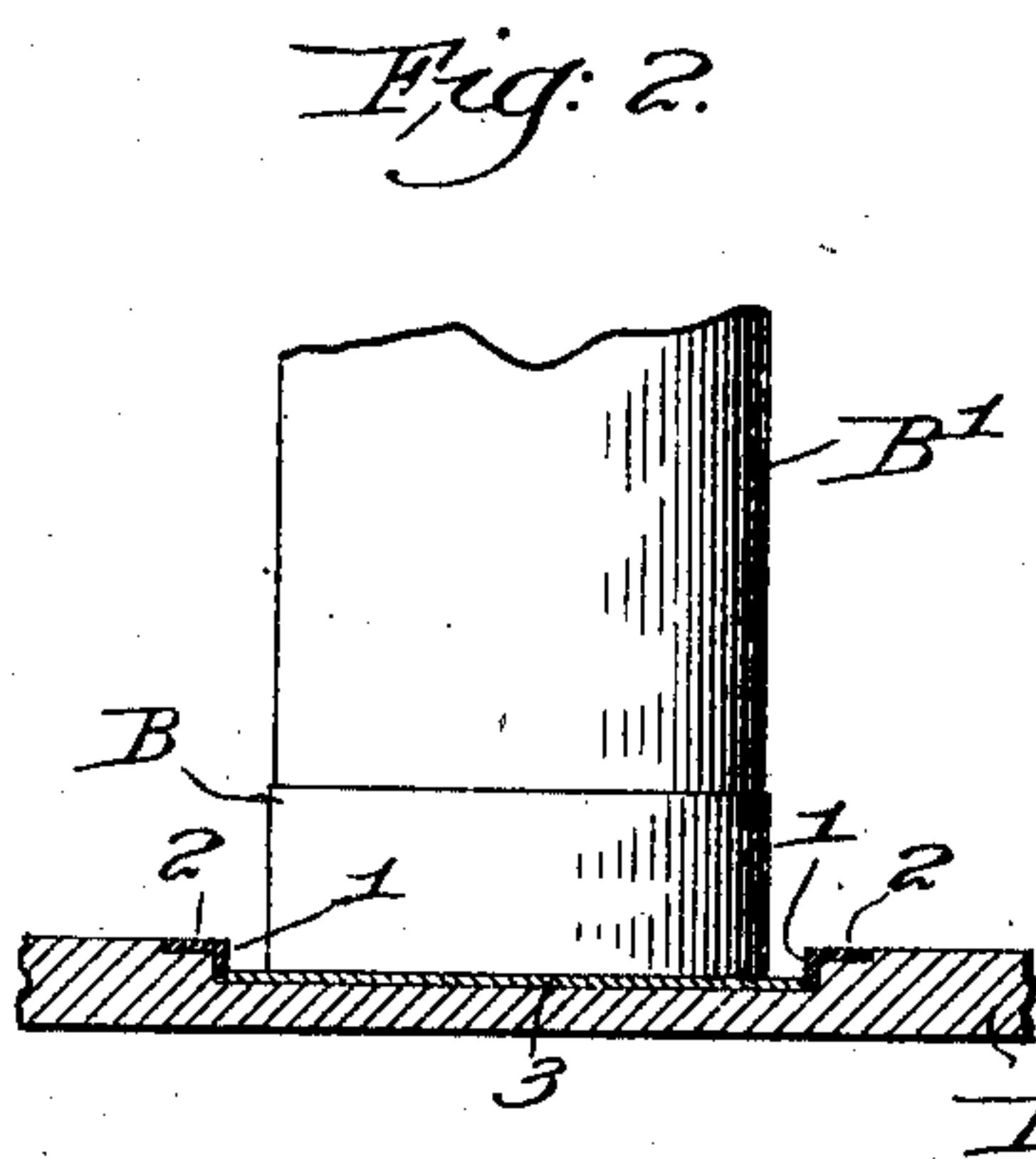
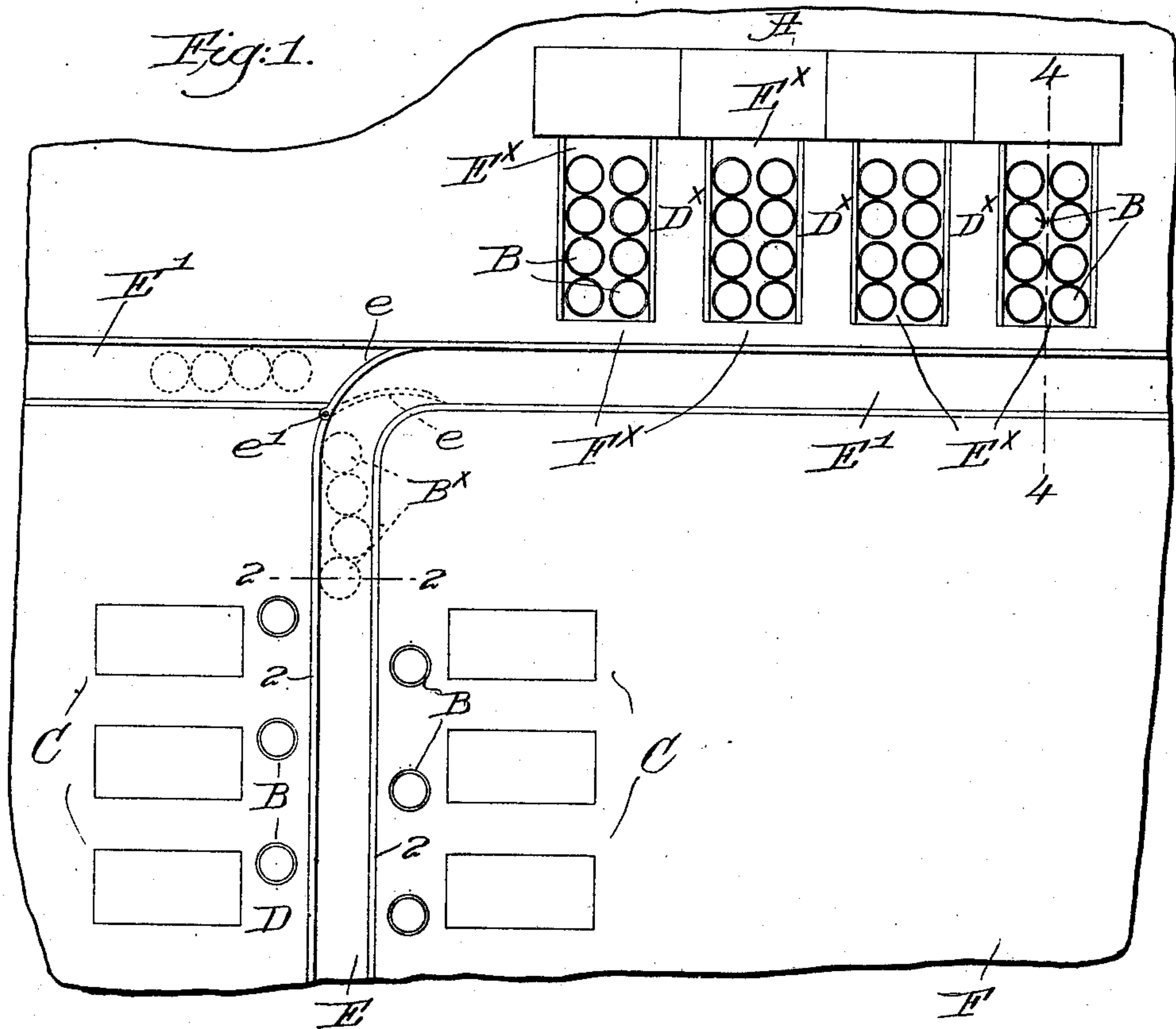


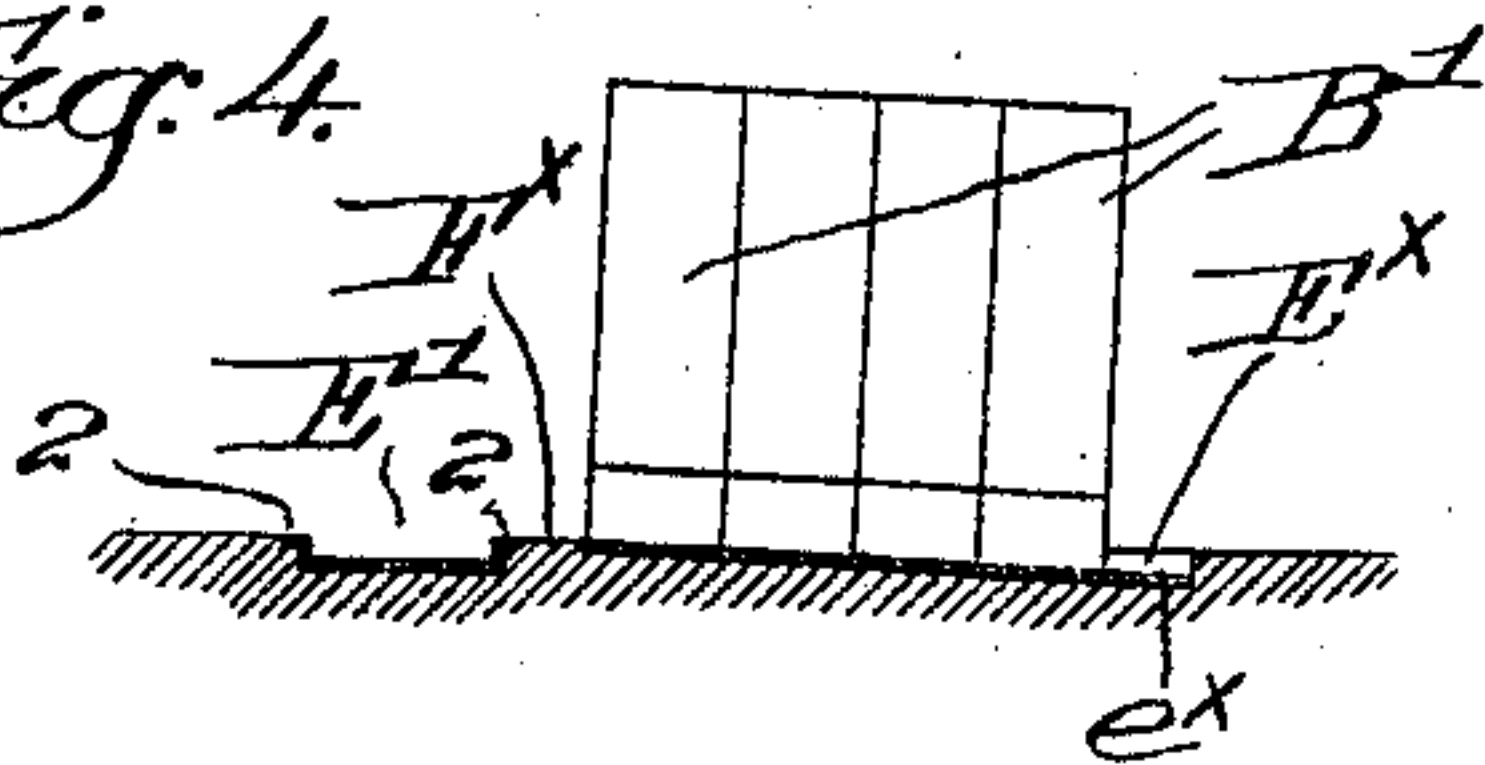
E. S. STRATTON.
 MEANS FOR FACILITATING THE HANDLING OF ROVING CANS.
 APPLICATION FILED FEB. 20, 1911.

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Patented Apr. 25, 1911.



Witnesses, *Fig. 4.*
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UNITED STATES PATENT OFFICE.

EDWARD S. STRATTON, OF MANCHESTER, NEW HAMPSHIRE.

MEANS FOR FACILITATING THE HANDLING OF ROVING-CANS.

990,678.

Specification of Letters Patent.

Patented Apr. 25, 1911.

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To all whom it may concern:

Be it known that I, EDWARD S. STRATTON, a citizen of the United States, and resident of Manchester, county of Hillsboro, State of New Hampshire, have invented an Improvement in Means for Facilitating the Handling of Roving-Cans, of which the following description, in connection with the accompanying drawing, is a specification, like letters on the drawing representing like parts.

This invention has for its object the production of means for facilitating the handling of roving cans, whether full or empty, between the carding engines and the drawing frames in a mill, it being understood that the carding engine delivers its product in the form of a sliver, which sliver is coiled in a suitable can, and thereafter these full cans are transferred to the drawing frame behind the heads, in order that the slivers from a plurality of cans may be drawn and reduced.

A drawing frame handles the product of several carding engines, ordinarily, and in large mills the handling of the cans has heretofore been attended with a great deal of labor, and more or less crowding of full and empty cans in the limited floor space, it being manifest that the larger the amount of productive machinery for a given floor area the greater will be the output. The carding engines, or cards, as they are technically termed, are usually placed in opposite rows with a relatively narrow alley therebetween, the sliver being delivered from the cards into cans located in such alley. The drawing frames are disposed at a convenient distance from the cards, and heretofore it has been customary for an operative to push or slide the full cans, one at a time, or at most two cans, over the floor from the vicinity of the cards to the drawing frames, the cans being crowded together at the latter place. Then the operative must pull out the empty cans from behind the frame, replacing them by full ones, and as a result there is usually an indiscriminate crowding of full, empty and partly empty cans behind the frames, making it difficult to remove the empty cans and still more difficult for the operative to reach over the cans to piece up broken ends.

In accordance with my invention I provide a can raceway or track, depressed somewhat below the surface of the floor and

traversing the alley between the rows of cards constituting a group or battery, such raceway or track extending behind the drawing or other frame, or frames, at a suitable distance therefrom. Short auxiliary raceways, preferably arranged in parallelism, lead from near the main raceway to points directly at the back of the heads, the auxiliary raceways being of sufficient width to accommodate at least two cans side by side, the bottom of each auxiliary raceway being slightly inclined toward the back of the frame. The main raceway is of less width, but of such dimensions that a series of cans can be pushed along simultaneously, one behind the other, from the vicinity of the cards to points adjacent the inlet ends of the auxiliary raceways. Between each pair of auxiliary raceways the floor surface forms a relatively narrow alley by means of which the operative can remove the empty cans and get them out of the way of the full cans, in readiness to be returned to the cards via the main raceway, and there is a transverse portion of flooring between said raceway and the inlet end of each auxiliary raceway. The main raceway is utilized for the transfer of both full and empty cans from card to frame, and vice versa, while the auxiliary raceways are for a number of pairs of full cans to supply the drawing frame.

As will appear hereinafter the use of trucks is eliminated, the handling of a large number of cans, full or empty, is made possible for a single operative, and not only is confusion and crowding done away with but the wear and tear on cans and floor, as well as the labor of handling, are reduced to a minimum. The use of trucks is objectionable for many reasons, as they are very difficult to handle in the narrow alleys between the cards, and they increase the wear and tear on the floor and on the cans, while the labor involved in lifting the cans on and off the trucks is a drawback.

The novel features of my invention will be fully described in the subjoined specification and particularly pointed out in the following claims:

Figure 1 is a part diagrammatic and plan view of a portion of a mill room with my invention embodied therein, a battery of cards and a drawing or similar frame being indicated diagrammatically; Fig. 2 is an enlarged transverse section of the main

raceway, on the line 2—2, Fig. 1, showing the lower portion of a roving can therein; Fig. 3 is a sectional detail, enlarged and taken longitudinally of the raceway, showing the base portions of a plurality of cans, and a convenient form of pusher which may be used when desired; Fig. 4 is a sectional detail on the line 4—4, Fig. 1, looking toward the left.

Referring to Fig. 1, F represents a portion of the flooring of a mill room, and the rectangles C represent a group or battery of cards arranged in opposite rows, with the delivery ends of the cards at opposite sides of the alley between the rows, and while I have shown six cards in the battery it is to be understood that a greater or less number may be so arranged. A drawing or other similar frame is indicated at A, Fig. 1, said frame having a set of heads each of which is herein supposed to act upon the slivers, drawn from two to ten or more cans at a time, in the present case, the cans being placed in pairs side by side behind the several heads, a four-head frame being indicated.

The usual roving or sliver can comprises a metallic bottom or base B, and a cylindrical body portion B' tightly fitting and attached to the base, Figs. 2 and 3, and of a convenient height for receiving the sliver from a card or for delivering it to a drawing frame, the body of the can usually being made of leather-board, papier mâché, or other suitable material, well known to those skilled in the textile art. In Fig. 1 the cans are indicated in plan by concentric circles, at B, and also by dotted circles, to be referred to.

The cards and drawing frames are located in the mill room in the most convenient manner for economic operation, and in Fig. 1 the frames A are arranged in a row substantially at right angles to the battery of cards C, and at a convenient distance therefrom.

When the cans back of the cards are filled with the sliver or roving they must be transferred to position behind the heads of the frames A, and empty cans must be removed from the vicinity of the frames and taken back to the cards to be again filled. In accordance with my invention for facilitating such transfer and handling of the cans I make a shallow trough in the floor of the alley D between the rows of cards constituting a battery, and in such trough a metallic raceway E is seated and suitably secured, the side walls 1 of the raceway having, preferably, lateral flanges 2, Fig. 2, which are flush with the surface of the floor. The distance between the side walls of the raceway is somewhat greater than the outside diameter of a can base B, Fig. 2, so that a can, or a group of cans, see dotted

lines at B^x, Fig. 1, can rest in the raceway and can be pushed along the same, the can bottoms sliding easily over the smooth and flat bottom 3 of the raceway. This raceway leads to or is continued at E' behind the frames A, Fig. 1, and as therein shown the raceway E' extends to the right and left from the raceway E, so that a frame or frames at the left, Fig. 1, can be supplied. A curved switch *e* is pivoted at *e'*, at the intersection of the raceways E, E', so that a group of cans, as B^x, can be pushed from the part E of the raceway to the right into the part E', while a group of cans being moved to or from another battery of cards can be accommodated by moving the switch to dotted line position.

I term the parts E and E' the main raceway, as it is the main channel for the transportation of the cans to or from the cards.

Leading at right angles from the part E' of the main raceway are a series of relatively short but wide auxiliary raceways E^x, which extend to the backs of the heads of the frame A, and I make each auxiliary raceway wide enough to accommodate a pair of cans B, side by side, or such other number abreast, as may be desired. It will be seen that the mouth or inlet end of each auxiliary raceway is separated by a transverse portion F^x of the flooring from the adjacent part of the main raceway, the bottom *e*^x of an auxiliary raceway, Fig. 4, being inclined toward the back of the frame A from the floor surface at F^x, the flooring between each two auxiliary raceways constituting an alley D^x for the convenience of the operative in handling the cans.

The operative slides the full cans over the floor of the alley D into the part E of the raceway between the cards C of the battery, and then pushes a group of three or four, or even more, of the full cans along, see dotted lines at B⁴, Fig. 1, the sliding being readily accomplished over the smooth bottom of the raceway while the sides of the latter keep the cans in a row and direct them toward their destination. As the raceway is slightly wider than the diameter of a can base the cans may be moved freely, but it is impossible for several cans to become wedged in the raceway.

If the switch *e* is set as shown by full lines, Fig. 1, the row of cans will follow the curve into the right hand portion of the raceway E', and when they reach the inlet ends of the auxiliary raceways the operative tips up the cans from the main raceway onto the flooring at F^x, in readiness to be slid over it into an auxiliary raceway E^x, two cans at a time. The slivers lead from all of the cans in an auxiliary raceway E^x, and manifestly the slivers from the pair of cans nearest the frame are drawn therefrom almost in a vertical path, while the draft

from the other cans is at an angle, increasing as the distance from the frame increases. As the draft is practically vertical from the two cans nearest the frame they may be
 5 completely emptied without causing sliver breakage, and when these leading cans are emptied they are removed to the alley D^x , the whole set of cans is pushed forward to fill up the raceway, and a pair of full cans
 10 is set in place at the outer end of the auxiliary raceway, their slivers being led to the rolls on the frame A. Consequently the greater the angle of draft from a can the more sliver therein, and this is permissible,
 15 for while a can immediately adjacent the frame may be emptied completely with very little chance of sliver breakage the breakage would be of frequent occurrence should the sliver be drawn from nearly empty cans at
 20 an angle. Thus with the progressive movement of the cans toward the frame as their contents are gradually reduced the item of sliver breakage is brought down to a minimum, and in actual practice I am enabled
 25 to save about ten per cent. of waste by the arrangement just described. The empty cans may be allowed to accumulate in the alleys D^x until the operative is ready to slide a group of them along the main raceway back to the battery of cards.

When a pair of full cans is moved into the auxiliary raceway space is left on the flooring F^x for another pair of full cans in reserve, and by slightly inclining the bot-
 35 tom e^x of the auxiliary raceway the progressive forward movement of the group of cans is facilitated, while the open tops of the cans are tilted slightly toward the frame, thereby easing the strain on the roving.

40 By the construction shown I avoid the indiscriminate crowding of full and empty, or partly empty cans, behind the frame, such crowding making it very difficult for the operative to handle the cans, while it is
 45 sometimes almost impossible to reach over and piece up a broken end until a way is made through the cans, and in place of such crowding I provide for an orderly and gradual progress of the cans toward the
 50 frame, the cans most nearly empty in all cases being nearest the frame, with the results heretofore pointed out.

Ordinarily a group of cans, full or empty, is slid along the raceway by the operative
 55 grasping the endmost can and pushing it forward, the cans ahead sliding along the bottom of the raceway and being guided by its side walls. I have, however, devised a simple and effective pusher for the pur-
 60 pose, shown in Fig. 3, and comprising an inclined handle p , a forked or crutch-shaped foot p' to partly embrace a can base B, and a truck-wheel p^2 connected with the bottom of the foot and adapted to travel along the
 65 bottom of the raceway. The operative

grasps the handle of the pusher, fits the foot of the base of the last can of a group, and walks ahead, thereby pushing the group of cans before him in the raceway to the
 70 desired point.

The lifting of full cans onto and off of trucks is eliminated by my invention, and the raceways are so shallow that but little trouble or labor is necessary to move full
 75 or empty cans therefrom onto the adjacent floor surface, as a slight tilting of the can is all that is requisite to enable it to be slid onto the floor surface whenever necessary.

Having fully described my invention, what I claim as new and desire to secure by
 80 Letters Patent is:

1. The combination with a battery of cards arranged in two parallel rows with their delivery ends inward, and sliver-treating
 85 apparatus at a distance from the cards, of a metal-lined trough-like main raceway having the tops of its side walls flush with the floor surface and extending through the alley between the rows of cards and leading
 90 thence to and behind said sliver-treating apparatus, and a plurality of auxiliary raceways leading to such apparatus from the adjacent part of the main raceway, whereby a group of full roving cans may be slid from
 95 the cards to the inlet ends of the auxiliary raceways and grouped therein in a series of rows at the back of the sliver-treating apparatus, empty cans being returned to the battery of cards by the main raceway.

2. The combination with a group of cards
 100 arranged side by side to deliver sliver at one end thereof, and a drawing frame at a distance from the cards, of a shallow, trough-like main raceway of a width slightly greater than the diameter of a roving
 105 can and extending along the row of cards at the delivery ends thereof and leading thence to the back of the frame, and a series of parallel, laterally separated auxiliary raceways having inclined bottoms lead-
 110 ing to the heads of the frame from the adjacent part of the main raceway, said auxiliary raceways being of sufficient width to accommodate a plurality of cans side by
 115 side, the roving cans being slid in groups along the main raceway from the cards to the outer ends of the auxiliary raceways, and vice versa, the side walls of the main raceway directing the cans of a group when
 120 pushed along the raceway.

3. The combination with a battery of cards arranged in opposite, adjacent rows with their delivery ends inward, and a sliver-treating apparatus at a distance there-
 125 from of a metallic main raceway traversing the alley between the rows of cards and leading to said apparatus near to the back thereof, and auxiliary raceways between said apparatus and the main raceway behind it, the auxiliary raceways being wide enough
 130

to receive a plurality of rows of roving cans two or more abreast, while the main raceway is but slightly wider than the diameter of a can, said main raceways serving to
5 guide in either direction groups of full or empty cans between the cards and sliver-treating apparatus, the floor level crossing the outer end of each auxiliary raceway between it and the main raceway, to support
10 full cans in reserve.

4. The combination with a group of cards, and apparatus for treating the sliver produced thereby, of a main raceway traversing the group of cards at the delivery end there-
15 of and leading thence to and passing behind said sliver-treating apparatus, to enable groups of roving cans to be pushed from the cards to said apparatus, and vice versa, the raceway guiding and directing the
20 movement of a group, and auxiliary raceways laterally separated from each other and leading to the back of said sliver-treating apparatus from the adjacent part of the main raceway behind it, said auxiliary
25 raceways retaining the cans until the sliver is exhausted therefrom, removal of empty

cans immediately adjacent said apparatus permitting the partly exhausted cans to be pushed inward to take their place.

5. The combination with a group of cards, 30 and apparatus for treating the sliver thereby, of laterally separated raceways leading to the back of said apparatus and each adapted to receive a plurality of roving cans, two or more abreast, during the withdrawal 35 of the slivers therefrom, removal of the empty cans immediately adjacent said apparatus permitting the whole set of cans in the raceway to be pushed forward and full cans set in place at the outer end of the race- 40 way, whereby the most nearly exhausted cans deliver their sliver closest to the apparatus, and means to facilitate the transfer of groups of cans from the cards to said
45 apparatus, and vice versa.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

EDWARD S. STRATTON.

Witnesses:

CHARLES A. PERKINS,
HOWARD I. RUSSELL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
