

Jan. 1, 1952

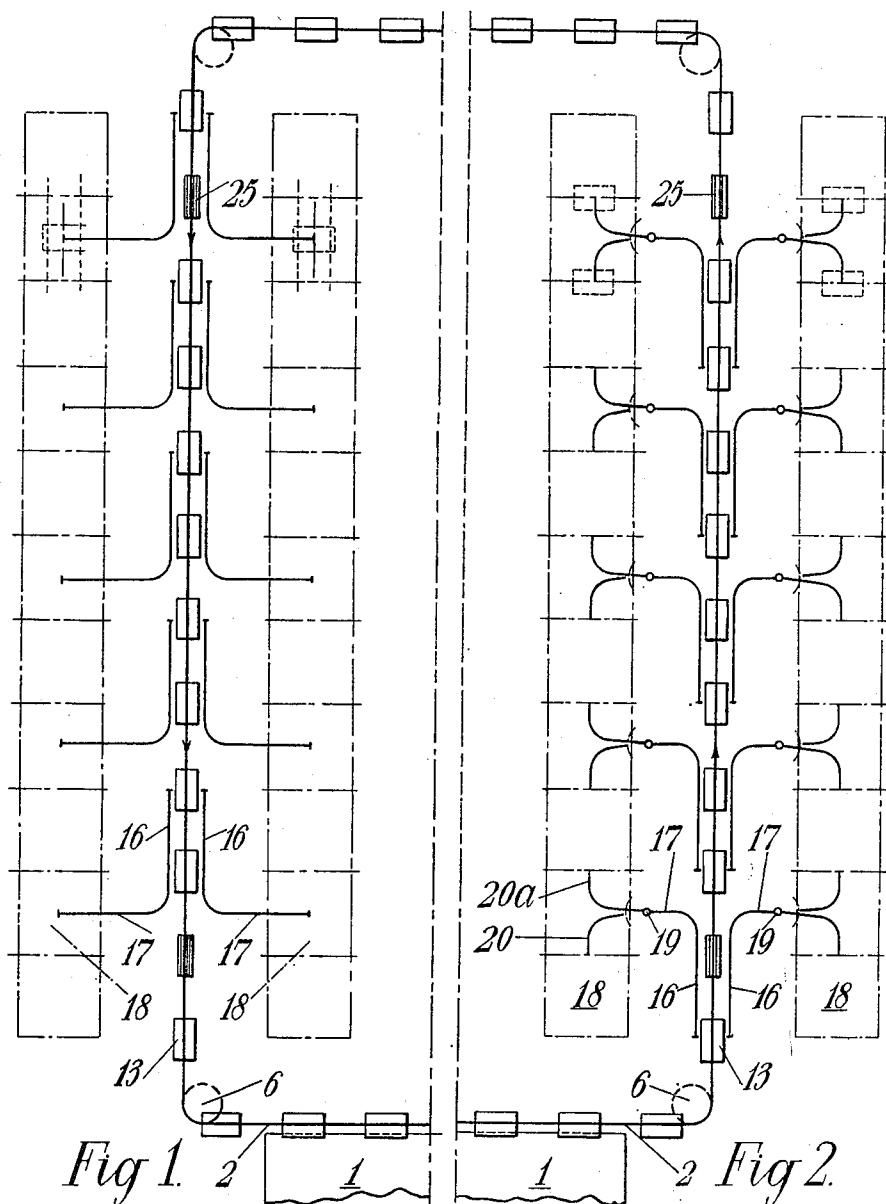
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2,580,758

TRANSFER ARRANGEMENT FOR OVERHEAD CONVEYER SYSTEMS

Filed May 3, 1949

3 Sheets-Sheet 1



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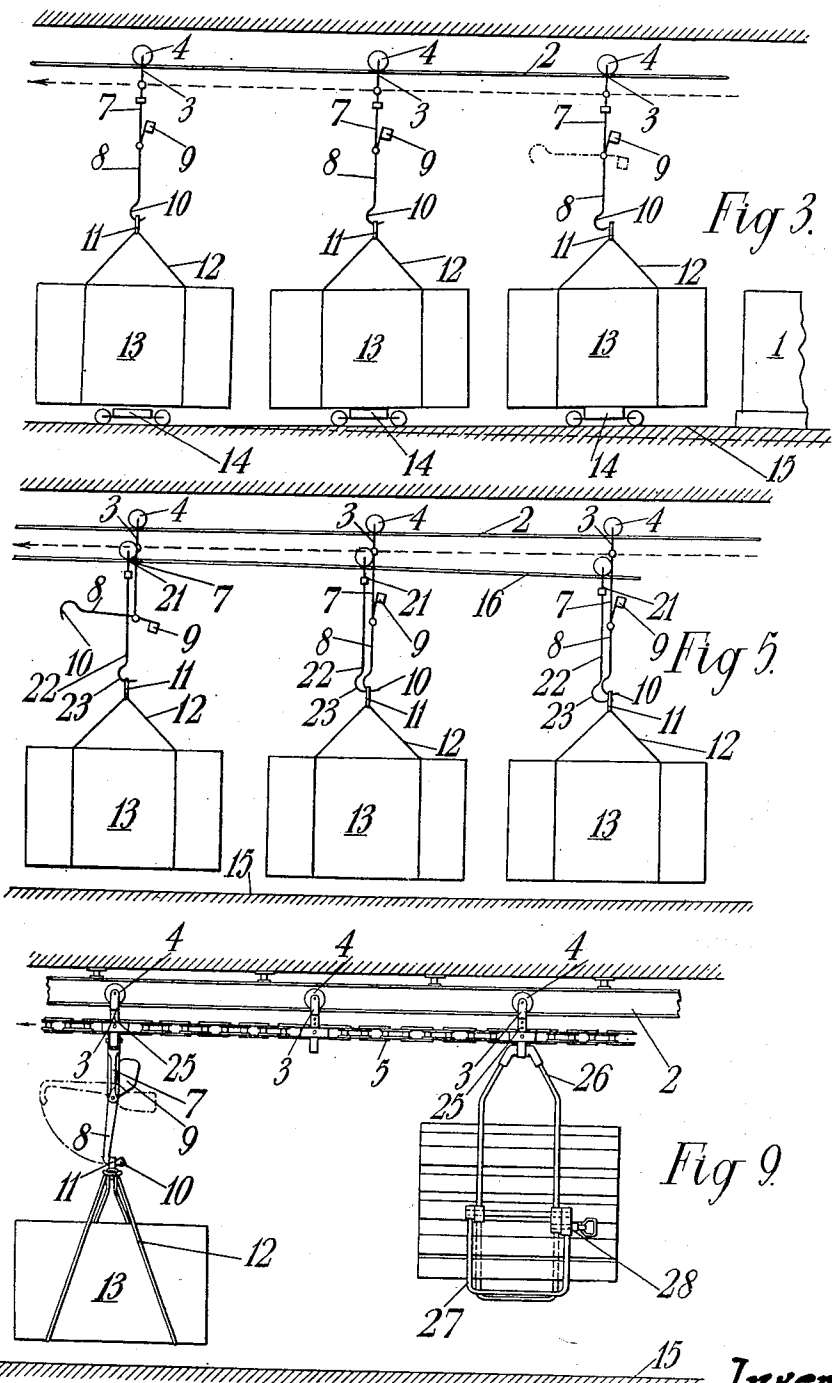
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TRANSFER ARRANGEMENT FOR OVERHEAD CONVEYER SYSTEMS

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3 Sheets-Sheet 2



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TRANSFER ARRANGEMENT FOR OVERHEAD CONVEYER SYSTEMS

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3 Sheets-Sheet 3

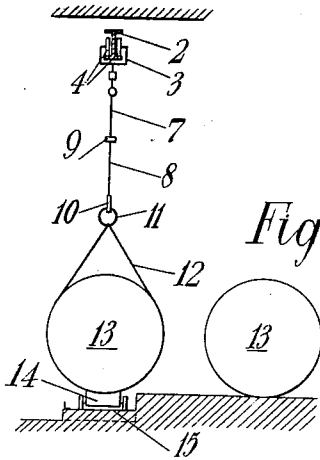


Fig. 4

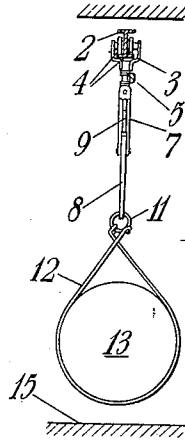


Fig. 11

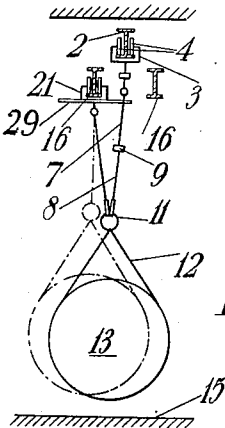


Fig. 6

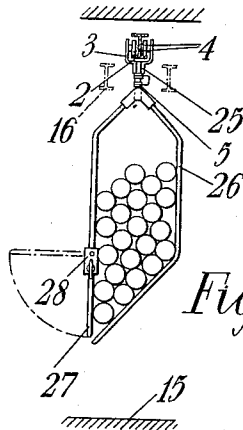


Fig. 10

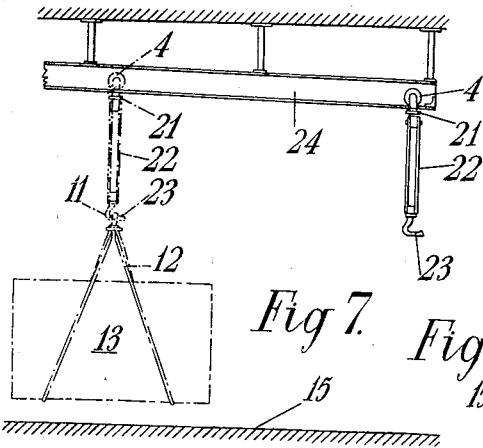


Fig. 7

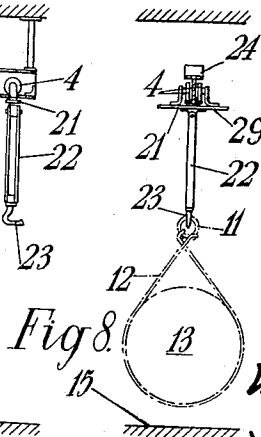


Fig. 8

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UNITED STATES PATENT OFFICE

2,580,758

TRANSFER ARRANGEMENT FOR OVERHEAD
CONVEYER SYSTEMSWilliam Gibson, London, England, assignor of
one-half to Daily Mirror Newspapers Limited,
London, EnglandApplication May 3, 1949, Serial No. 91,112
In Great Britain May 4, 1948

2 Claims. (Cl. 198—177)

1

This invention relates to conveying mechanism for supplying reels of paper to the magazines of printing presses and the like.

The present practice in supplying reels of paper to the magazines of printing presses is, speaking generally, to place the reels on bogies at the ends or other suitable positions adjacent to the lines of presses and then push the reels by hand to the particular magazine unit at which it is required; expired ends of reels and waste paper are loaded on an empty bogie and returned by hand to certain places for bundling and returning to the pulping mills.

In printing offices used for a newspaper with a large circulation the number of magazines and reels of paper used correspondingly great, needing long lines of presses.

The object of the invention is to provide a conveyor system whereby the heavy labour involved in dealing with such large quantities of reels is reduced.

The invention consists in a conveyor system comprising a continuous or closed overhead track supporting a plurality of bogies from certain of which are suspended pivotally mounted elements furnished at one end with a counterweight and at the other end with hook, each adapted to engage a sling passed about a reel and at points in the length of the continuous overhead track, additional overhead tracks supporting bogies from which are suspended hooks, such additional tracks each including a portion extending in a direction generally parallel with the adjacent portions of the first-mentioned track and inclined to the horizontal, so that the bogies supported thereby, and thus the hooks suspended from the bogies will be progressively raised vertically when moving in one direction, so that such a hook when engaged with a sling extending about a reel and supported from the first-mentioned track will take the load of the reel and release it from the hook by which it was supported from the first-mentioned track, thereby allowing this hook to move about its pivotal connection under the action of a counterweight.

For facilitating the engagement of the slings encircling the reels, on the floor which is preferably inclined adjacent to the position at which the reels are loaded on the bogies, there are provided trucks on to which the reels are in the first place loaded and which are caused to travel in the direction of the continuous overhead track, so that by the passage of the trucks over the inclined surface and by holding the loop or eye of the sling in position with respect to one of the

2

pivotally mounted hooks, the weight of the reel will be taken up by the hook and the reel unloaded from the truck.

In such a system means is preferably provided for removing the ends of the reels and other waste and the like, also suspended from a bogie running on the continuous overhead track.

Preferably, the bogies running on the continuous overhead track are connected one with the other by means of chains or other flexible connections and one or some of these bogies may be furnished with electric motors provided with means for picking up current from an overhead conductor. Preferably however the chains or other flexible connections are in driving engagement with sprockets or pulleys, one or certain of which are driven by a motor or the like.

A typical arrangement, in accordance with the invention, comprises a continuous or closed overhead track which is in effect four sided, two of the sides, namely, the longer sides, being located each between two banks of presses, a storage and loading platform being arranged adjacent to one of the shorter sides.

Each of the additional tracks comprises at least one portion or branch extending away from the first-mentioned track and into a position appropriate for depositing the reels adjacent to the magazine to be served by it.

Thus, each of such additional tracks may be formed with two branches with which is associated a switch so that the reel can be carried by one or other of the branches into the appropriate position for loading it.

The branches or each of them may comprise a portion which is inclined downward so that in travelling over this portion the hooks suspended by the bogies running on this track will be lowered to a degree such that the reel will be supported on the floor or on a truck in turn supported on the floor and the hooks become released from the sling when the reel is so supported.

The slings may each be provided with an eye formed to facilitate the transfer from a bogie on the closed continuous overhead to a bogie on one of the additional tracks. Thus the eye may be of generally triangular form secured by one of its apices to a sling.

The invention will be described further in detail and by way of example with reference to the accompanying drawings in which:

Figure 1 is a diagrammatic half plan view of one arrangement in accordance with the invention;

Figure 2 is a similar view showing an alternative arrangement;

3

Figure 3 is a fragmentary view showing the tracks and generally the operation of engaging a reel with the mechanism;

Figure 4 being a diagrammatic view in a plane at right angles to the plane of view of Figure 3;

Figure 5 being a corresponding view illustrating the transfer of a reel from the main track to one of the subsidiary tracks;

Figure 6 being a view in a plane at right angles to the plane of view of Figure 5;

Figures 7 and 8 are respectively views in side and end elevation of a portion of a branch track;

Figure 9 is a view in elevation of a portion of the main track showing a reel engaged and supported from a trolley and a reel core hopper which is shown in end elevation in Figure 10;

Figure 11 being an end elevation of a trolley on the main track and carrying a reel.

In Figures 1 and 2, 1 is the bank or platform to which the reels are supplied, 2 the main overhead track which as may be seen from Figures 4, 6, 9, 10 and 11 is in the form of an I beam supporting a plurality of bogies 3 furnished with wheels 4 and connected one with the other by a chain 5 as shown in Figure 9 passing over sprockets 6 represented diagrammatically in Figures 1 and 2, one or all of these sprockets being driven from some appropriate source of power to impart motion to the chain.

From the bogies are suspended by links 7 pivotally mounted elements 8 each furnished at one end with a counterweight 9 and at the other end with a hook 10 adapted to be engaged by an eye 11 to which is connected a sling 12 passing about a reel 13, the reels which are initially loaded on trucks 14 running on a floor 15 which is, as shown in Figure 3, inclined downward from the platform 1.

As the truck leaves the platform the hook 10 is entered in the eye and as the truck descends the weight of the reel is increasingly taken by the hook until, when the truck reaches a level portion of the track, it is entirely supported by the hook.

In addition to the main track there are provided subsidiary tracks which also are I beams comprising a portion 16 extending parallel with the main track and a portion 17 extending generally at right angles thereto into positions 18 where the presses to be served or supplied with the reels are located.

In the arrangement shown in Figure 2 there are provided switches 19 on the arm 17 so that the reels may either be caused to travel to the branch 20 or to the branch 20a. On these branch tracks run trolleys 21 from which depend links 22 furnished with hooks 23.

In order that the reels may be transferred to the trolleys on these branch tracks, the portion 24 of each of the branch tracks is inclined downward as shown more clearly in Figure 7 so that a hook 23 supported from a trolley 21 on a branch track 16 may be entered in the eye with which a sling is connected.

As the eye, in which the hook in question has been entered, is moved in the direction shown by the arrow in Figure 5, it will move upward consequent upon the upward motion of the trolley with which it is connected, due to the inclination of the portion of the track in question, until the load of the reel is wholly taken by this hook when the hook element 10 will move about its pivotal connection under the action of the counterweight and become completely released from

4

the eye, thereafter the trolley on the branch track carrying the reel may be moved into a position in which the reel may be deposited adjacent to the press to be served.

On the main track is supported a core-holding trolley 25, a hopper comprising a framework 26 furnished with a hinged flap 27 and a locking member 28 adapted releasably to engage the flap in position to retain the reel cores introduced into it and which are carried forward to a discharge portion which may be some portion of the platform 1.

The form and construction of the eye and the mode of connecting the sling to it must be such that in their travel the reels will be maintained with their axes parallel with the portion of the track by which they are supported.

The operation of the system above described is as follows:

The reels will be loaded from the bank or platform above referred to on to the overhead track by engaging the hook on each of the bogies thereon with an eye provided on a sling extending about a reel.

The bogies on the main track will be maintained continually in motion and as the reels travel along the main track, an operator desiring to put a new reel in a magazine of a press, will run one of the bogies on the subsidiary track into a position in which the hook suspended from the bogie may be engaged in the eye of a sling, the subsidiary track being furnished with a portion which is inclined downward to facilitate this operation.

The hook having been inserted for some distance, bogie on the main track in moving forward will carry the bogie on the subsidiary track along with it by means of an arm 29 provided on the trolley 21 on the subsidiary track.

As the bogie on the subsidiary track is thrust forward it will rise up the incline provided on the track and when it has reached the horizontal portion of the track the weight of the reel will have been transferred from the bogie on the main track to the bogie on the subsidiary track. The operator is then able to push the reel supported by the bogie on the subsidiary track and insert the reel into the magazine or lower it on to a truck on the ground.

The means for loading the reels on to the bogies on the main or closed overhead track has already been described.

The used slings may be returned to the loading bank or platform by slinging them on the empty hook suspended from a bogie on the main track or they may be placed in a hopper such as is provided for transporting the reel centres, wrappings and waste paper. This hopper may be provided with a door adjacent to its base to facilitate unloading its contents, and it may be arranged to be lowered to the ground or on to a bogie.

I claim:

1. Conveying mechanism for supplying reels of paper to the magazines of printing presses and the like, comprising a continuous or closed overhead track supporting a plurality of bogies from certain of which are suspended pivotally mounted elements furnished at one end with a counterweight and at the other end with a hook, each adapted to engage a sling passed about a reel and at points in the length of the continuous overhead track, additional overhead tracks supporting bogies from which are suspended hooks, such additional tracks each including a portion extending in a direction generally parallel with

5

the adjacent portions of the first-mentioned track and inclined to the horizontal so that the bogies supported thereby, and thus the hooks suspended from the bogies, will be progressively raised vertically when moving in one direction, so that such a hook when engaged with a sling extending about a reel supported from the first-mentioned track will take the load of the reel and release it from the hook by which it was supported from the first-mentioned track, thereby allowing this hook to move about its pivotal connection under the action of a counterweight, the movement of a bogie on a subsidiary track alongside a bogie on the main track being effected by engagement of one of the bogies with an arm provided on the other bogie.

2. Conveying means as claimed in claim 1, in

6

which the bogies running on the continuous overhead track are connected one with the other by means of chains or other flexible connections.

WILLIAM GIBSON.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,335,790	Ransburg	Nov. 30, 1943

FOREIGN PATENTS

Number	Country	Date
445,199	Germany	June 4, 1927