

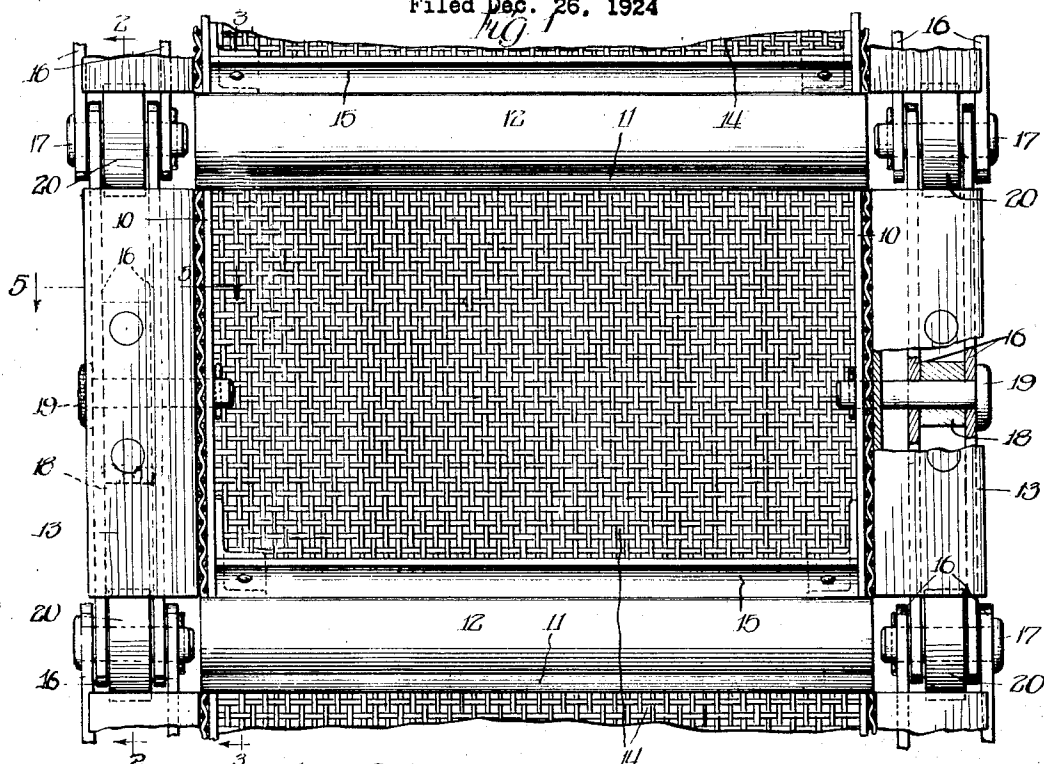
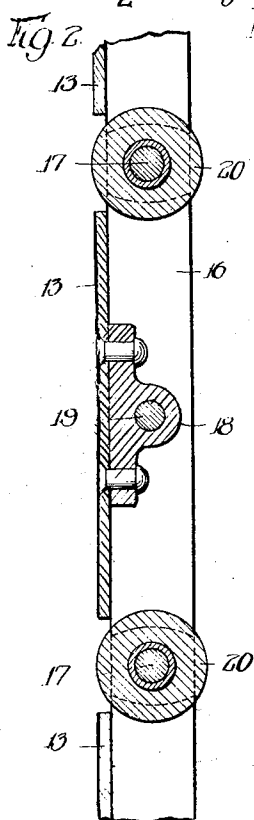
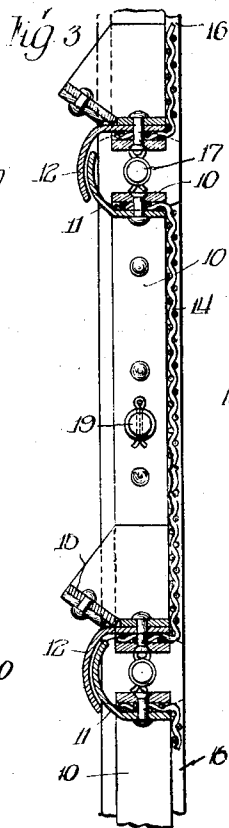
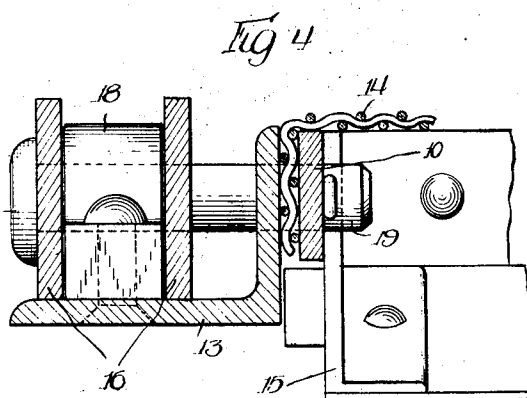
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1,564,451

B. SCHROEDER

TRAVELING SCREEN

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UNITED STATES PATENT OFFICE.

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TRAVELING SCREEN.

Application filed December 26, 1924. Serial No. 758,047.

To all whom it may concern:

Be it known that I, BERNHARD SCHROEDER, a citizen of the United States, and resident of Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Traveling Screens, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

My invention relates to an improvement in traveling screens such as are employed in electric power plants, industrial establishments, and sewage disposal plants for screening the water passing through the intake flumes or other large flows for removing ice, fish, leaves and twigs, and other undesirable debris.

Such traveling screens are customarily arranged with their side edges juxtaposed and at their ends are connected with links which form a double-link chain at each side of the screen. In these double-link chains the links are of course arranged in pairs but because the screens are secured directly to each link of the chain, the individual links of each pair have not worn evenly with the result that frequent replacements are necessary. One object of my invention is the provision of a traveling screen of this type wherein the screens are carried directly by both links of the pairs whereby the wear can be equalized and the life of the links prolonged.

Another object of the invention is the provision of a single connecting member for securing the end of the screen to the chain in such a manner that an individual screen may easily be removed from the screen without the need of pulling the chain out of its normal alignment or disturbing the pivots of the chain. I also contemplate a means of attachment for the ends of the screen whereby a single connecting member at each end of the screen is used to secure the screen to both links of the chain so that the two connecting members, one at each end of the screen, are all that need be used to secure the screen to the chain or effect its removal.

These and further objects of my invention will be best understood from the following description of a particular traveling screen

construction which embodies the invention. This is illustrated in the accompanying drawings wherein,

Figure 1 is a front elevation of a portion of a vertically disposed traveling screen showing one screen unit and portions of the adjacent screen units;

Figure 2 is a longitudinal section taken along the chain on the line 2—2 of Figure 1;

Figure 3 is a longitudinal section similar to Figure 2 but taken through the screen along the line 3—3 of Figure 1, and

Figure 4 is a transverse horizontal section taken along the line 5—5 of Figure 1 transversely of the chain and showing the attachment of the screen thereto.

The screen members are formed by rectangular frames 10 having guard strips 11 and 12 clamped along the upper and lower sides of the frame respectively and angle strips 13 secured by rivets or other suitable means along the ends of the frame. A piece of screening 14 which may be either wire or punched metal is secured to the downstream side or back of the frame and has forwardly bent upper and lower marginal flanges which project between the sides of the frame and the guard strips 11 and 12 respectively and are clamped therebetween as shown in Figure 3. Similarly the ends of the screen 14 are bent forwardly and clamped between the ends of the frames and the angle strips 13. Narrow obliquely disposed buckets 15 are preferably provided along the bottom edges of the screen units to carry up pieces of debris which do not adhere to the screens.

The chains which extend along the sides of the row of screen units and at the ends of the individual screens, are formed from pairs of spaced links 16 connected by pivot pins 17 opposite the spaces between the juxtaposed sides of the screens so that the distance between pivots on the chain is the same as the distance between similar points on the successive screen units. There is thus one screen unit for each successive pair of links along the chain.

As shown in Figure 4 the outwardly projecting flange of the angle strip 13 lies

against and along the forward edges of the links 16. Midway between its ends the strip 13 carries a block 18 resembling a bearing block which is riveted to the outwardly projecting flange of the angle strip and which projects between the spaced links. A short locking pin 19 passes through aligned holes in the links and the block 18 and preferably extends also through aligned holes in the opposed flange of the angle strip 13, the forwardly bent edge of the screen 14 and the adjacent side of the frame 10. A cotter pin holds the locking pin 19 against longitudinal displacement.

When the locking pin 19 is in place the angle strip 13 is held against the links so that the links are in effect rigidly fixed to the screen and there can be practically no movement of the links independently of the screen or independently of one another. The weight or other resistance caused by the screen unit is therefore carried equally by the two links, particularly as regards their points of wear at the pivot pins. It will thus be seen that by fixing both links of each pair rigidly to the screens, any twisting or play of the links is prevented and their bearings for the pivot pins are kept aligned as well as being given equal loads to carry. This construction will cause the links to wear more evenly and prolong the life of the chain generally as well as eliminate the necessity of frequently replacing individual links which have become defective by excessive wear.

When a particular screen and its frame is to be removed for repair or to permit replacement it is not necessary to pull the chain out of its normal alignment nor in any other way to disturb the chain. The locking pins 19—one at each end of the screen unit—are withdrawn and the screen is then free to be lifted out of its place. I prefer to extend the locking pin 19 through the frame 10 as it makes the cotter pin more accessible, and facilitates driving the locking pin out. I contemplate, however, that instead of extending through the adjacent side of the frame the locking pin 19 can terminate between the inner link 16 and the adjacent flange of the angle strip 13 and the cotter pin be inserted in the space therebetween.

It is also to be pointed out that although the block 18 is disposed between the links 16, it is located midway between the chain pivots 17 and is not long enough to interfere with the sprocket wheels over which the traveling screen passes and which engage the rollers 20 mounted on the pivot pins 17 between the spaced links.

The guard strips 11 and 12 at the upper and lower sides of the screen units are conformed to telescope arcuately as will be seen from Figure 3 to prevent the passage of

water or débris through the spaces between the juxtaposed edges of the screens. It will be understood of course that for the sake of clearness the guideways in which the chains travel have been omitted from the drawing and that in practice the forward flanges of the guideways will extend over the chains substantially as far as the ends of the screens 14 for precluding the passage of water or débris around their ends or past the chain pivots.

While I have thus described one particular embodiment of my invention, I contemplate that changes may be made therein without departing from the spirit and scope of my invention.

What I claim is:

1. A traveling screen comprising a pair of spaced double-linked chains, a row of frames disposed between the chains, screens on said frames, and means for securing the screens on the frames and for securing the screens and the frames to the chains comprising bars having outwardly extending flanges on the ends of the screens which flanges lie against the lateral edges of adjacent pairs of links, attaching members secured to the flanges and disposed between the links, and pins passing through said members and both links of each double-link for rigidly but detachably securing the screens to the chain links.

2. A traveling screen comprising in combination, a pair of spaced chains wherein the links are arranged in pairs to form double-linked chains having rollers therebetween for engagement with the means for pulling the chain, a row of frames disposed between the chains, screens on said frames, brackets disposed on the ends of said frames adjacent the chains, and connecting members for detachably fixing the brackets to both links of pairs of links in the adjacent chains, said connecting member passing through said frame, whereby the screen frames will be borne substantially equally by the individual links in the pairs of links.

3. A traveling screen formed by a plurality of screen units arranged in a row to form a belt; each unit comprising a screen member supported in a frame, outwardly extending flanges at the ends thereof, pairs of spaced links arranged at the ends of the screen members with their lateral edges lying against the flanges, projections on the flanges extending between the spaced links of the associated pairs, and locking pins at the ends of the screen members passing through the frame the associated projections and spaced links intermediate their ends for fixing the links to the screen; and pivot pins for connecting the ends of successive pairs of links to form lateral chains.

4. A traveling screen comprising a rectangular frame, a screen flanged to fit over

said frame, bars having projecting guards secured to the sides of said frame, a flanged member secured at each end of said frame, said bars and members holding the screen 5 to said frame, pairs of spaced links adjacent the ends of said screen, a bracket fixed to each of said frame members and fitted between said links, and removable pins for securing said frame to said links, said pins passing through said links, brackets, flanged 10 members and the ends of said frame.

In witness whereof, I hereunto subscribe my name this 16th day of December, 1924.
BERNHARD SCHROEDER.