Feb. 16, 1932. S. B. CLARK 1,845,127

CONVEYER MECHANISM

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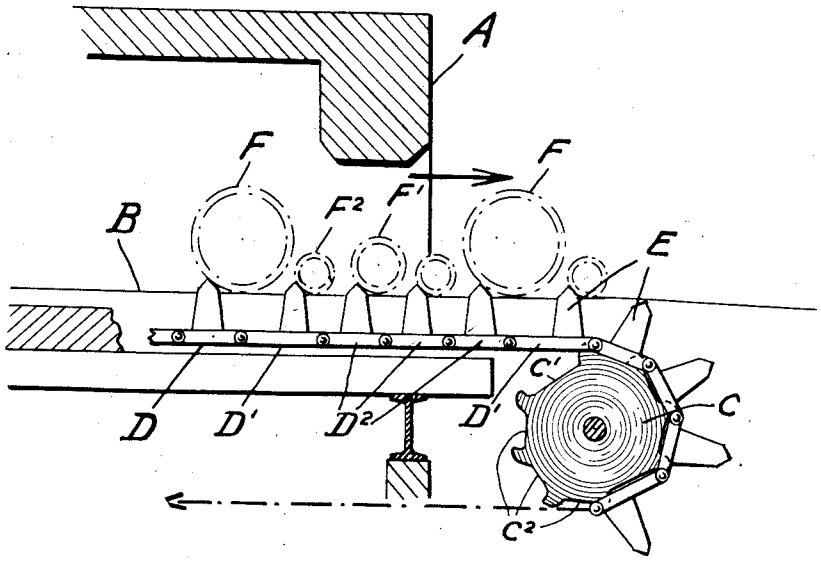


FIG. 2.

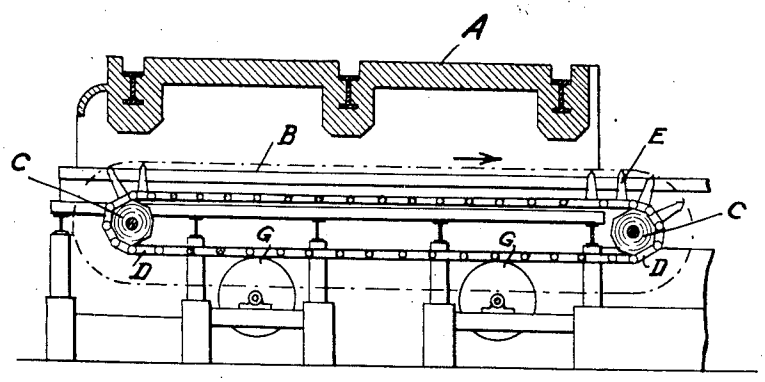


FIG. 1.

WITNESS:
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UNITED STATES PATENT OFFICE

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CONVEYER MECHANISM

Application filed December 9, 1930. Serial No. 500,991.

My invention relates to conveyer mechanism of the type in which an endless chain or chains are provided with mechanism extending from the links of the chain and adapted to engage and propel articles to be transported, and particularly my invention is designed for use in connection with pipe annealing furnaces although, obviously, it is capable of quite general application.

As heretofore constructed, endless chains used in connection with conveyer apparatus have been made up of links of similar length and provided with sprocket wheels the chain engaging faces of which are conformed to engage the similar links of the chain and where such chains are used in connection with pipe annealing or similar furnaces each link has extending from it fingers which in operative positions extend, through the bottom of the furnace to a level above that of the runways upon which the pipes are supported so that these fingers engage pipes supported on the runways and propel them progressively through the annealing furnace. The fingers extend, one from each link of the conveyer chain, and are evenly spaced which is an entirely satisfactory arrangement where pipes of similar diameter are to be conveyed, but where pipes to be annealed vary very considerably in diameter the spacing of the fingers must of course be such as will enable the conveyer to be used with the larger sized pipes which space is of course unnecessarily large for the pipes of smaller diameter thus limiting the capacity of the furnace to handle groups of pipes of large diameter. The object of my invention is to construct the conveyer chain mechanism as to enable it to handle groups of pipe of large and small diameter with maximum efficiency and economy of space and my invention consists essentially in constructing a conveyer chain of multiple pitch, that is to say, of successively disposed groups of links each group consisting of links of varying length and of providing sprocket wheels the link engaging faces of which are of similar multiple pitch, that is to say, are shaped to conform to the groups of links of uneven length. From each link of my multiple pitch chain I extend a conveyer device in the case of the furnace construction of fingers which in operative position extend through the bottom of the furnace to a level above the runways supporting the pipes and obviously such conveyer fingers will be unevenly spaced so that for each group of links provision may be made for the engagement of fingers with pipes of large diameter and of smaller diameters so that the capacity of the annealing furnace to handle pipes is materially increased. My invention will perhaps be better understood as described in connection with the drawings which form a part of this specification and in which,

Figure 1 is a diagrammatic showing of a pipe annealing furnace with my improved conveyer mechanism associated therewith and

Figure 2 is an enlarged showing of one end of the furnace and conveying mechanism.

A indicates the furnace, having pipe supporting runways indicated at B. C, C are the sprocket wheels over which the endless conveyer chain runs and D indicates my improved conveyer chain, which as shown is made up of connected similar groups of links of uneven length. Thus, as shown, each group is made up of one long link D^1 and three short links D^2 D^2. The link engaging surfaces of the sprocket wheels are shaped to conform and engage the groups of links as they pass over the sprocket wheels as shown at C^1 C^2, etc., and from each link of the multiple pitch chain extends a propelling or conveying finger E, E, etc., which will be spaced apart by distances corresponding to the difference in length of the long and short links D^1 and D^2 of the conveyer chain. F, F indicate pipes of the largest diameter; F^1 and F^2 pipes of smaller diameter, said pipes being represented as supported on the runways in the furnace and engaged by the propelling fingers and it will be obvious that my multiple pitch chain arrangement provides for the simultaneous transporting through the furnace of groups of pipes of large variations in diameter with a maximum utilization of the pipe containing capacity of the furnace. G, G indicate idler wheels which

support the lower side of the conveyer chains.

The operation of my improved device will be obvious. Thus in the illustrated pipe annealing furnace construction the upper surface of the conveyer chain may be taken as moving from left to right and as the fingers extending from the chain approach the door of the furnace the pipes are fed to the furnace in such a way that the large pipes will be engaged by the widely spaced fingers and the smaller ones by the more closely spaced fingers, thus enabling the maximum number of pipes to be fed to and through the furnace.

The furnace illustrated in the features of having a horizontal runway for the pipes and in the chamfered pipe engaging ends of the propelling fingers embodies features forming subject matter of my pending application for Letters Patent, Serial No. 326,130, filed December 14, 1928, but the special construction of the furnace forms no part of my present invention, which though especially designed and applicable to pipe annealing furnaces of the general type illustrated, has obviously the capacity for general use in conveying apparatus employing endless chains and propelling devices connected with the links of such chains.

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

In combination with a pipe annealing furnace having runways for pipes extending through its length, conveyer mechanism located beneath the furnace consisting of endless conveyer chains made up of similar successive groups of links each group of links comprising long and short links, sprocket wheels having link engaging faces conformed to the groups of links making up the conveyer chains and fingers secured to the long and short links of the groups which in operative positions extend upward through the bottom of the furnace above the pipe runways so as to engage and propel the pipes supported thereon throughout the length of the furnace.

STUART B. CLARK.