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CHAIN ELEMENT FOR PATTERN MECHANISM

Filed Jan. 2, 1924

Fig. 1

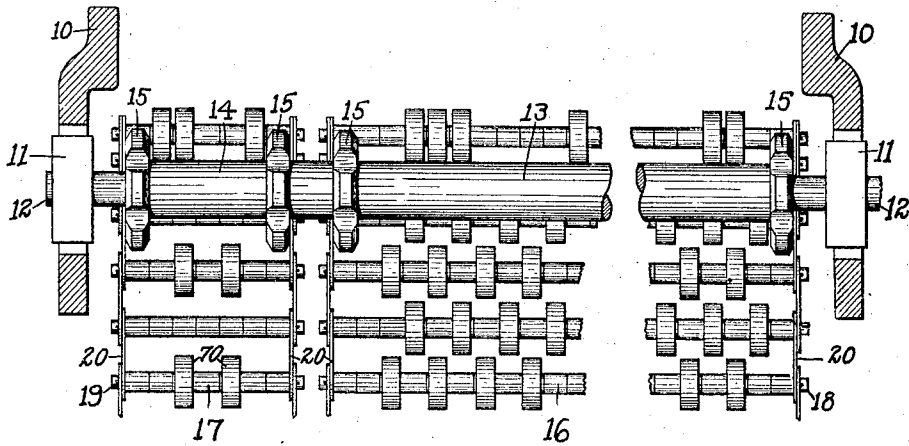


Fig. 2.

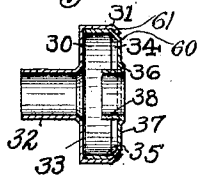


Fig. 3.

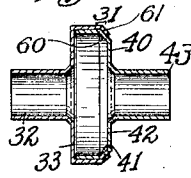
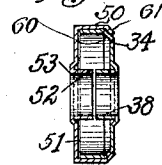


Fig. 4.



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CHAIN ELEMENT FOR PATTERN MECHANISM.

Application filed January 2, 1924. Serial No. 834,006.

This invention relates to pattern mechanism and more particularly to a pattern chain element for such mechanisms as the so-called Knowles head.

5 One object of my invention is to provide a pressed steel chain element sufficiently rigid to raise the vibrator levers commonly found in the Knowles head but of light weight and subject to heat treatment.

10 Another object of my invention is to provide a chain element having combined riser and tube portions by means of which a pattern chain can be assembled more quickly than is possible where separate risers and
15 tubes are used.

A still further object of my invention is to provide a set of different chain elements formed of relatively few component parts but providing a variety of elements such as
20 will facilitate the building of pattern chains.

With these and other objects in view which will appear as the description proceeds, my invention resides in the combination and arrangement of parts hereinafter
25 described and set forth in the claims.

In the accompanying drawings,

Fig. 1 is an end elevation of a portion of a Knowles head showing a pattern chain assembled with chain elements made according to my invention,
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Fig. 2 is a vertical central longitudinal section through an element showing a combined riser and tube,

Fig. 3 is a view similar to Fig. 2 but showing a riser combined with two tubes, one on each side thereof, and
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Fig. 4 is a view similar to Fig. 2 but showing a riser without tubes.

In constructing the pattern chains of the type shown in Fig. 1 it has heretofore been
40 common practice to employ risers or rolls and tubes, the rolls and tubes being separate and assembled on chain bars in the proper sequence to raise the desired harnesses to form any predetermined shed. It
45 not infrequently happens as in the weaving of certain worsteds that the chain bars will be made of risers and tubes alternating and in order to build such a chain bar it is necessary for the operator to handle
50 each tube and each riser separately. The principal object of my invention is to provide a combined riser and tube which will enable the operator to build the chain more

quickly than by the method heretofore in
vogue. 55

Referring more particularly to the drawing, the head frame 10 has mounted therein bearings 11 to receive the ends of chain shaft 12 which may be operated in any desired manner. As shown in the drawings the shaft 12 has formed thereon two cylinders 13 and 14 which are provided with sprockets 15 which receive the chains 16 and 17. The chains are formed with bars 18
60 and 19 which are held together by links 20, and it is upon said bars that the tubes and risers which are shown in detail in Figs. 2 to 5 inclusive are mounted.

Referring to Fig. 2 it will be seen that
70 the chain element is formed with a member 30 having an outer shell 31 forming the tread of the riser and having integral therewith a reduced tube 32 which corresponds to the tube ordinarily employed in pattern
75 chain construction. The tread and tube are connected by an integral web 33, which forms one wall of the riser. Fitting inside the shell 31 is a telescoping member 34 the rim 35 of which fits snugly against the inside of the tread 31 which it reinforces. A
80 slight hub 36 is struck from the web 37 of the telescoping member 34 and has formed therewith an inwardly extending bearing portion 38 which is in alignment
85 with the tube 32. The two members of the element are made of pressed steel which is subject to tempering and may be fitted together or otherwise fastened to each other so as to be held from accidental separation.
90

In Fig. 3 I have shown a construction wherein the riser is combined with two tubes, the member 30 being formed as in Fig. 2 and the other half of the element being formed of a telescoping member 40 having
95 a rim 41 similar to rim 35 and a web 42 from which extends outwardly a second tube 43 which is formed similarly to tube 32.

In Fig. 4 I have shown a form of riser such as may be used when several risers
100 are to be located adjacent each other on a chain bar, the telescoping member 34 being similar to that shown in Fig. 2 while the outer member is provided with a tread 50 which is connected by means of web 51
105 to an inwardly projecting tube 52 similar to bearing 38, the bearing 52 and the web 51 being joined by an offset hub 53.

In each of the constructions shown in Figs. 2, 3, and 4 means are provided by which the inner telescoping member may be held more tightly to the outer tread member, said means comprising a chamfered edge 60 formed on the inner member against which is pressed the outer edge of the tread as at 61. By this construction the two parts will be held together and prevented from springing apart when subjected to heat treatment.

When it is desired to assemble a chain bar having two risers which are separated by a single tube, such as shown at 70 in Fig. 1, two of the chain elements as constructed in Fig. 2 will be used. When it is desired to have a greater number of tubes between the risers I may use the type of element shown in Fig. 3 and where it is desired to have three or more risers together I may use the type of riser shown in Fig. 4 for the offset elements of the chain. In the form of elements shown in Figs. 2 and 3 the bearing portions correspond to the tubes ordinarily employed in the Knowles head, said bearing portions permitting the vibrator levers of the head motion to remain in down position. For a more complete understanding of the relation between the elements and the other parts of the Knowles head reference may be had to Patents Nos. 134,992 and 182,679.

It will be seen from the foregoing that I have provided a chain element which will permit the chain bar to be constructed more quickly than is possible with the tubes and risers at present in use, inasmuch as the elements are formed as combined tubes and risers. Also, it will be seen that I am able to provide three different types of chain elements such as are shown in Figs. 2, 3 and 4 by means of but four different pressed metal parts, the telescoping member 34 being common to the form shown in Figs. 2 and 4 and the tread member 31 being common to the form shown in Figs. 2 and 3.

Having thus described my invention it will be apparent changes and modifications may be made therein by those skilled in the art without departing from the spirit and scope of the invention and I do not wish to be limited to the details herein disclosed, but what I claim is:

1. A chain forming element for loom pat-

tern mechanism, said element comprising a pair of pressed steel members having parallel webs, one member having a roll portion with an outer tread integral with the web of said member, that portion of the tread remote from said web being chamfered, the other member having a portion telescoping into the first member and having a chamfered part connecting the tread of said other member and the telescoping portion thereof, the chamfered parts of said members engaging each other to prevent separation of the members.

2. A chain forming element for loom pattern mechanism, said element comprising a pair of pressed steel members having parallel webs, one member having a roll portion with an outer tread integral with the web of said member, that portion of the tread remote from said web being chamfered, the other member having a portion telescoping into the first member and having a chamfered part connecting the tread of said other member and the telescoping portion thereof, the chamfered parts of said members engaging each other to prevent separation of the members, and each member having a bearing portion extending axially with respect to the members.

3. A set of members for forming chain elements for loom pattern mechanism, all of said elements having a web portion and a bearing portion, the first element having a tread extending on one side of the web and a bearing portion extending on the other side of the web, the second member having a telescoping portion and a tread portion both extending on the same side of the web, the third member having a telescoping portion of less diameter than the tread portion of the first named member and having also a bearing portion extending on opposite sides of the web thereof, and the fourth member having a tread portion of larger diameter than the telescoping portion of the second named member, and having also a bearing portion extending on the same side of the web, either of the first or fourth members being combinable with either the second or the third member to form three distinctive forms of chain forming elements.

In testimony whereof I have hereunto affixed my signature.

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