No. 812,655. PATENTED FEB. 13, 1906.

A. JOHNSON.

ROLLER CHAIN FOR CONVEYERS.

APPLICATION FILED JULY 2, 1903. RENEWED DEC. 22, 1905.

FIG. 1

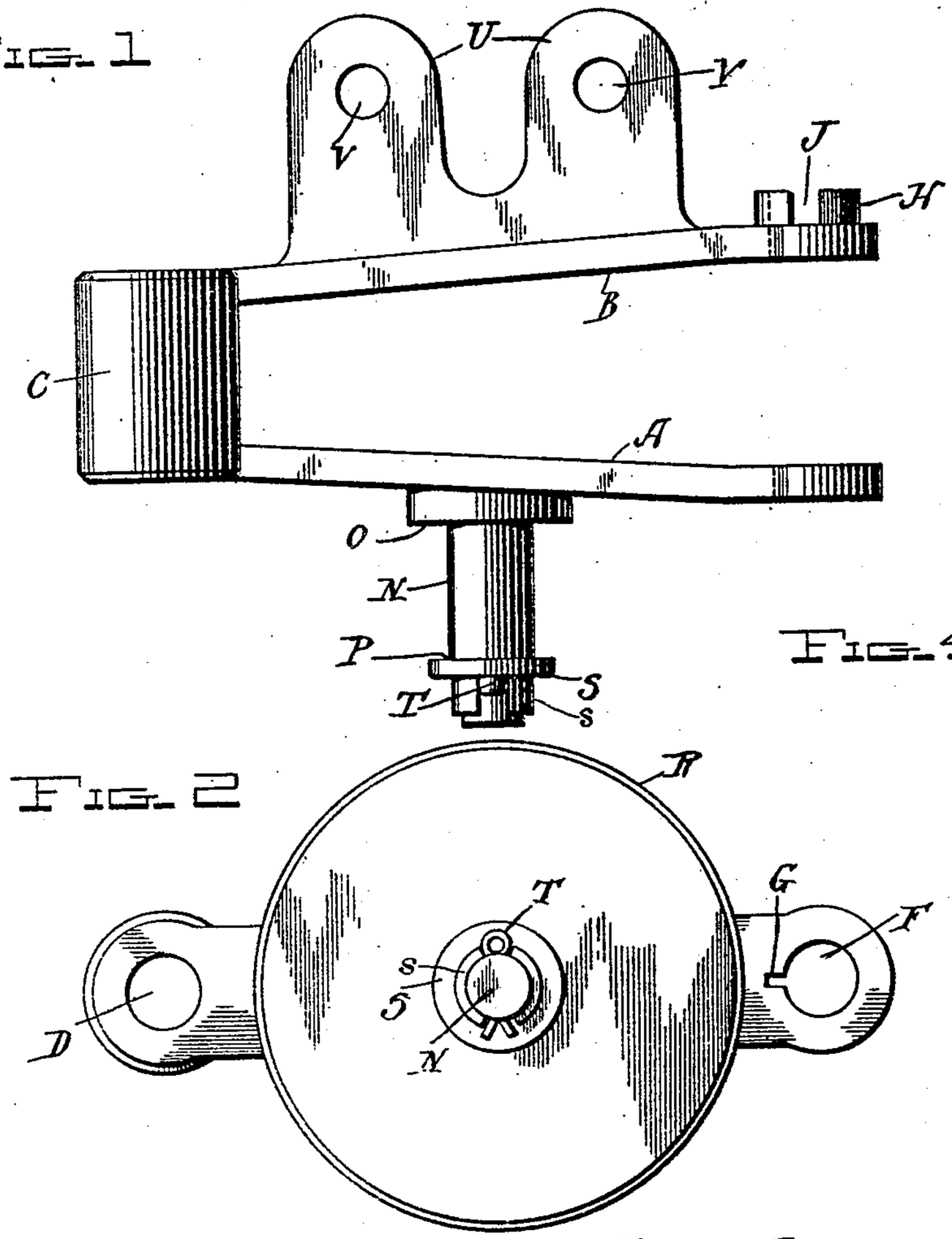


FIG. 4

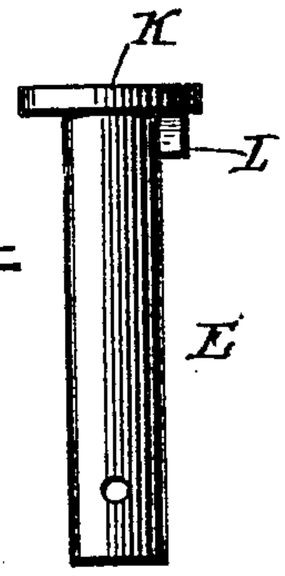
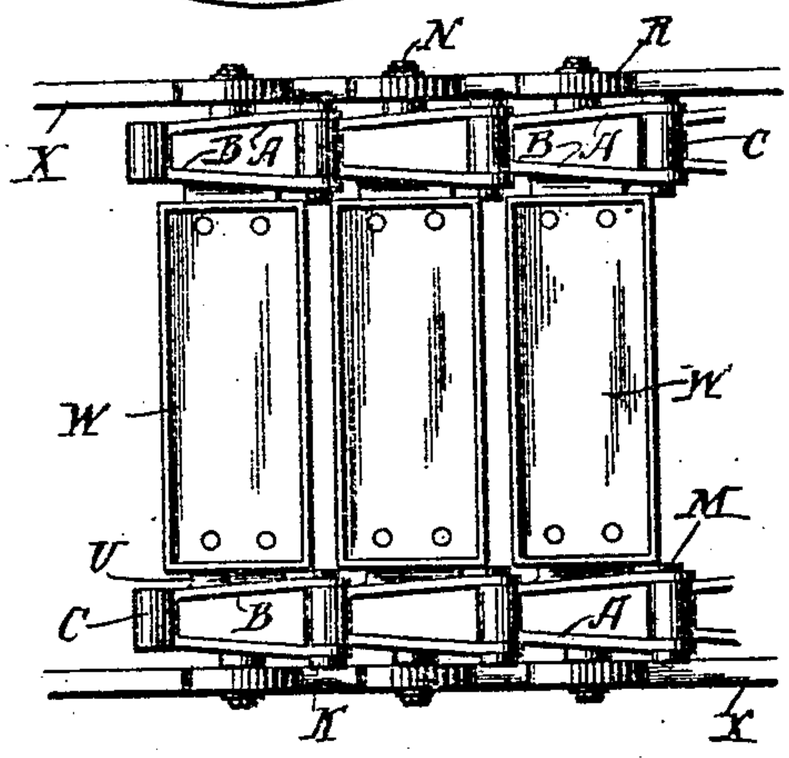


FIG. 2

FIG. 3



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UNITED STATES PATENT OFFICE.

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ROLLER-CHAIN FOR CONVEYERS.

No. 812,655. Specification of Letters Patent. Patented Feb. 13, 1906.

Application filed July 2, 1903. Renewed December 22, 1905. Serial No. 292,967.

To all whom it may concern:

Be it known that I, ADOLPH JOHNSON, a citizen of the United States, residing at Battlecreek, in the county of Calhoun and State of Michigan, have invented certain new and useful Improvements in Roller-Chains for Conveyers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to roller-chains for conveyers, and has for its object the production of a link or element of such a chain of special construction and arrangement of parts.

The stated object I accomplish by means of the particular parts and their association, as illustrated in the accompanying drawings, of which—

Figure 1 is a plan view of one link with the roller omitted. Fig. 2 is a side view of the link, showing the roller or wheel in position and the devices for securing it upon the spindle, and Fig. 3 is a plan view of a portion of a conveyer-chain constructed in accordance with my invention and supporting a pan or other receptacle to show one manner of using the invention. Fig. 4 is a side view of the cylindrical pivot-pin. In Fig. 3 the scale of drawing is somewhat reduced.

Like letters refer to like parts in the several views.

Considering the drawings, letter A designates one side or leg of the link, and B the opposite and remaining side of the two longitudinal pieces constituting the larger portion of the link itself. The sides A and B are connected by a junction or end piece C, usually cylindrical, as shown, and from which the sides project, diverging from each other to about the extent illustrated in Figs. 1 and 3. In Fig. 2 it will be observed that the cylinder C is pierced axially by the bore D, and a pin E (see Fig. 4) is formed to pass through the bore D. It will also be seen from Fig. 2 that the ends of the sides A and B are provided with orifices F, that fall directly opposite each other in the figure. The orifice F in the side A is extended at one place into a key-slot G, while the orifice in the remaining side B of the link passes also through a hollow cylindrical projection H, formed on the outside of the end of side B, as shown in Fig. 1, and diametrically through this hollow cylindrical projection H is formed a key slot or passage J. An inspection of Fig. 4, that illustrates the pivot-pin E, will make clear the construction by which it is proposed to render the pin secure against all probable accidental displacement. Immediately next its head K appears the spline L, and the cotter M passes through the opposite extremity of the pin. When the links are coupled one to another, the divergent ends of one receive between them the cylindrical junction C to another, and the pin E passes through the pierced ends of the sides and through the junction, the spline L entering the key-seat G of the side A, and the cotter M being passed through the end of the pin and also through the key slot or passage J, above mentioned as formed in the cylindrical projection on the outside of the end of side B. It is believed to be now clear that the pin cannot become displaced lengthwise by reason of the action of the cotter, nor can it revolve on account of the engagement of the spline L and its seat. Even if the spline were absent the cotter in the key slot or passage J would prevent both displacement and revolution; but it is desired to employ every precaution to avoid the loosening of any pin during the operation of the chain, as the resulting breakage might prove disastrous.

Considering Fig. 1 it will be seen that the side A possesses a projecting spindle N and that the axis of the spindle is perpendicular not to the side A, but to the median longitudinal line or axis of the link. In other words, the spindle extends at right angles to the path of the link or chain. Spindle N is provided with two annular shoulders O and P, and the roller R is revoluble on the spindle against the inner shoulder O. A washer S, having a slotted projecting portion *s*, is next placed against the outer annular shoulder of spindle N, and a cotter T, passed diametrically through the end of the spindle and through the slotted portion of the washer, holds the washer and roller on the spindle. The thickness of the roller is such as to permit free rotation on the spindle but little side play between the inner shoulder O and the washer. There also appear in Fig. 1 the ears or lugs U, extending outwardly from the side B of the link and pierced by the screw or rivet

holes V. The office of the ears is to support the receptacles W, to which they may be riveted.

Letter X marks the rails upon which the rollers run on opposite sides of the receptacles, which are suspended between two parallel chains, as illustrated in Fig. 3.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

In a roller-chain, the combination of a series of links each comprising two legs joined together at one end by an end piece provided with a transverse bore, the said legs being arranged side by side, the remaining ends of the legs having orifices and being separated and adapted to receive between them the end piece of another link, a pin passing through the said orifices in the legs of one link and through the end piece of the next link disposed between those legs as described, means for securing the pin, one leg of each link having projecting lugs, and the other leg having a projecting spindle, and rollers revoluble upon the said spindles, each link having one of said rollers, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ADOLPH JOHNSON.

Witnesses:

GEO. W. BOICE,

H. J. JOHNSON.