No. 715,371. Patented Dec. 9, 1902.

J. H. HAHN.

CONVEYER.

(Application filed Sept. 4, 1894.)

(No Model.)

Fig. 1.

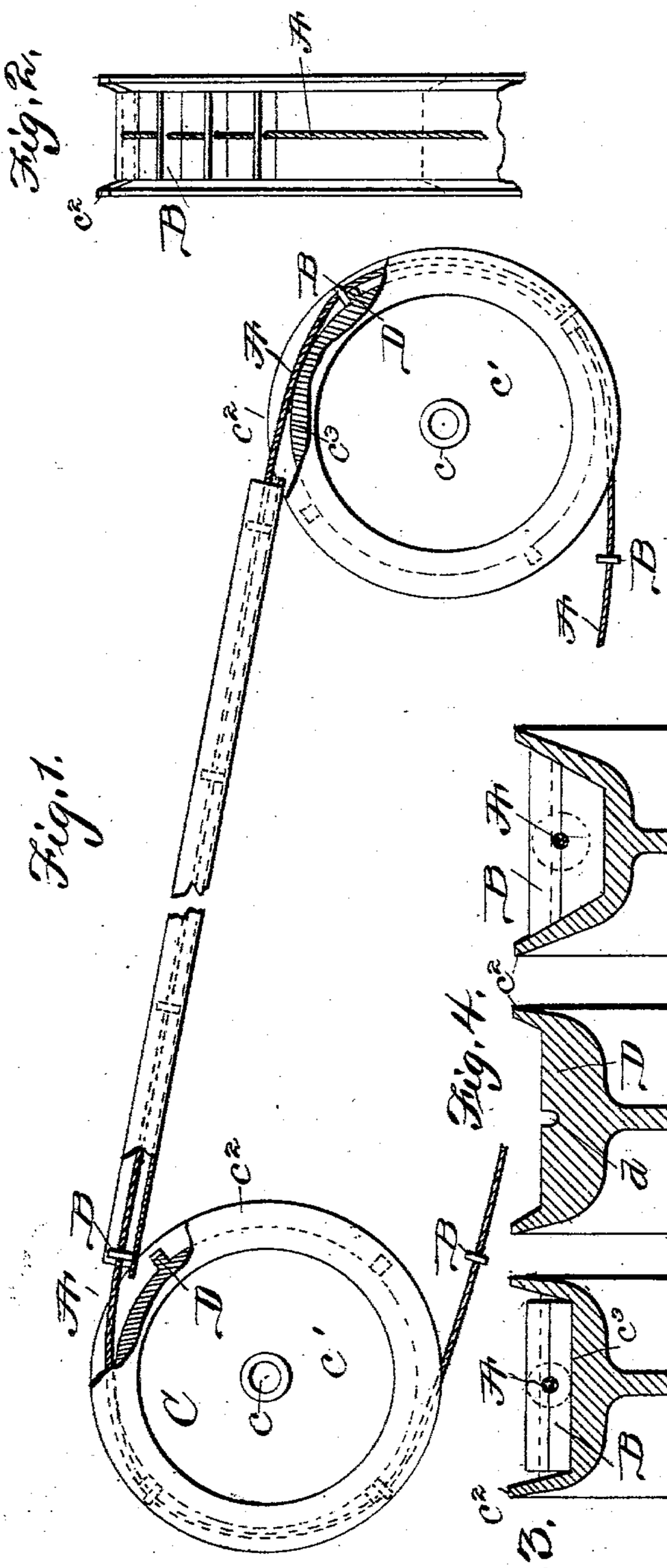


Fig. 2.

Fig. 3.

Fig. 4.

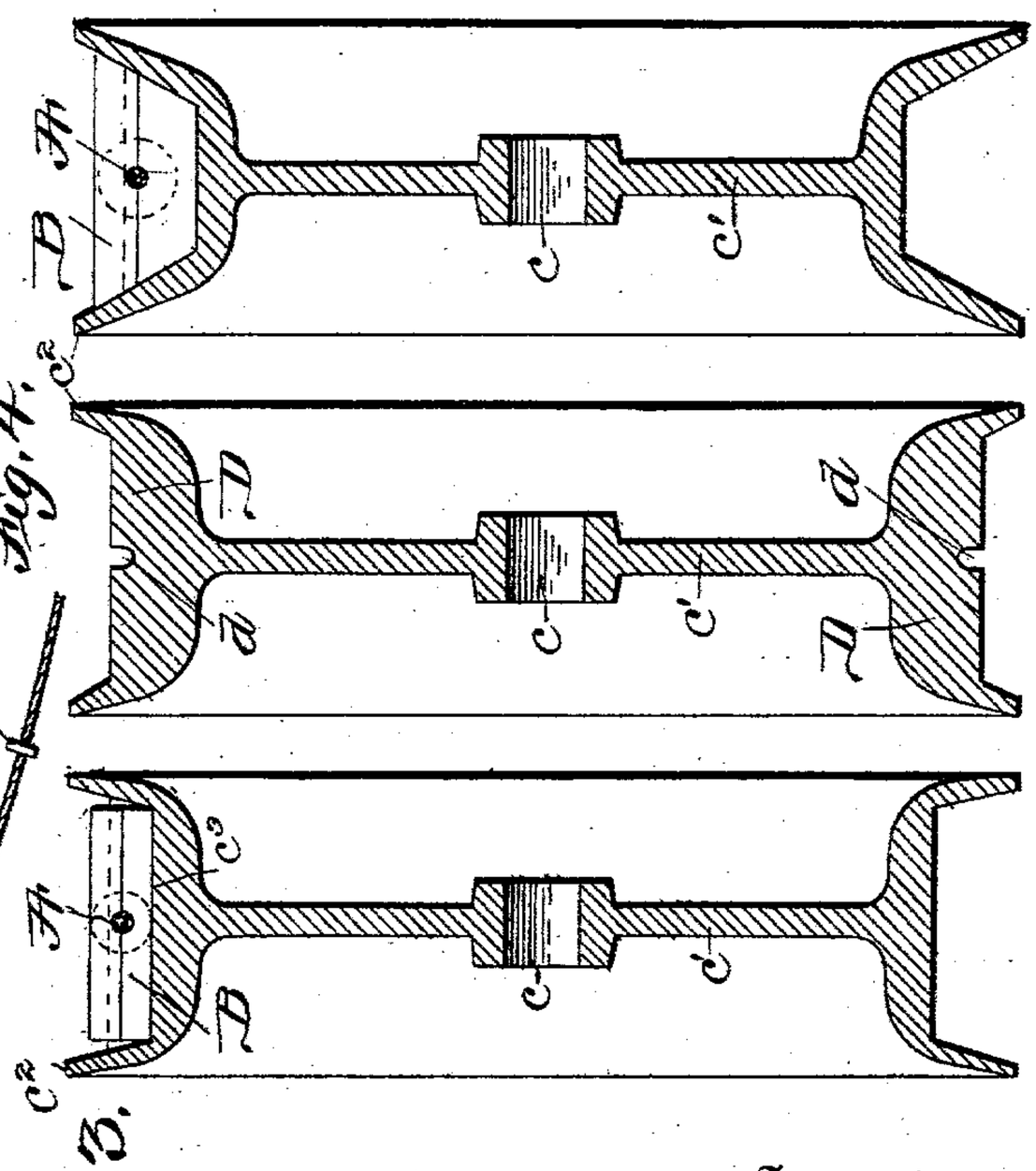
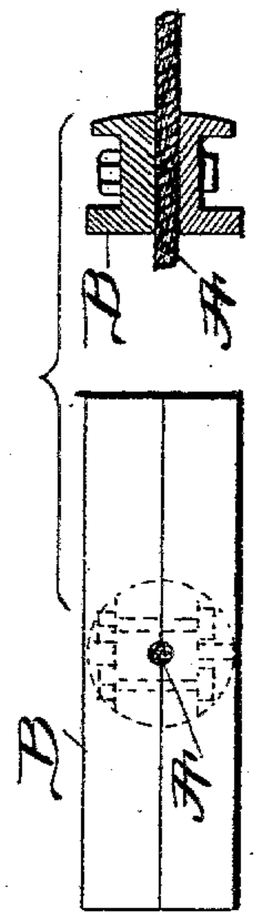


Fig. 5.

Fig. 6.



Witnesses
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CONVEYER.

SPECIFICATION forming part of Letters Patent No. 715,371, dated December 9, 1902.

Application filed September 4, 1894. Serial No. 522,155. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. HAHN, a citizen of the United States, residing at Sargent, in the county of Texas and State of Missouri, have invented certain new and useful Improvements in 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.

Figure 1 is a side view of a portion of a cable conveyer adapted to illustrate my improvements. Fig. 2 is a section taken longitudinally. Fig. 3 is a cross-section to one of the wheels. Figs. 4, 5, and 6 show modified mechanism.

In the drawings, A indicates a cable or rope of the kind now commonly used for haulage or conveyer purposes. At intervals it is provided with flights or attachments, each of which is in the drawings indicated as a whole by B. In Figs. 1, 2, and 3 these flights or attachments are in the nature of blocks of metal or wood, which are firmly clamped to the cable in any suitable way, so that they can serve not only as a means for engaging with the wheels which impart the power, but also for engaging with the materials or object which is to be propelled. Each has a comparatively wide face in the front and also faces at the top and bottom.

C C′ are the wheels over which the cable passes. Each is formed with a central hub c, a body part c', and peripheral flanges c^2 c^2. The inside surfaces of these flanges are beveled or tapered, as will be seen, to better serve as guides for grips or attachments for the cable. Between the flanges c^2 c^2 there is a relatively wide peripheral surface, as at c^3.

D D indicate cross blocks or sprockets which are cast with the wheel in the groove. They extend only part way up from the surface c^3 along the flanges c^2. Their upper surfaces are flat, and at their centers they are formed with curvilinear grooves d to receive the cable.

When the parts are in operation, the flights or attachments B successively impinge upon the sprocket-ribs D, and therefore motion can be imparted by wheel A to the cable, which results in the propelling of the articles with which the flights or attachments engage.

By having a wheel with a continuous periphery, as described, the materials which are being conveyed can be carried up to and over and discharged from the wheel to better advantage than is the case when a forked or spoked wheel is used, as is commonly done.

In Figs. 4 and 5 I have shown a modification with respect to the character of the periphery of the wheel. In this case the tapered surfaces c^2 extend down farther and the central part c^3 is considerably narrower. The sprocket blocks or attachments D are correspondingly deeper at their central lines. This wheel is adapted for use with flights or attachments of a sort differing from those in Figs. 1, 2, and 3. They are illustrated in Fig. 6 and are of the nature of scrapers or flights adapted to pass through troughs having converging sides.

In a conveyer apparatus formed of steel-wire cable and attachments or flights secured thereto it is very undesirable to have the cable bend frequently to and from the normal straight line, as such bending rapidly crystallizes the metal and speedily results in breakage. The place where this disastrous breaking and bending is most apt to occur is immediately behind the sprockets or attachments when they are moving around the driving-wheel, for as the wheel ribs or projections engage powerfully with and push forward the attachments the cable is stretched or strained behind them and tends to take the path of chords of a circle around the wheel-axis. This I obviate by so arranging and relating the ribs D that they shall provide a support for the cable immediately behind the attachments or flights on the driving-wheel. The cable, even when the ribs D are so arranged, still tends to take a rectilineal line; but the bending is distributed over so much of it that disastrous results are avoided, as the sharp bend immediately behind the flight is obviated. With respect to the driven wheel the opposite is true—that is to say, the cable attachment or flight being the driving agent for that wheel the cable is strained or stretched

in front (relatively) of the attachment, and in my construction it normally tends to be supported on the front side by the ribs or projections D; but I not only thus give a radial support for the cable at points adjacent to the flights, but, moreover, apply the power to or from the flights or attachments on several sides of the longitudinal central line of the cable. I extend the ribs D to points above the bottom of the cable, preferably to the plane of its horizontal diameter or somewhat above, as shown in Fig. 4, a recess or groove, as at *d*, in which the cable seats itself, enabling the attaining of this end. If the ribs D and the attachment engage with each other on one side only of the axis of the cable, not only is there danger of the above-described bending action on the cable, but also an undue eccentric pressure upon the attachment or flight; but by allowing the cable to seat itself in a recess or groove, as at *d*, the pressure is applied uniformly to or from the flight, and by having the groove of a diameter but little larger than that of the cable this pressure is applied at points in the lines of the clamping devices, and then, to insure that the cable shall readily and immediately seat itself in the grooves or recesses *d*, I bevel or taper the side walls or rims of the wheel periphery, so that they act to guide to the center the flights D and lead the cable to its seat. When the parts are in motion, the cable is apt to vibrate or "whip" laterally from its normal line and also to twist, more or less; but by shaping the wheel-rims in the way described the results of this are overcome, and the flights are held firmly and the cable guided as aforesaid.

What I claim is—

In a cable conveying apparatus, the combination of a single centrally-arranged wire cable, the flights, herein described, secured to the cable and adapted to push or convey material from point to point, said attachments or flights being relatively elongated, narrow, plates or bars extending laterally in both directions from the cable, and the supporting-wheels, each having the inward-tapering peripheral flanges, c^2, on each side, the cross-bars, D, extending transversely across the space between said flanges and having in their outer edges alined, centrally-arranged, grooves for the cable, and the peripheral surfaces extending continuously from one cross-bar to the next, all of said parts being arranged substantially as set forth, whereby the said elongated flights will when they impinge upon the wheel, if they are out of proper position, act to turn themselves on the axis of the cable, and also guide the cable to the grooves in the cross-bars, D, substantially as set forth.

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

JOHN H. HAHN.

Witnesses:
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