No. 826,991. PATENTED JULY 24, 1906.

C. E. CHRIST.

CONVEYER.

APPLICATION FILED FEB. 9, 1906.

Fig. 1.

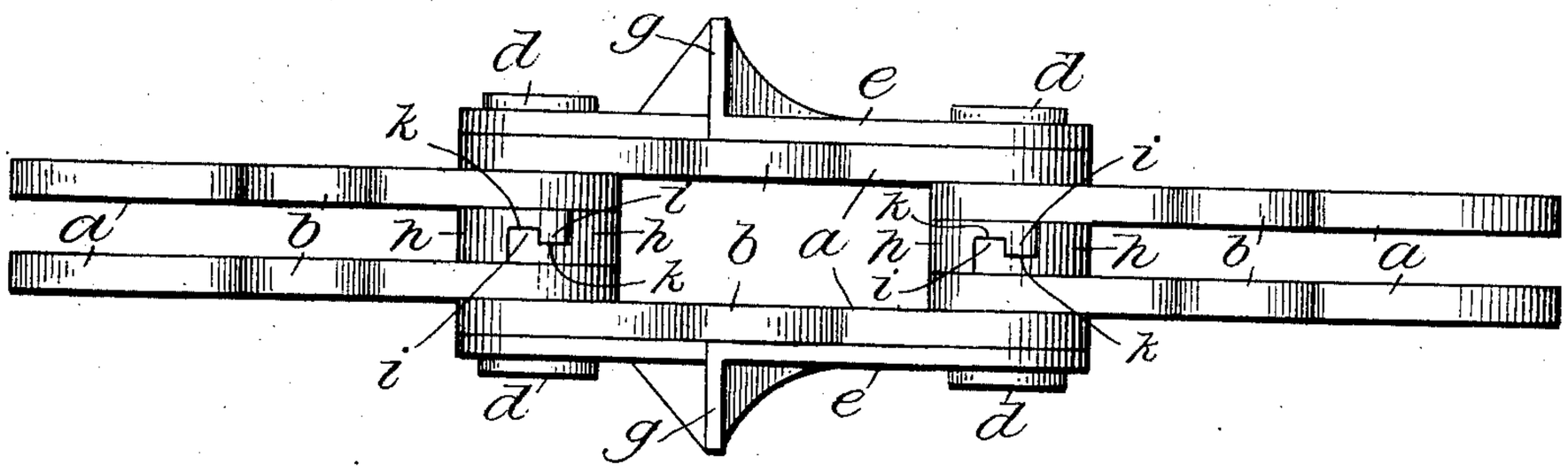


Fig. 2.

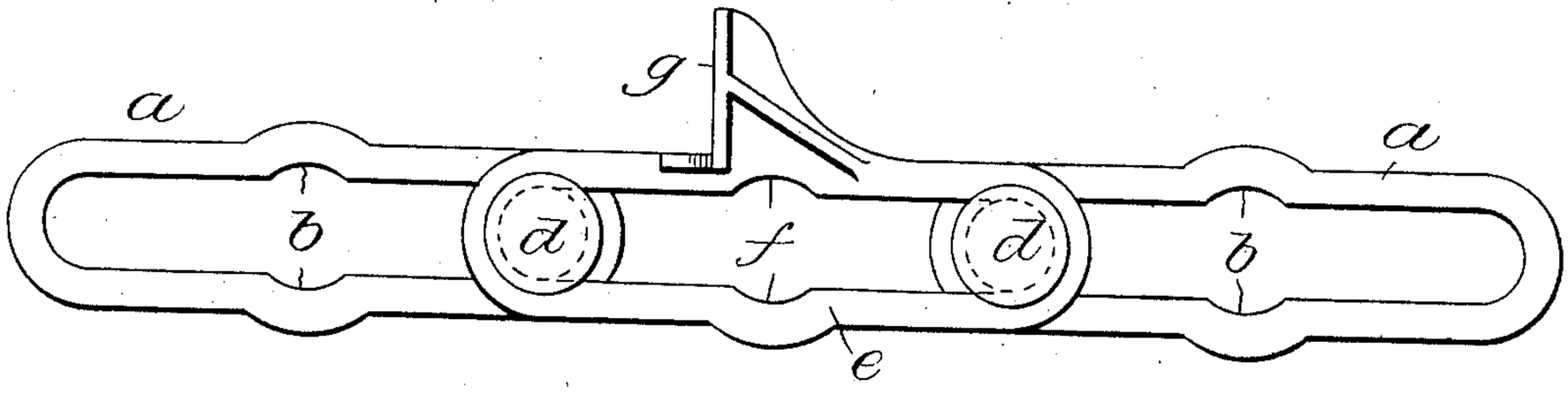


Fig. 3.

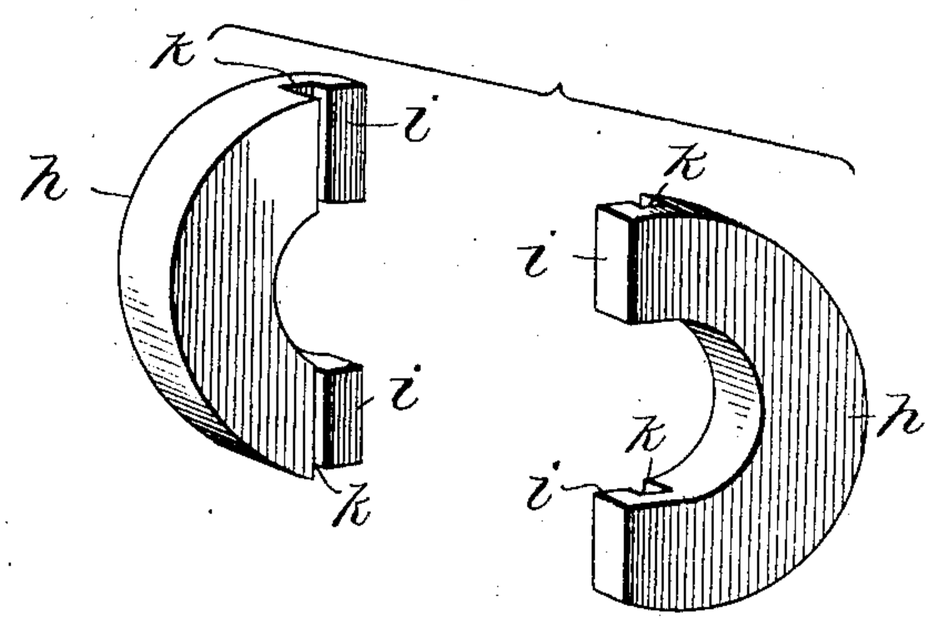
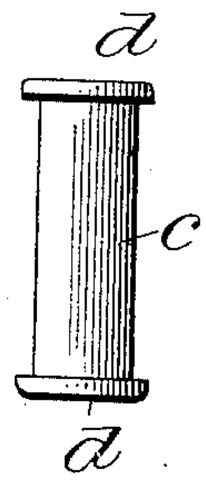


Fig. 4.



Witnesses

C. H. Walker.

H. Evans Doyle.

Inventor

Charles E. Christ

By

W. W. Harrison

Attorney

UNITED STATES PATENT OFFICE

CHARLES E. CHRIST, OF TAMAQUA, PENNSYLVANIA, ASSIGNOR TO ISAAC CHRIST, OF TAMAQUA, PENNSYLVANIA.

CONVEYER.

No. 826,991. Specification of Letters Patent. Patented July 24, 1906.

Application filed February 9, 1906. Serial No. 300,257.

To all whom it may concern:

Be it known that I, CHARLES E. CHRIST, a citizen of the United States, residing at Tamaqua, in the county of Schuylkill and State of Pennsylvania, have invented new and useful Improvements in Conveyers, of which the following is a specification.

This invention relates to conveyers of the type shown in Letters Patent No. 768,976, granted to Isaac Christ August 30, 1904, and my present invention is designed more particularly as an improvement upon the construction shown in said patent, although my invention is not limited to the specific construction of the conveyer as a whole that is shown in said patent.

The object of this invention is chiefly to provide means for spacing the links so as to enable the teeth of driving or idle sprocket-wheels to enter spaces between links which are mounted or arranged side by side.

My invention consists in the construction and combination of parts substantially as hereinafter described and claimed.

Of the accompanying drawings, in which similar reference characters indicate similar parts or features of construction in all of the views, Figure 1 represents a plan view of a portion of a conveyer, illustrating one of the embodiments of my invention, it being understood that an endless flight-conveyer in its entirety would comprise as many duplicates of the members shown in said figure as would be necessary or desirable, according to the length of conveyer desired. Fig. 2 represents a side elevation of the parts or members shown in Fig. 1. Fig. 3 is a perspective view of the two-part or separable washer, the two halves of the washer being separated. Fig. 4 represents a side elevation of one of the double-headed pins.

Each of the chain-links *a* is formed with an elongated opening or slot a portion of which is enlarged, as at *b*, for the purpose hereinafter described. These links are preferably arranged in pairs, each two pairs, which rest side by side and in contact, being connected by another pair lying against the outer sides of and overlapping the ends of the first-mentioned pairs and pivotally connected therewith by the double-headed pins *c*, having integral heads *d*. The heads of the pins are of a diameter slightly less than that of the enlarged portions *b* of the slots, so that the pins may be passed endwise through said enlarged portions. The same pins which unite and pivotally connect the chain-links also secure in the desired positions the slotted plates *e*. These plates are in the form of links, and they are provided with integral wings, lugs, brackets, or arms, to which the carrier blades or buckets (not shown) are to be secured. The plates *e* and their projections are herein referred to as "flight-links." Their slots and the enlargements *f* thereof are similar to the slots and enlargements *b* of the chain-link *a*.

The flight-links shown in Figs. 1 and 2 are formed with integral angular wings or lugs *g*, said wings or lugs being in practice formed with holes for the reception of bolts by means of which suitable blades or scrapers (not shown) may be secured to their flat faces.

To assemble the parts shown in Figs. 1 and 2, all that is necessary is to place four chain-links side by side and two flight-links against the outer surfaces of the two outer chain-links. Then insert a pin *c* through the enlargements of the slots and then move the two inner chain-links lengthwise and carry the pin with them. Two more chain-links are now inserted between the outer chain-links of the first-mentioned set until the enlargements of their slots register with the slot enlargements of the said outer links, and then a second pin *c* is inserted. Upon then drawing apart the two pairs of end links the pins are carried to the ends of the slots, in which position the heads of the pins lock all the members together. Obviously the conveyer may be built up to any length desired in this manner, and the flight-links may be applied where wanted laterally adjacent to the chain-links at suitable intervals. It is also obvious that the reverse of the operation described enables the conveyer to be taken apart or new members readily substituted for damaged ones. Of course if the flight-links are not used adjacent to the sides of each alternate pair of chain-links the double-headed pins *c*, used to connect merely four chain-links, will be suitably shorter in length, so that their heads will rest snugly against the outer sides of such links.

The construction as so far described is the same as shown in the patent hereinbefore referred to.

It is frequently desirable that the pairs of links which are between those links which

have flight-links adjacent thereto shall be spaced apart in order that the teeth of driving or driven sprocket-wheels may enter such spaces. In other words, it is desirable that the two links of every pair shall be spaced apart. Of course the links which are adjacent to the flight-links are spaced by the presence of the alternating links; but it is also desirable that said alternating links shall be spaced so that sprocket-wheels having a single peripheral row of teeth may be employed. Inasmuch as it would be both expensive and difficult to form collars on the pins *c*—that is, collars integral with the pins—I provide removable collars or washers comprising two parts *h h*. Each member or part *h* is formed at each end with a lug *i* and a recess *k* behind such lug, this construction being clearly indicated in Fig. 3. By constructing the washers or collars removable in this manner it can be applied to a pin after two links have been applied thereto in the manner hereinbefore described. This is done by placing the two halves or parts of the washers upon the pin while said two parts are out of alinement. Then by a slight lateral movement of either half or part relatively to the other the lugs *i* of each pair are caused to enter the recesses *k* of the other part. This assembling brings the two parts of the washer to the position shown in Fig. 1, after which the other links are applied over the heads *d* of the pins in the manner described. This final placing of the last of the links holds the two parts of the washer with their lugs interengaged—that is, the heads of the pins and the portions of the links which are between said heads and the washer hold the two parts of the washer with their lugs interengaged.

It is to be understood that while I have shown a particular type of flight-link similar to what is illustrated in the patent above mentioned different forms of flight-links might be employed or they might be omitted entirely and the chain arranged as a different type of conveyer.

Inasmuch as the washers are of the same diameter as the portions of the links which are adjacent thereto, they will bear against the teeth of sprocket-wheels equally with the ends of the adjacent links when sprocket-wheels are employed having teeth adapted to enter only the spaces between the links which are more widely separated. In other words, if a sprocket-wheel is employed having teeth which are spaced from each other a distance equal to alternating pairs of links said sprocket-teeth may be wide enough to bear not only against the removable washers or collars *h*, but also against the ends of the links *a*, and thereby afford a wide engaging surface.

Having now described my invention, I claim—

1. A conveyer comprising slotted chain-links, double-headed pins pivotally connecting the links, said links having their slots formed with enlargements to permit the passage of the heads of the pins, and two-part washers having interengaging lugs mounted on the pins between two links, the two parts of the washers being held with their lugs interengaged by the heads of the pins and the portions of the links between said heads and washers.

2. A conveyer comprising slotted chain-links alternately arranged in contacting and spaced pairs, double-headed pins pivotally connecting said links, said links having their slots formed with enlargements to permit of the passage of the heads of the pins, and two-part washers having interengaging lugs mounted on the pins between two links, the two parts of the washers being held with their lugs interengaged by the heads of the pins and the portions of the links between said heads and washers.

3. A conveyer comprising slotted chain-links, double-headed pins pivotally connecting the links, said links having their slots formed with enlargements to permit of the passage of the pins, and two-part washers mounted on the pins between the adjacent links, said washers having laterally-projecting lugs at the ends of each of the two parts thereof, and recesses behind said lugs.

4. A conveyer comprising slotted chain-links and slotted flight-links, double-headed pins pivotally connecting the ends of the chain-links and also supporting and locking the flight-links in position, all of said links having their slots formed with enlargements to permit the passage of the heads of said pins, the flight-links corresponding in length with the chain-links and supported against the sides thereof by said pins, and removable two-part washers mounted on the pins between the chain-links, said washers having interengaging lugs held in connected position by the links interposed between said washers and the heads of the pins.

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

CHAS. E. CHRIST.

Witnesses:

SAM FALK, Jr.,

EMANUEL F. BROSIUS.