Aug. 29, 1933. J. THOMSON 1,925,014

CONVEYER OF THE BELT TYPE

Filed Aug. 20, 1932 3 Sheets-Sheet 1

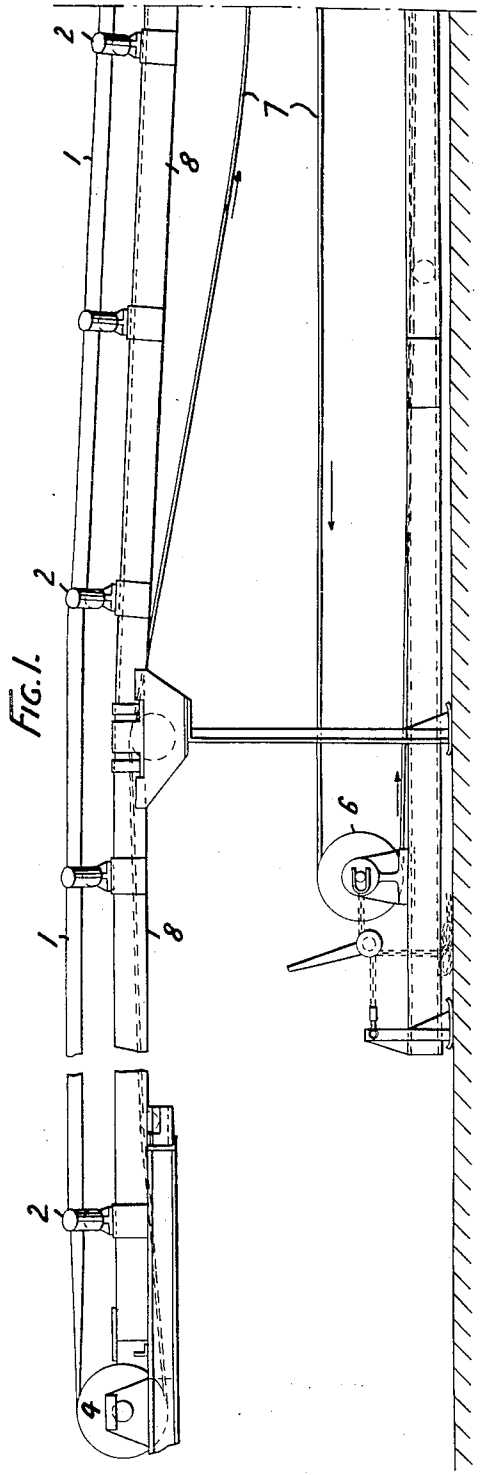

FIG. 1.

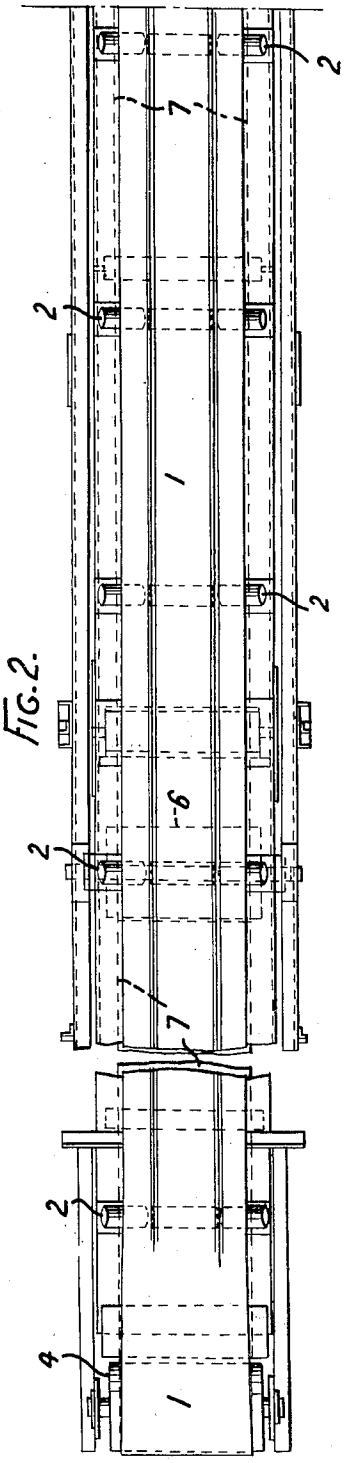

FIG. 2.

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CONVEYER OF THE BELT TYPE

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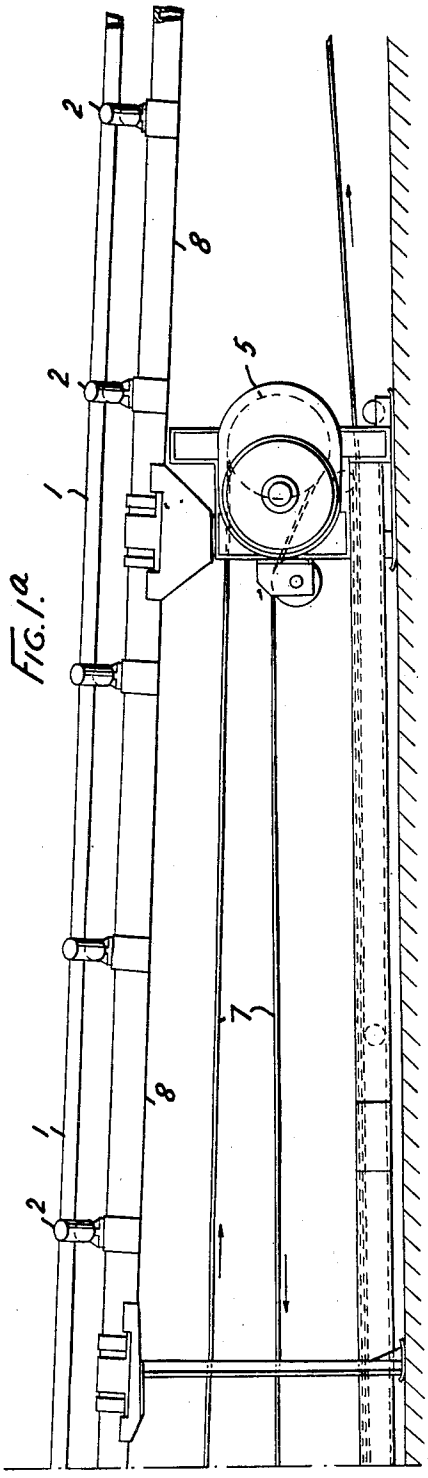

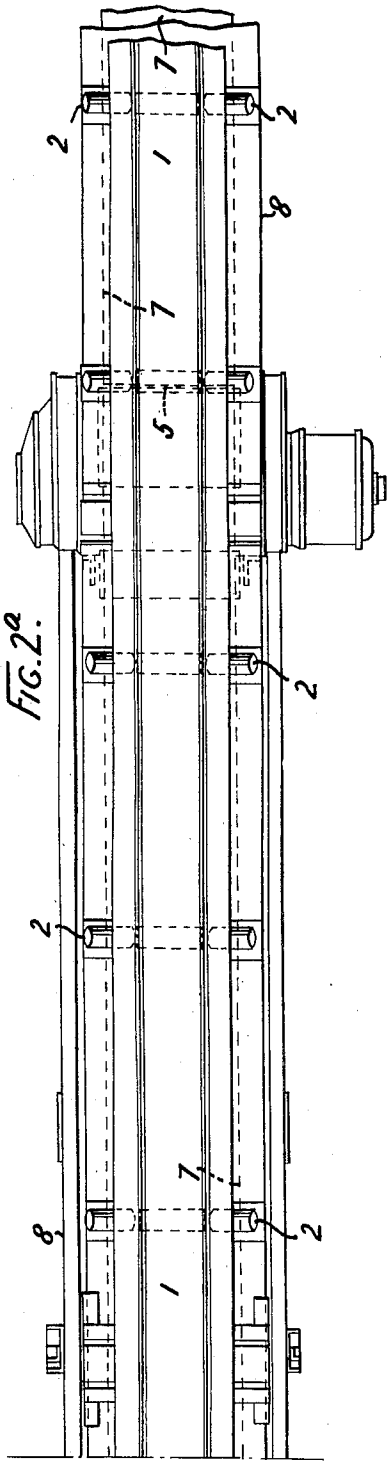

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Aug. 29, 1933. J. THOMSON 1,925,014

CONVEYER OF THE BELT TYPE

Filed Aug. 20, 1932 3 Sheets-Sheet 3

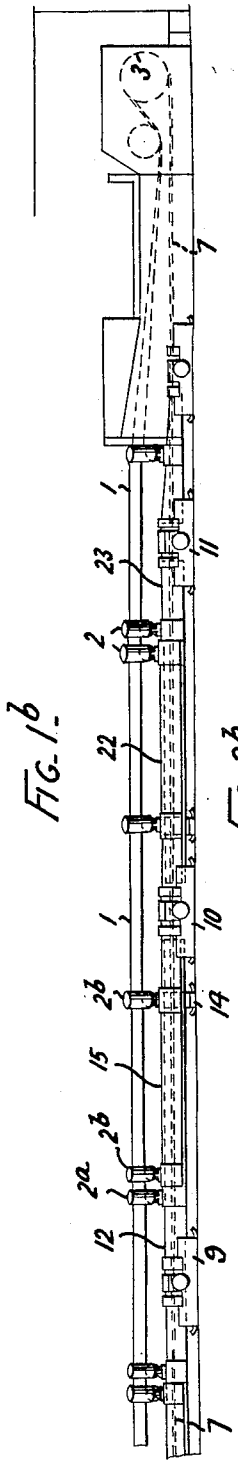

FIG. 1.

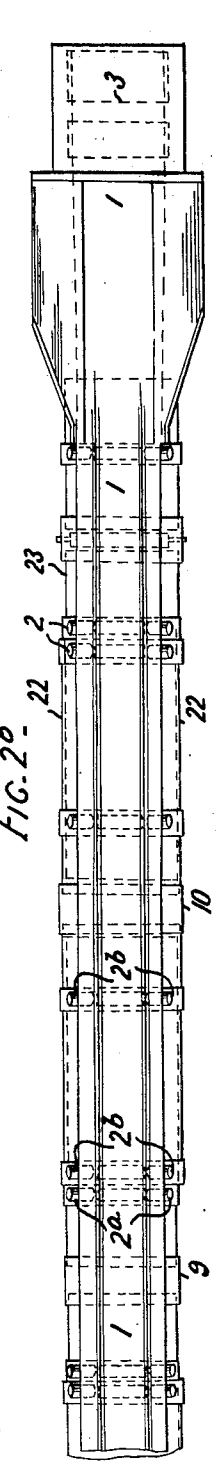

FIG. 2.

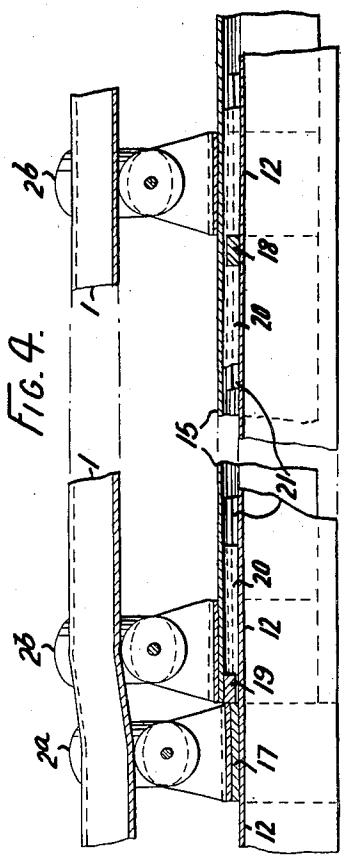

FIG. 4.

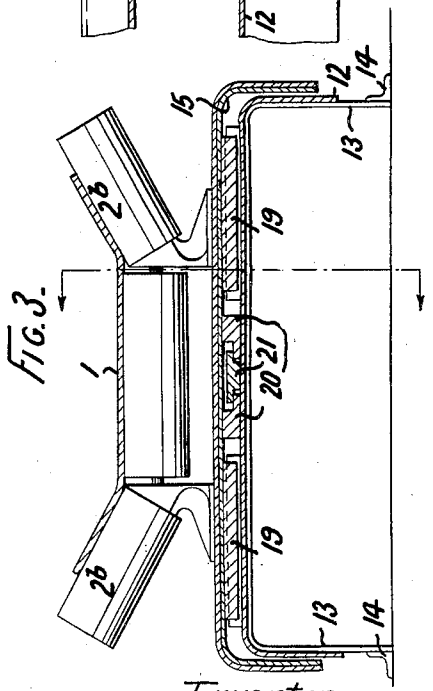

FIG. 3.

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Patented Aug. 29, 1933

1,925,014

UNITED STATES PATENT OFFICE

1,925,014

CONVEYER OF THE BELT TYPE

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Application August 20, 1932, Serial No. 629,731, and in Great Britain October 9, 1931

5 Claims. (Cl. 198—139)

This invention relates to conveyers of the class in which a single run of belting operable between two positions is adapted, while installed, to be readily varied in length, and which conveyers may be described as characterized by a single upper belt run extending between receiving and delivery ends with provision for varying the distance therebetween and a lower belt run of loop character capable of length variation.

In order to protect the return or lower run of the belting, as such a conveyer is extended, it will be obvious that additional roofing in the form of inverted troughing must be made use of if that is the kind employed, and the present invention consists in arranging for the ready extension and protection of a conveyer of the kind referred to.

To this end, assuming the invention to be applied to the mining of coal, the material is delivered direct to a belt conveyer by face conveyers and a number of inverted troughs are made to overlap each other, the overlap being substantially complete so that initially they may be regarded as telescoped. However, as an additional length of belt is brought into use and the receiving end of the conveyer is advanced to follow the coal face, one or more of the trough sections can be pulled forward to cover the lower run of the belt.

In the accompanying drawings:

Figs. 1, 1^a and 1^b collectively show in side elevation the principal parts of a conveyer embodying the present invention;

Figs. 2, 2^a and 2^b collectively represent a corresponding plan view of the conveyer;

Fig. 3 is a transverse section corresponding to an end view of Fig. 4; and

Fig. 4 is a sectional side elevation of a portion of Fig. 1^b, drawn to a larger scale.

In the illustrative construction, 1 (see Figs. 1 and 1^a) indicates the upper run of a belt brought to trough-like shape by angularly arranged rollers 2, 3 (see Fig. 1^b) is the guide drum at the receiving end, and 4 (see Fig. 1) is the guide drum at the delivery end. From the drum 4, the belt (1) passes first to a drum 5 and thence to a drum 6, ultimately returning from the latter to the guide drum 3.

With this arrangement, which however forms no part of the present invention, it will be understood that by altering the distance between the drums 5 and 6, the distance separating drums 3 and 4 can also be altered to vary the length of the conveyer. Thus, by bringing the drum 6 nearer to the drum 5, the drum 3 at the receiving end of the conveyer can be moved further away, i. e., to the right, to lengthen the conveyer.

The lower run 7 of the belt is protected by troughing 8 (see Figs. 1 and 1^a), which carries the rollers 2. In accordance with the present invention, this troughing as shown in Fig. 1^b is given an overlap between sled carriage supports 9 and 10 and between like carriage supports 10 and 11. Extending from the carriage 9 is an inverted trough length 12, carrying a set of rollers 2^a for the upper belt run and provided interiorly at its remote end with a strap 13 (see Fig. 3) having angle feet 14 which serve to support said length (12). Upon this trough length (12) is another trough 15, carrying two sets of rollers 2^b for the upper belt run, said another trough (15) extending from the carriage 10.

The set of rollers 2^a carried by the trough 12 is mounted upon a saddle strap 17 (see Fig. 4) and blocks 18 are mounted on said trough (12) near its other end. Similar blocks 19 are mounted upon the underside of the upper trough 15 and are adapted, prior to extending the conveyer, to engage the strap 17 which therefore acts as a stopper. When the conveyer is extended, the blocks 19 will engage the blocks 18 which therefore act as another stopper to limit the movement in opposite direction.

In cross section, the trough 15 is of course wider than the trough 12. In order to guide the two troughs during movement, the underside of trough 15 is fitted with two runners 20 (see Figs. 3 and 4) of an L section shape, while the top side of trough 12 is fitted with a runner 21 of T section shape to coact therewith.

Between the carriages 10 and 11 are arranged two similar troughs 22 and 23, the trough 22 extending from the carriage 10 being like or corresponding to the trough 15, and the trough 23 extending from the carriage 11 being like or corresponding to the trough 12. In use, the lower trough 23 is moved to the right so that it slides under trough 22, whereupon the two troughs move together, taking with them the carriage 10. The manner of this movement will be obvious from the above explanation with the added statement that the trough 15 moves or slides over the trough 12 until the stopper 19 engages the stopper 18 and the troughs 22 and 23 work similarly against corresponding stoppers.

It will be understood that the foregoing is only one example of construction according to the invention and that the number and length of overlapping trough sections may be varied to suit different requirements.

What I claim is:—

1. In a conveyer of the belt type, a series of inverted trough sections carrying a series of rollers supporting the upper run of the belt thereabove and shielding the lower run of the belt trained thereunder; said sections being connected in telescopical relation for slide movement one upon another and having means including part of the support roller mountings thereon for limiting such movement therebetween in opposite directions.

2. In a conveyer of the belt type, a series of inverted trough sections carrying a series of belt supporting rollers and shielding the lower run of the belt trained thereunder; said sections being supported on sled carriages and connected end to end with each other in a telescopical slide relation permitting them to be drawn inward and outward in variably adjustable extension; and having means including part of the support roller mountings for limiting the slide movement therebetween in opposite directions.

3. In a conveyer of the belt type, a plurality of inverted trough sections connected one with another in telescopical slide relation and carrying belt supporting rollers for the upper run of the belt and protecting the lower run of the belt trained thereunder; one of each adjacent pair of the sections having at one end an internal strap with feet serving as a mount for the belt roller support and at the other end an external strap, and the other of each adjacent pair of the sections having a stopper on its underside; the external strap of the one being adapted to engage the stopper of the other to limit relative movement between the two in one direction.

4. In a conveyer of the belt type, a pair of inverted trough sections carrying belt supporting rollers for the upper run of the belt connected in telescopical slide relation and protecting the lower run of the belt, one of said pair having at one end an internal strap with feet serving as a mount for the roller support and also an external stopper, and at the other end an external strap, serving likewise as a stopper; the other of said pair having a stopper on its underside adapted to engage the stopper of the first one to limit relative movement between the two in one direction and to engage the external strap of said first one to limit relative movement between the two in the opposite direction.

5. In a conveyer of the belt type adapted to elongation or adjustable extension between two points, a pair of inverted trough sections telescopically connected or overlapped to slide upon each other and supported upon sled carriages; each of said sections carrying a series of belt supporting rollers and the two being jointly adapted to protect or shield the lower run of the belt trained thereunder; one of the sections having an internal strap at one end adapted to bear against an external strap on the end of the other and against one of the support roller mountings of said other for limiting the extent of slide movement between the two in opposite directions, together with means preventing separation of the two parts.

JAMES THOMSON.