

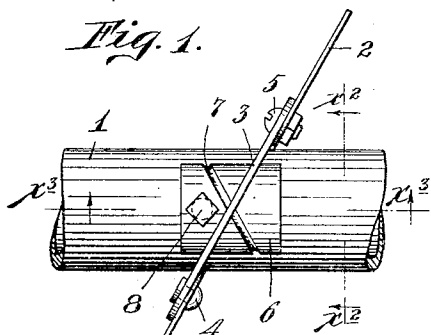
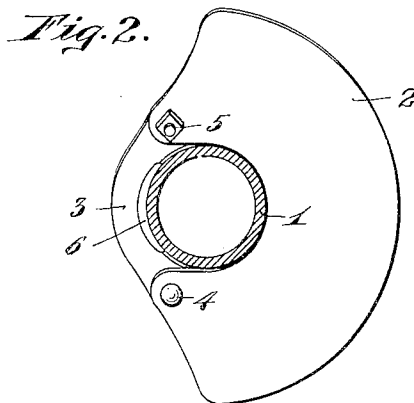
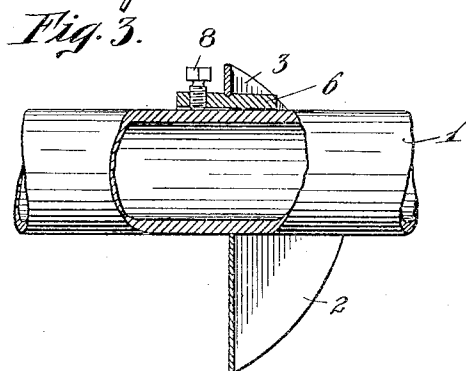
No. 803,924.

PATENTED NOV. 7, 1905.

T. McGRATH & F. McANDREWS.

SPIRAL CONVEYER.

APPLICATION FILED MAY 29, 1905.



Witnesses.

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SPIRAL CONVEYER.

No. 803,924.

Specification of Letters Patent.

Patented Nov. 7, 1905.

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To all whom it may concern:

Be it known that we, THOMAS McGRATH and FRANK McANDREWS, citizens of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Spiral Conveyers; and we do hereby 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.

Our invention relates to spiral conveyers, and particularly to those having removable flights, and has for its object to improve the same in the several particulars hereinafter noted.

The invention consists of the novel devices and combinations of devices hereinafter defined, and described in the claims.

In the accompanying drawings, which illustrate our invention, like characters indicate like parts throughout the several views.

Figure 1 is a plan view showing a portion of the conveyer-shafts, to which one of our improved flights is applied. Fig. 2 is a transverse vertical section taken on the line $x^2 x^2$ of Fig. 1. Fig. 3 is a view, partly in side elevation, with some parts sectioned on the line $x^3 x^3$ of Fig. 1. Fig. 4 is a view corresponding to Fig. 1, but illustrating a modified construction; and Fig. 5 is a transverse vertical section taken on the line $x^5 x^5$ of Fig. 4.

The numeral 1 indicates a conveyer-shaft, which, as shown, is in the form of a pipe or tube, which gives maximum strength with a minimum of weight.

The numeral 2 indicates one of the flights of the conveyer, which flight is approximately semi-annular and is to be set on the conveyer-shaft at an oblique angle to the axis thereof at about forty-five degrees. In a complete conveyer of course there will be a plurality of these flights set on the shaft the one in advance of the other. The shaft-seat, formed by the inner and smaller curve of the flight 2, is somewhat larger than the exterior of the shaft, which is of course necessary in order to permit the flight to be set at an oblique angle to said shaft.

Referring now to the construction illustrated in Figs. 1, 2, and 3, the numeral 3 indicates a curved "bridge-bar," so called, which is pivotally attached at one end to one end of

the flight, preferably by means of a rivet 4. At its other end said bridge-bar is detachably secured to the other end of the flight, preferably by means of a short nutted bolt 5. The flight and the bridge-bar completely embrace the conveyer-shaft. Fitting the shaft and interposed between the same and the bridge-bar 3 is a so-called "anchor-block" 6, that is formed with transversely-intersecting grooves 7. The bridge-bar 3 is adapted to be set in either of the grooves 7 and when seated in one thereof will set the flight at an oblique angle for right-hand thread and when set in the other groove will set said flight for a left-hand thread. A set-screw 8 works through one end of the anchor-block 6 and impinges against the conveyer-shaft. When the set-screw 8 is tightened, that end of the anchor-block is raised and the other end thereof is forced against the shaft and becomes a fulcrum. This arising or outward movement of the anchor-block forces outward the bridge-bar and tightly clamps the flight against said shaft and rigidly holds the same in its properly-set position. When the set-screw is loosened and the bolt 5 is removed, the flight may be removed from the shaft by a movement transversely thereof and may of course be applied to said shaft by a reverse operation.

In the modified construction (illustrated in Figs. 4 and 5) the bridge-bar 3 is shown as formed integral with the anchor-block 6. The operation of this device is substantially the same as that illustrated in Figs. 1, 2, and 3, except that in this modified construction the integrally-formed blocks and parts would have to be made in rights and lefts in order to provide for the different applications of the flights to the shaft. Both of the said constructions, however, are thought to be a marked improvement over previously-existing devices employed for a similar purpose. In both instances the flights and bridge-bars completely embrace the conveyer-shaft, so that the flight cannot drop from the shaft even though it should become loose. In conveyers having detachable flights a great deal of damage has been done by flights which have fallen from the shaft upon becoming loose, and thereby caused breaking of other parts.

Our improved conveyer-flight while of small cost is strong and durable, may be ap-

plied and removed quickly and with ease, and is generally efficient for the purposes had in view.

What we claim, and desire to secure by Letters Patent of the United States, is as follows:

1. The combination with a conveyer-shaft, of a flight having a bridge-bar pivoted thereto at one end and detachably secured thereto at its other end, said flight and bridge-bar embracing said shaft, a grooved anchor-block interposed between said bridge-bar and said shaft, and a set-screw working through one end of said anchor-block and serving to tilt the same and tighten said flight onto said shaft, substantially as described.

2. The combination with a conveyer-shaft, of

a flight 2 having a bridge-bar 3 pivoted thereto at 4 and detachably secured thereto by a bolt 5, an anchor-block 6 having the intersecting grooves 7 engageable with said bridge-bar, and a set-screw 8 working through one end of said anchor-block and serving to tilt and tighten said flight onto said shaft, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

THOMAS McGRATH.
FRANK McANDREWS.

Witnesses:

MALIE HOEL,
F. D. MERCHANT.