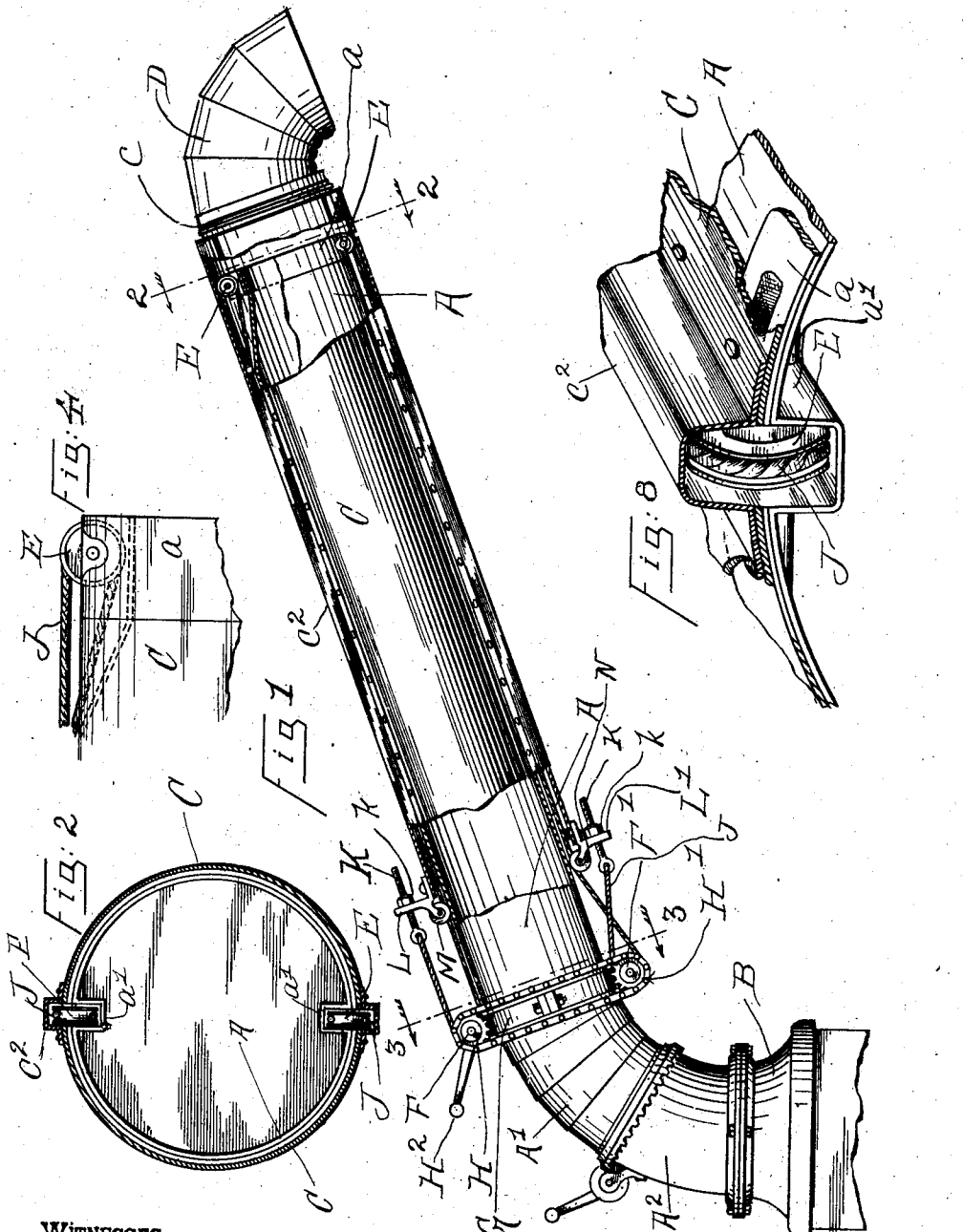
No. 761,761. PATENTED JUNE 7, 1904.

G. F. CONNER.

CONVEYER CHUTE.

APPLICATION FILED MAR. 20, 1903.

NO MODEL. 3 SHEETS—SHEET 1.



WITNESSES.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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NO MODEL. 3 SHEETS—SHEET 2.

Fig. 3

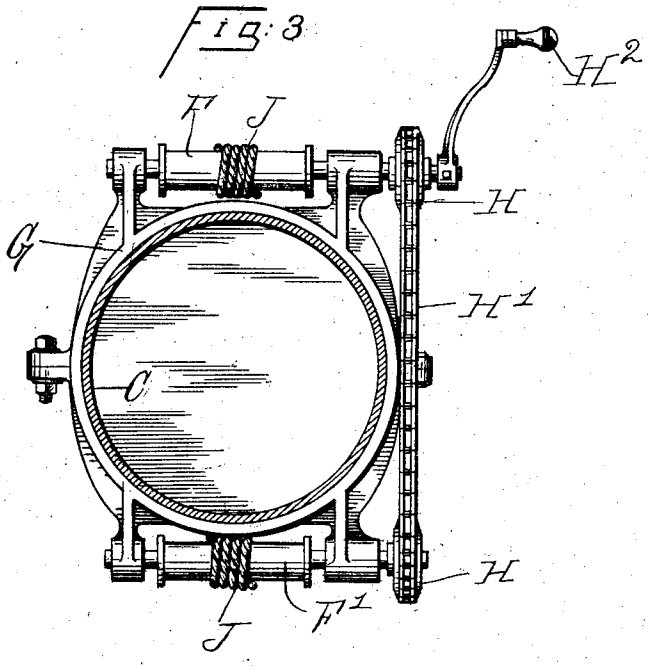


Fig. 10

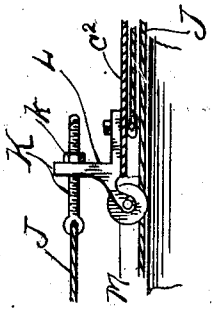
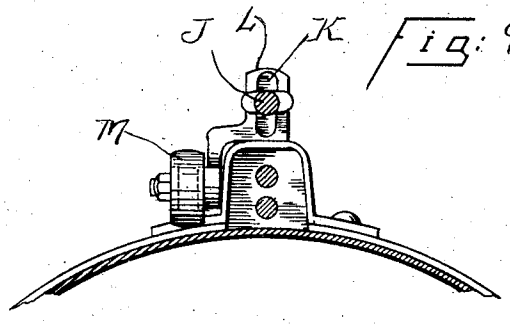


Fig. 9



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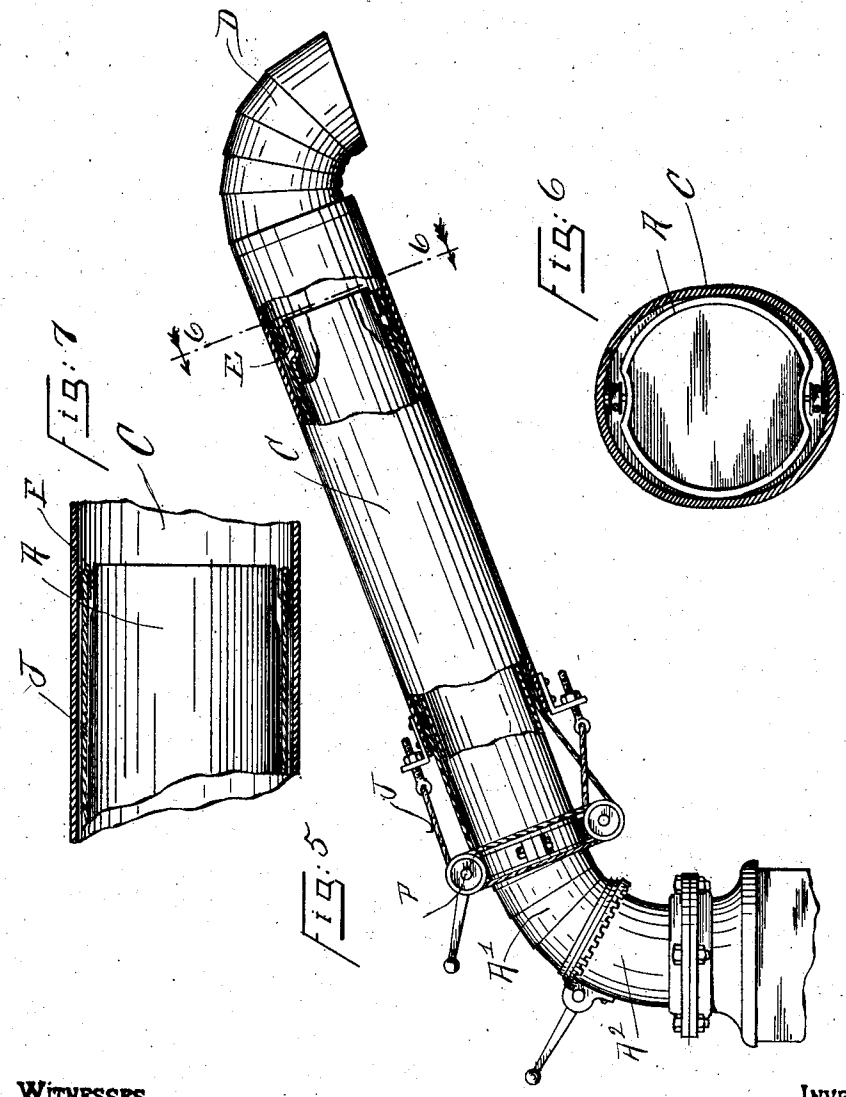


Fig. 1

Fig. 5

Fig. 6

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No. 761,761. Patented June 7, 1904.

UNITED STATES PATENT OFFICE.

GEORGE F. CONNER, OF PORT HURON, MICHIGAN.

CONVEYER-CHUTE.

SPECIFICATION forming part of Letters Patent No. 761,761, dated June 7, 1904.

Application filed March 20, 1903. Serial No. 148,662. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. CONNER, a citizen of the United States of America, and a resident of the city of Port Huron, county of St. Clair, and State of Michigan, have invented certain new and useful Improvements in Conveyer-Chutes, of which the following is a full, clear, and exact specification.

This invention relates to improvements in conveyer-chutes, and especially to that class comprising telescoping or extension chutes adapted for blowers.

The invention consists in the matters hereinafter set forth, and more particularly pointed out in the appended claims.

As hereinafter illustrated and described, a form of conveyer is shown which is especially adapted for use as a straw-stacker for threshing-machines or the like, although obviously it may be adapted to other uses.

Referring to the drawings, Figure 1 is a view, partly in elevation and partly in section, of a conveyer-chute which embodies the principal features of the invention. Fig. 2 is a view in cross-section through the chute on line 2 2 of Fig. 1. Fig. 3 is a view in cross-section on line 3 3 of Fig. 1. Fig. 4 is a fragmentary view showing the outer end of the main trunk. Fig. 5 is a view, partly in elevation and partly in section, of a modified form of chute. Fig. 6 is a view in cross-section on line 6 6 of Fig. 5. Fig. 7 is a fragmentary view of the outer end of the chute illustrated in Fig. 6. Fig. 8 is a view of an outer sheave and portion of the runway. Fig. 9 is a fragmentary view of a friction-roll. Fig. 10 is a detail view showing method of attaching the flexible connections.

Referring to the drawings, A represents the main section or trunk of a conveyer, which is movably secured by connecting sections A' A^2 to a base B. The means of connection between the base and trunk may be of any form or design. Preferably they should be adapted to allow adjustment of the trunk in both horizontal and vertical planes and do not form an essential part of this invention. As herein indicated, the base B is adapted to be secured to the frame of a separator or like machine. Said trunk A is preferably cylindrical in cross-section, although it may be elliptical or the like.

A telescoping section C, hereinafter designated the "extension," has longitudinal sliding engagement with the trunk A. The outer end *c* of said extension may, if desired, carry a deflector, as the hood D. The inner diameter of said extension C approximates the outer diameter of the trunk A and its periphery conforms to the shape of the trunk. The two parts are held in any required position by the following mechanism: Sheaves E are rotatively secured to the outer end of the chute A at diametrically opposite points. In a preferred method of construction a collar *a* is provided, preferably of cast or malleable iron or the like, of sufficient stiffness to retain its shape under lateral pressure. The sheaves are mounted in said collar at opposite extremities of its vertical diameter, so as to revolve in a vertical plane. A pocket *a'* or sheave-hole for each of said sheaves is provided in said collar, each pocket *a'* projecting slightly into the interior of the chute, the metal of the trunk being bent to form a close joint around it. The extension in the preferred construction comprises two curved sheet-iron plates united throughout their length by channel-irons c^2, which are provided with lateral flanges, to which the margins of the plates may be conveniently attached by rivets or other suitable means. The inside dimensions of the channel-irons are such as to permit them to run freely over the sheaves at the outer end of the trunk, the upper channel resting upon the sheave-flanges. A pair of parallel drums F F' transverse to the vertical diameter of the trunk A are rotatively secured at its lower end in any suitable manner. The yoke G, extending around the trunk and secured thereto in a suitable manner, affords one convenient means of mounting the drums. Said drums are rotated together by any connecting mechanism which will insure unison of movement. Preferably this comprises sprockets H and chain H', the drums being manually rotated by a crank H^2, secured to one of the drum-journals. Flexible connections J, of wire, steel, hemp rope, or the like, are each secured by either end to the inner end of the exten-

sion at the opposite extremities of its vertical diameter, so as to be in alinement with the drums and sheaves. Said flexible members are each given a few turns around the respective drums and passed through the corresponding sheaves at the outer end of the trunk, clearance being afforded for the ropes in the preferred construction by the channel-iron of the extension through which they are passed. It will be understood that the upper and lower connections are so made as to work in unison, one of the ropes being crossed to impart the desired motion.

In order to take up any slack in the rope or cable, one of the ends may be secured to an eyebolt K, which has screw-threaded engagement in lugs L L′, secured by suitable means to the end of the extension, check-nuts *k* securing the eyebolts from accidental displacement.

A rider or friction-roll M may be journaled on the upper lug L to have rolling contact with the flexible connections which pass beneath it or with the trunk. The other lug L′ may carry a friction-roll N, which is adapted to bear against the trunk, and thereby facilitate the sliding of the two parts on each other. The roll is especially advantageous when the extension is at the outer end of its throw.

The binding and cramping which are prevalent in the form of conveyer-chutes now in use, so far as known to me, are eliminated to a large degree by the double rope connections acting at opposite points of the periphery of the extension, the unison movement of the two giving an even pull upon the extension at its lower end, so that it does not tend to stick. In case the angle of elevation of the trunk is very slight or the extension is nearly at its outer limit of motion the weight of the unsupported end tends to cause the extension to bind the trunk against the upper side of and at the lower inner end of the extension. The two ropes apply the power directly in line with these points of greatest resistance, and therefore readily move the extension, while the roller action of the upper sheave and the lower rider insures ease of operation. The channel-irons which embrace the sheaves tend to prevent any lateral shifting or twisting of the parts upon each other, so that the hood may be readily deflected without causing sticking of the telescoping surface.

The extension may be made with its perpendicular diameter long enough to allow the ropes to pass between the extension and the trunk without the use of the channel-irons, although the latter are preferable. In such construction the outer sheaves may be turned to rotate in planes parallel to the horizontal diameter of the extension. They may be mounted directly on the sheet-metal end of the extension, which is indented to form retaining-pockets, but the rigidity afforded by the collar of the improved construction makes it preferable.

The flexible connection may comprise a single rope attached as shown, but passing around both drums and having the proper lead through guide-sheaves, so as to be attached at the opposite points of the extension. The connecting mechanism of the drums may be omitted in such instance.

The two rope connections at opposite points of the extension support the latter when the trunk is elevated appreciably, so that it hangs as though in a rope-stirrup, and therefore does not cramp or bind.

Obviously many details of construction may be varied without departing from the spirit of the invention, and I do not limit myself to any particular form or arrangement of parts except as set forth in the appended claims.

I claim as my invention—

1. A conveyer-chute comprising a trunk, an extension telescoping thereon, drums oppositely secured to said trunk, adapted to rotate in unison, sheaves rotatively secured to said trunk, and flexible extending means secured at diametrically opposite points to the extension, passing around said drums and sheaves.

2. A conveyer-chute comprising a trunk, an extension telescoping therewith, extending means comprising plural ropes secured to the lower part of said extension at diametrically opposite points, passing around sheaves secured at diametrically opposite points on the trunk, and means adapted to impart unison movement to said ropes.

3. A conveyer-chute comprising a trunk, an extension telescoping thereon, drums oppositely secured to said trunk, mechanism adapted to rotate said drums in unison, and extending means comprising plural ropes secured to said extension at diametrically opposite points engaging drums and sheaves on the trunk.

4. A conveyer-chute comprising a base, a trunk secured thereto, movable in transverse planes, an extension telescoping with said trunk, drums oppositely secured on the lower end of said trunk, operatively connected to rotate in unison, sheaves on the outer end of said trunk in alinement with said drums, and plural extending ropes secured near the lower end of said extension at diametrically opposite points, passing around the drums and said sheaves.

5. A conveyer-chute comprising a trunk, an extension telescoping therewith, plural extending ropes secured to the lower end of the extension at diametrically opposite points traveling around sheaves near the outer end of the trunk, means for independently adjusting the tension of said ropes and means for imparting unison motion thereto.

6. A conveyer-chute comprising a trunk, an extension telescoping therewith, plural ex-

tending ropes secured to the extension at diametrically opposite points engaging sheaves on the trunk, and drums rotating in unison, engaging said ropes, said trunk and extension being adapted to give clearance for the leading of the ropes between them.

7. A conveyer-chute comprising a trunk, an extension having telescoping engagement therewith, oppositely-disposed runways extending longitudinally of said extension, sheaves secured to said trunk projecting into said runways, a pair of drums rotatively secured to the lower part of said trunk approximately in alinement with said sheaves and runways, and flexible connections secured to the extensions passing around said sheaves and drums and through said runways, adapted to coact upon said extension.

8. A conveyer-chute comprising a trunk, an extension having telescoping engagement therewith, runways oppositely disposed in said extension, sheaves rotatably secured near the outer end of said trunk projecting into said runways, drums rotatably secured to said trunk in approximate alinement with said runways and sheaves, and plural flexible connections, each comprising a rope or the like, passing around said drums and said sheaves, and returning through said runways to said extension, and take-up connections securing the ends of said ropes to said extension at diametrically opposite points.

9. A conveyer-chute comprising a trunk, drums adapted to rotate in unison, secured to said trunk, an extension having telescoping engagement with said trunk comprising oppositely-curved plates secured by channel-irons uniting their proximate margins, sheaves rotatively secured on said trunk remote from said drums and in alinement therewith, projecting into said channel-irons, and flexible connections, each adjustably secured at one end to said extension, passing around the adjacent drum and corresponding sheave and returning through said channel, the other end of said flexible connection being secured to said extension near to the point of connection of the adjustably-secured end.

10. A conveyer-chute comprising a trunk, an extension having oppositely-disposed runways extending longitudinal of the extension, sheaves at the outer end of said trunk, registering with said runways, the flanges of said sheaves being adapted to bear on the bottoms of said runways, friction-bearings at the inner end of said extension in substantial alinement with said runways, flexible extending means between said trunk and extension passing through said runways around said sheaves, means to impart unison motion to said extending means, and means to maintain uniform tension in said extending means.

11. A conveyer-chute comprising the combination with a base, a trunk secured to said base, having independent movements thereon in transverse planes, and an extension having telescoping engagement with said trunk, of plural, flexible extending means consisting of ropes or the like, each secured at its ends by adjustable tension means to said extension at diametrically opposite points, engaging sheaves on said trunk, and coacting on said extension at points circumferentially remote from each other, and means to impart unison movement to said extending means.

12. In a conveyer-chute comprising a trunk and an extension having telescoping engagement therewith, an extending member comprising a flexible connection secured at one end to said extension, passing around a pulley on the outer end of said trunk, and a drum on said trunk remote from said pulley, and an adjustable tension member securing the other end of said flexible connection to said extension.

13. In a conveyer-chute comprising a trunk and an extension having telescoping engagement therewith, extending means adapted to maintain said parts in longitudinal engagement and to extend and retract said extension, comprising flexible connections, each connected by one end to said extension, passing between said trunk and extension around pulleys on said trunk within said extension, and around drums on said trunks, tension-adjusting members securing the other ends of said connections to said extension, and friction-rolls between said extension and trunk.

In testimony whereof I have hereunto signed my name to this specification in presence of two subscribing witnesses.

GEORGE F. CONNER.

Witnesses:
H. B. HOYT,
W. H. BODELL.