(No Model.)

S. B. HART.

ELEVATOR FOR GRAIN SEPARATORS.

No. 434,082. Patented Aug. 12, 1890

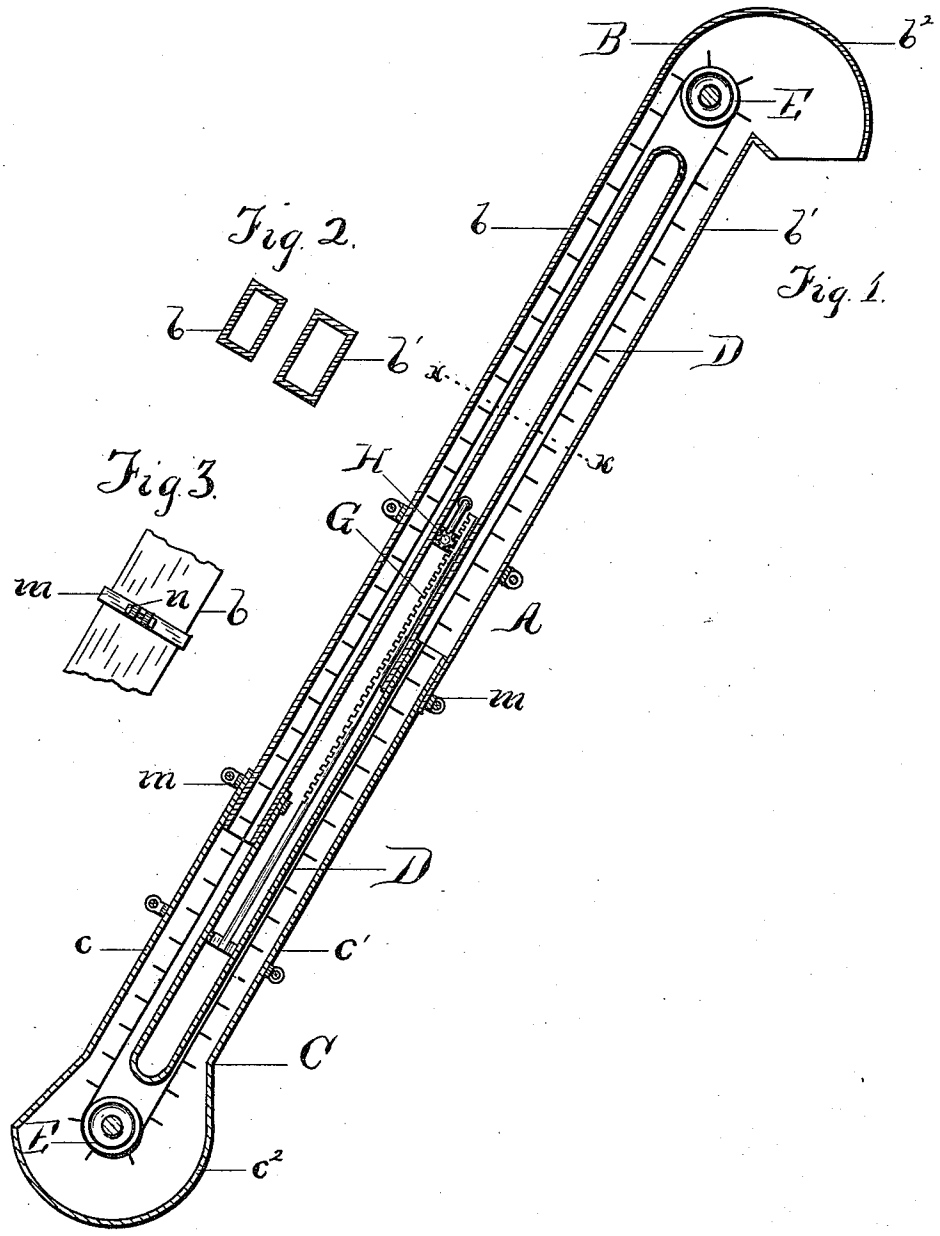

Fig. 1.

Fig. 2.

Fig. 3.

Witnesses
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STACY B. HART, OF PEORIA, ILLINOIS.

ELEVATOR FOR GRAIN-SEPARATORS.

SPECIFICATION forming part of Letters Patent No. 434,082, dated August 12, 1890.

Application filed May 18, 1889. Serial No. 311,287. (No model.)

To all whom it may concern:

Be it known that I, STACY B. HART, a citizen of the United States of America, residing at Peoria, in the county of Peoria and State of Illinois, have invented certain Improvements in Elevators for Grain-Separators, of which the following is a description.

In the accompanying drawings, Figure 1 is a longitudinal section of my improved elevator; Fig. 2 a cross-section of same in line $x\ x$ of Fig. 1; and Fig. 3 a detail view showing the clamping-band for securing the elevator-tube in any position desired.

In a patent granted to me April 30, 1889, Serial No. 285,000, I have described an elevator-tube for grain-separators composed of two sections adapted to "telescope" the one in the other, and have stated therein the purposes of and advantages derived from such construction.

My present invention consists in certain improvements upon the construction described in said patent, by means of which I gain certain additional advantages. These will be set forth in connection with the description of the improvements themselves, and the essential features of the latter definitely pointed out in the claims appended hereto.

Referring to the drawings, wherein the elevator-tube is lettered A, the upper and lower sections thereof distinguished by their respective letters B and C, the elevator-chain marked D, and the sprocket-wheels which carry it E and E′, respectively, my first improvement consists in constructing the sections B C in the form of two separate tubes $b\ b'$, $c\ c'$, each pair of tubes uniting at one end to form a common box or receptacle $b^2\ c^2$, and each tube of each section telescoping with the corresponding tube of the other section. This, it will be seen, gives me two separate continuous passages between the ends of the elevator-tubes, one for the ascending and the other for the descending portion of the chain. By this construction I gain two important advantages: first, the tubes $b\ b'$, $c\ c'$ can be placed at any distance apart which may be desired, giving ample room between the two portions of the elevator-chain for any size of sprocket-wheel E E′ which may be necessary to furnish the requisite strength, and, second, these tubes, being entirely independent between the ends of the elevator, may be made of different strength. Thus the tube which contains the ascending portion of the chain, and hence must support the load carried upward thereby, can be made much stronger than the other, which acts merely as a guide and cover for the descending portion of the chain. The provision of separate tubes for these two portions of the chain also enables me to make an additional improvement, which consists in so arranging the telescoping members that the sections thereof shall project the one into the other in the direction in which the chain travels. Thus in the tube $b'\ c'$, which carries the ascending chain, the lower part c' projects upward into the upper part b', while in the tube $b\ c$, which carries the descending chain, the upper part b projects downward into the lower part c. This prevents the chain and attachments thereof from catching upon the ends of the inner tubes.

A still further improvement, which is also dependent upon the "double-tube" construction, is the location of the device by means of which the elevator is shortened or lengthened between the tubes $b\ c$ and $b'\ c'$, and hence in the center line of the draft in changing the adjustment of the sections B C. The device here shown is a rack G and pinion H, the former attached to the section C of the elevator and the latter to the section B of the same. Any other of the numerous devices in common use for the purpose may be employed in place of the rack and pinion, if preferred. In turning the pinion H the pull upon the rack G is resisted by the weight of the movable section of the elevator and by the friction between the parts b and c and b' and c'. This resistance, it will be seen, is balanced upon either side of the rack G, and hence the cramping which is incident to the location of such device upon one side of the elevator is obviated.

The sections B C are clamped in any desired adjustment by the hoops or bands $m\ m$ and tightening-screws $n\ n$, Fig. 3, substantially the same as in my single-tube elevator described in the patent above referred to.

The tubes $b\ c\ b'\ c'$ may be made round, square, or of any form desired. I find it

cheapest and best to make them rectangular in cross-section, as shown in Fig. 2, the dimensions being about three by six inches.

I claim as new and desire to secure by Letters Patent—

1. In combination with the elevator-chain D, the elevator-tube A, composed of the double telescoping end sections B C, arranged at the point where they overlap with the inner tube, in each case projecting into the outer in the direction in which the chain travels, as and for the purpose stated.

2. The combination of the elevator-tube constructed in the double telescoping sections B C, with an adjusting device located between the forks of the said sections.

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