(No Model.)

W. W. HEWITT.

SCREW CONVEYER.

No. 265,078. Patented Sept. 26, 1882.

Fig. 2.

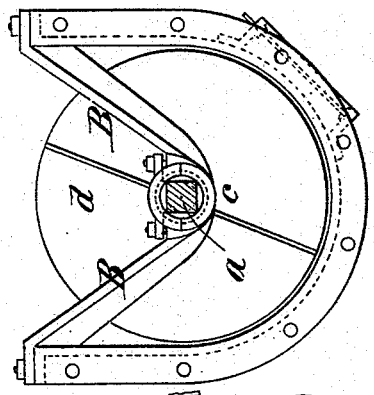


Fig. 5.

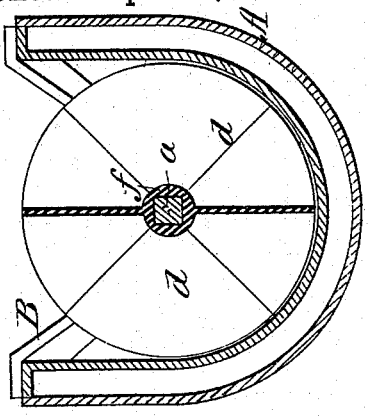


Fig. 1.

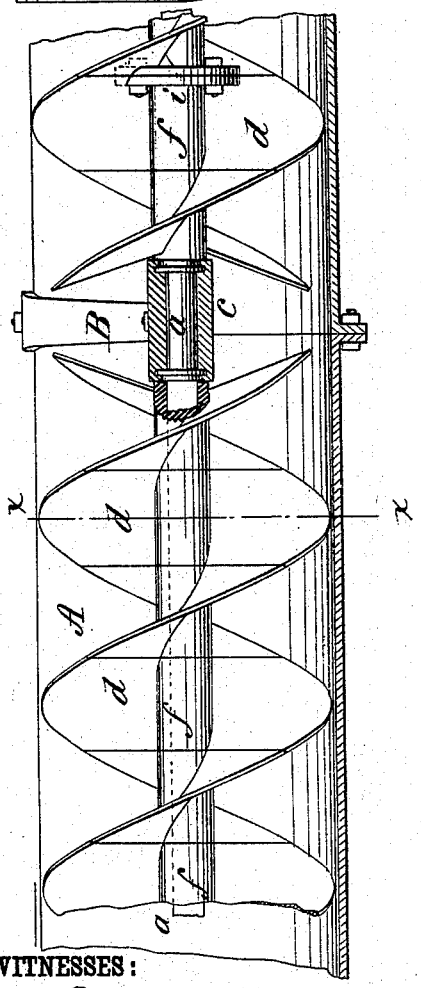


Fig. 4.

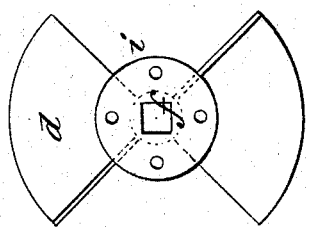
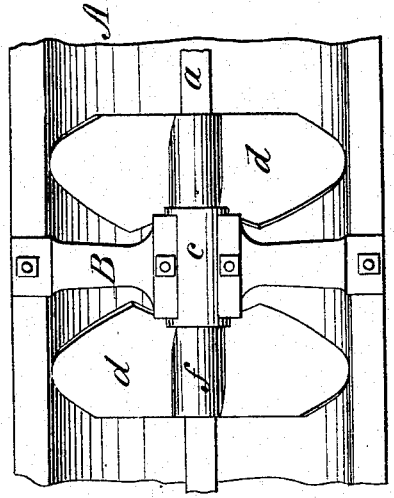


Fig. 3.



WITNESSES:

Donn Twitchell.

b. Bedgwick

INVENTOR:

W. W. Hewitt

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM WALTER HEWITT, OF SWANSCOMBE, COUNTY OF KENT, ENGLAND.

SCREW-CONVEYER.

SPECIFICATION forming part of Letters Patent No. 265,078, dated September 26, 1882.

Application filed June 29, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM WALTER HEWITT, of Swanscombe, in the county of Kent, England, have invented a new and useful Improvement in Screw-Conveyers, of which the following is a full, clear, and exact description.

My improvements relate to conveyers for carrying cement, grain, shingles, ballast, or other granular substances; and the invention consists in certain features of construction whereby I obtain a conveyer of durable character and of great strength, as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional elevation of the conveyer of my improved construction. Fig. 2 is an end view of the same. Fig. 3 is a partial plan view. Fig. 4 is an end view of one of the blade-sections, and Fig. 5 is a cross-section of the conveyer on the line *x x* of Fig. 1.

The screw can be formed of one, two, or more blades, according to the work required of it. The diameter can be as great as required, and the thickness of the blades in proportion to the work, from one-eighth of an inch upward. The blades are cast of any metal; but I prefer Bessemer steel.

A is the U-shaped trough of the conveyer, of steel, wrought or cast iron, or other metal, as preferred.

B are the hangers for the shaft, which may be cast in one piece with the trough, or separately, and bolted on, so that they form ties or strengthening-pieces for the trough. These hangers are made narrow in width, but deep, so as to obtain the necessary strength and at the same time occupy as little space as possible between the peripheries of the blades, so as not to interfere in any degree with the travel of the material. The trough is made in sections, with flanges at their ends, by which the sections are secured together by bolts in the usual manner. If necessary, the U-shaped trough may be provided with an outer casing, so as to form a hollow space, as shown in Fig. 5, for receiving hot or cold water, steam, or air, as may be preferred, and thus utilize the trough or conveyer as a drier of corn or other materials, or, when cold water is used, as a cooler for such things as cement.

a is the shaft, supported in bearings *c* on the hangers B.

d are the flights or blades of the propeller, which are cast in sections, with suitable hubs, *f*. The shaft is made either square or polygonal, and the hubs of the propellers are cast with a square or polygonal aperture, which, being made true, allows the hubs to be driven upon the shaft tightly, so as to dispense with screws, keys, or other devices for retaining them in place. The several sections or propellers may be cast of any suitable diameter and corresponding with the trough, and, being placed upon the shaft, they form a continuous conveyer of one, two, or more blades, as the case may be. To facilitate construction the propeller-sections *d* are formed at suitable intervals with couplings *i*, that are cast on the hubs *f*, so as not to interfere with the continuity of the blades. These couplings are for connecting the conveyers in lengths, or where more than one length of shafting is required.

It is evident that both the trough and the conveyer-blades can be made of any desired strength, according to the work that is to be done, and in case of breakage repairs can easily be made.

The caps of the bearings are formed with internal recesses at the ends, and the shaft *c* provided with flanges which take into the recesses, so as to exclude dust and grit from the bearings. The hubs of the propellers next to the bearings are cut away, as shown in Fig. 1, so as to obtain a long bearing for the shaft. The trough is provided with outlets or traps secured upon the outside at suitable intervals.

Conveyers of this construction are superior to the ordinary conveyers made of sheet-iron, which are generally of small diameter and run at high speed, for the reason that there is no limit in the strength, and they can be made of large size to be run at low speed, so as to do more work in less time.

This conveyer is, further, of inexpensive construction, and can be readily repaired in any portion that may become broken.

If desired, the conveyer can be placed at an angle, so as to elevate materials, the angle being more or less according to the consistency of the material. In this manner the conveyer may be used for elevating sewage in place of the pumps usually employed for that purpose. The pitch of the propellers and the speed at which the conveyer is driven may be varied according to the work to be done. In long-distance conveyers the diameter of the blades and the size of the shafting should be large at the end where power is applied.

The conveyer, constructed as described, may be used as a cleaner or polisher for all kinds of grain and like materials.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In conveyers, the trough A, provided with an outer jacket, so as to form a space at the outside of the trough for receiving steam, hot air, or water, as and for the purposes specified.

2. In screw-conveyers, the U-shaped trough A, having the hangers B, with their upper ends resting thereon, and converging at their lower ends to support the conveyer-shaft boxes or bearings centrally in said trough, substantially as and for the purpose set forth.

3. The conveyer-sections *d*, formed with couplings *i*, substantially as shown and described.

WILLIAM WALTER HEWITT.

Witnesses:
GEO. COLHURST,
Solicitor, Gravesend, Kent, England.
W. A. HOMEWOOD,
His Articled Clerk.