J. H. BJORKHOLM.

SACK TURNER.

APPLICATION FILED SEPT. 10, 1912.

**1,068,729.** Patented July 29, 1913.

2 SHEETS—SHEET 1.

Fig. 1.

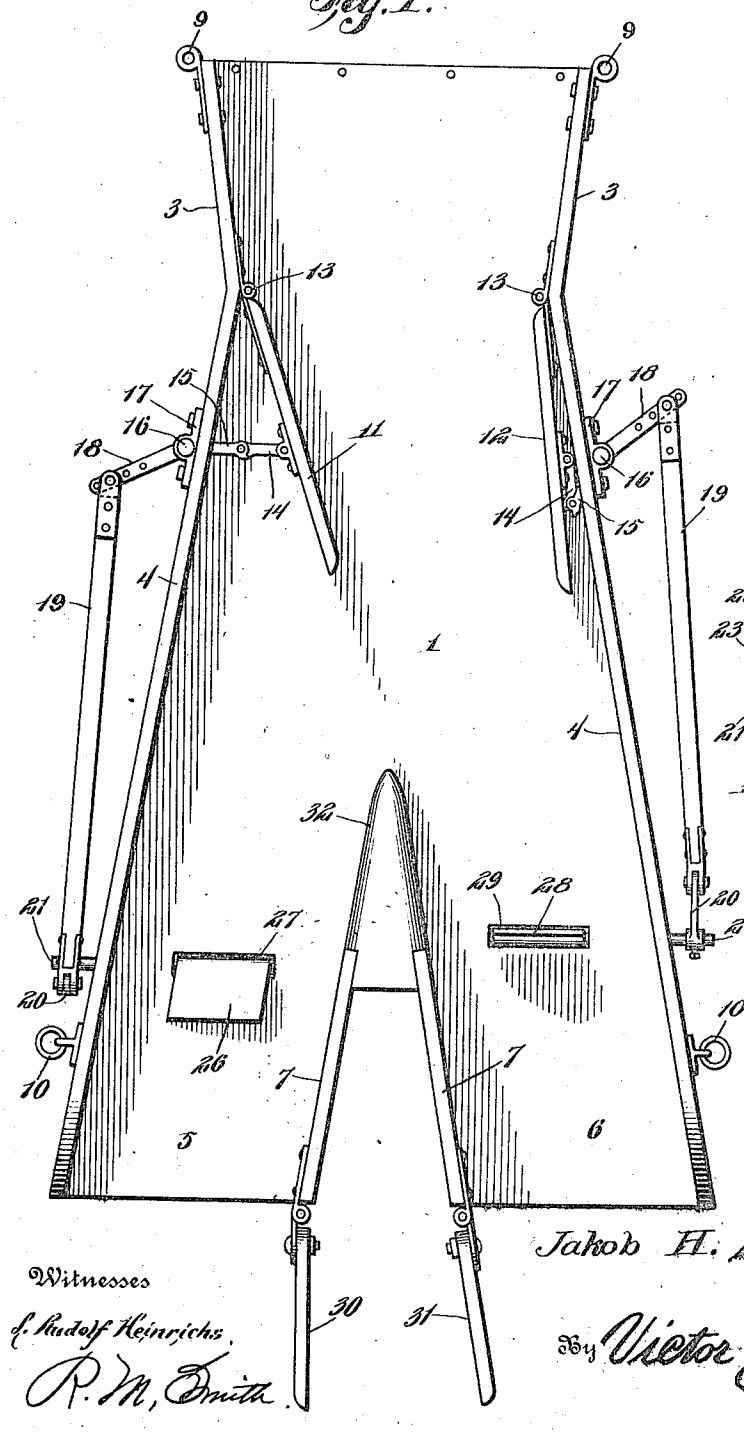
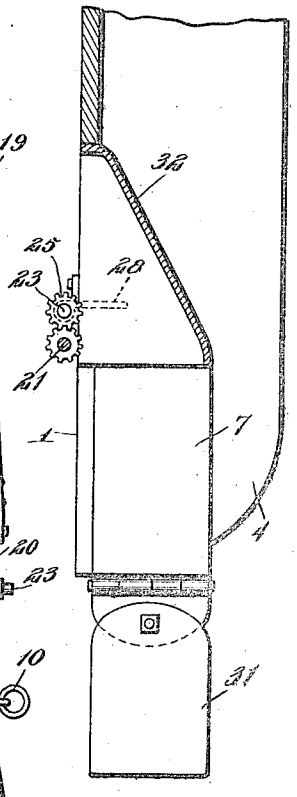



Fig. 5.




Witnesses

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2 SHEETS—SHEET 2.

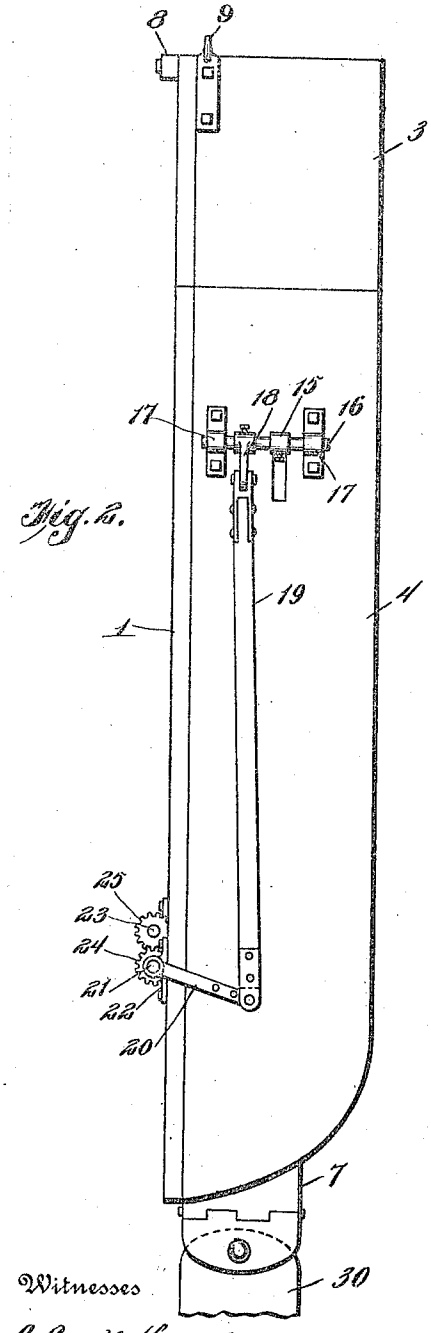



Fig. 2.

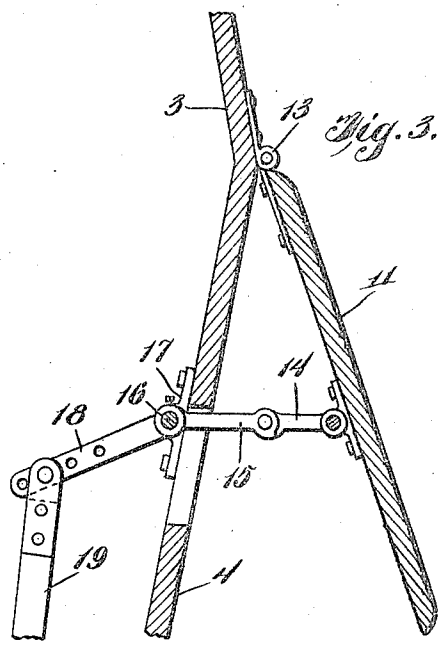



Fig. 3.

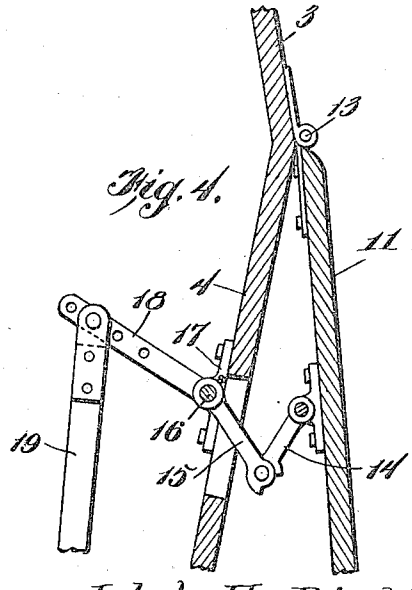



Fig. 4.

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# UNITED STATES PATENT OFFICE.

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## SACK-TURNER.

1,068,729. Specification of Letters Patent. Patented July 29, 1913.

Application filed September 10, 1912. Serial No. 719,683.

*To all whom it may concern:*

Be it known that I, JAKOB H. BJORKHOLM, a citizen of the United States, residing at Tacoma, in the county of Pierce and State of Washington, have invented new and useful Improvements in Sack-Turners, of which the following is a specification.

This invention relates to sack turners, the object in view being to provide a device of the class referred to, which is capable of being suspended and secured in any convenient or desired point upon a vessel, building or other structure for rapidly handling sacks of flour, wheat, and the like, and alternately deflecting the sacks to one or the other of divergent chutes or runways, without the aid of an attendant.

With the above and other objects in view, the invention consists in the construction, combination and arrangement of parts, as will be hereinafter more fully described, illustrated in the accompanying drawings, and pointed out in the claims hereunto appended.

In the drawings: Figure 1 is a plan view of a sack turner, embodying the present invention. Fig. 2 is a side elevation of the same. Fig. 3 is a detail section, showing the toggle lever arrangement, showing the deflector thrown into its operative position. Fig. 4 is a similar view, showing the lever folded into its inoperative position. Fig. 5 is a central vertical section taken adjacent to the gears and also showing one of the trips.

The sack turner contemplated in this invention comprises a base or bottom 1, upon which all of the working parts of the device are mounted. This base is of the shape shown in Fig. 1, and also comprises the inwardly converging sides 3, forming the contracting entrance throat of the device, and the downwardly diverging sides 4 which, at their lower ends, form the outer side walls of the diverging runways or chutes 5 and 6, the inner walls of the runways being represented at 7.

Extending across the receiving edge of the throat is a reinforcing strip or metal strap 8, riveted or otherwise secured to the base 1, and having fastened thereto ring bolts adapted to receive suspending cords or cables, whereby the device as a whole may be swung on board of a vessel and held in any desired position. The device is also provided adjacent to its lower end with eye bolts or rings 10 adapted to receive stay ropes or cables for still further supporting the turner as a whole in position.

Arranged just below the narrowest portion of the single entrance throat are opposite deflectors 11 and 12, the same being connected by hinges 13 to the sides of the turner. Connected to each deflector 11 are toggle levers 14 and 15, the lever 15 being mounted fast on a rock shaft 16 mounted in suitable bearings 17 on one of the sides 4 of the device, while connected fast to the same shaft 16 is a lever arm 18, to the extremity of which is pivotally connected a connecting rod 19 extending downward and pivotally connected to a lever arm 20 on the outer end of a trip shaft 21. This trip shaft is mounted in suitable bearings 22 on the back of the bottom or base 1, as shown in Fig. 2.

The connections just hereinabove described are duplicated on the other side of the turner and coöperate with a second trip shaft 23 which is arranged in a plane parallel to the shaft 21, but turns in a reverse direction therefrom, the said shafts 21 and 23 being provided, respectively, with spur gear wheels 24 and 25 which intermesh and therefore cause the simultaneous rotation of said trip shafts in opposite directions. It will now be seen that when one of said shafts is operated upon, the connections between the said shafts and the deflectors are moved in opposite directions, so that as one deflector 11 is moved inward, the other deflector 12 is moved outward, and vice versa. In order to enable sacks to automatically operate said deflectors, the shaft 21 is provided with a trip 26 fast thereon and working through an aperture 27 in the base 1. The shaft 23 is likewise provided with a trip 28, working through an aperture 29 in the base 1. It will now be seen that as a sack passes down one of the runways or chutes 5 or 6, it will act on the upstanding trip and reverse the positions or angles of the deflectors 11 and 12, causing the next sack to pass down the other runway and in turn operate upon the other trip, thereby again reversing the angles of the deflectors. In this way, the sacks are automatically deflected first to one runway and then the other.

At the discharge end of the turner, pivoted tail gates 30 and 31 are arranged, so as to extend the control over the sacks passing through the runways and direct the same to

the proper points. These gates may be made of any desired length.

32 designates a divider shoe which connects the upper ends of the inner walls 7, and is chambered to fit over and form a housing for the gear wheels 24 and 25, thereby inclosing and covering said gear wheels, avoiding any possibility of the sacks coming into contact therewith and being injured.

Heretofore, it has been necessary for a man to stand at the discharge end of a chute and manually deflect the bags to one side or the other, requiring great dexterity and constant attention on his part. The device hereinabove described automatically takes care of the sacks and alternately deflects them first to one side and then the other, without any attention whatever.

What is claimed is:

1. A sack turner, comprising a base, a single entrance throat, divergent runways communicating with the base of said throat, sack deflectors pivotally mounted at opposite sides of the throat, sack actuated trips arranged in said runways, and deflector operating connections controlled by said trips, and embodying trip shafts geared to turn in opposite directions and each having one of the trips fast thereon.

2. A sack turner, comprising a base, a single entrance throat, divergent runways communicating with the base of said throat, sack deflectors pivotally mounted at opposite sides of the throat, sack actuated trips arranged in said runways, and deflector operating connections controlled by said trips, and embodying a pair of trip shafts arranged in parallel planes and each carrying one of said trips, intermeshing gear wheels fast on said shafts, and a divider shoe forming a housing for said gear wheels.

3. A sack turner, comprising a base, a single entrance throat, divergent runways communicating with the base of said throat, sack deflectors pivotally mounted at opposite sides of the throat, sack actuated trips arranged in said runways, and deflector operating connections controlled by said trips, and embodying toggle levers connected with the deflectors, trip shafts carrying the trips and geared to turn in opposite directions, and connecting rods interposed between the lever arms and the trip shafts and toggle levers.

In testimony whereof I affix my signature in presence of two witnesses.

JAKOB HJALMAR BJORKHOLM.

Witnesses:
JOHN P. PIPER,
CARL PETER MAGUESSTON.