No. 742,193. PATENTED OCT. 27, 1903.

C. W. HUNT.

DRUM FOR HOISTING OR OTHER PURPOSES.

APPLICATION FILED JULY 21, 1903.

NO MODEL.

Fig. 1.

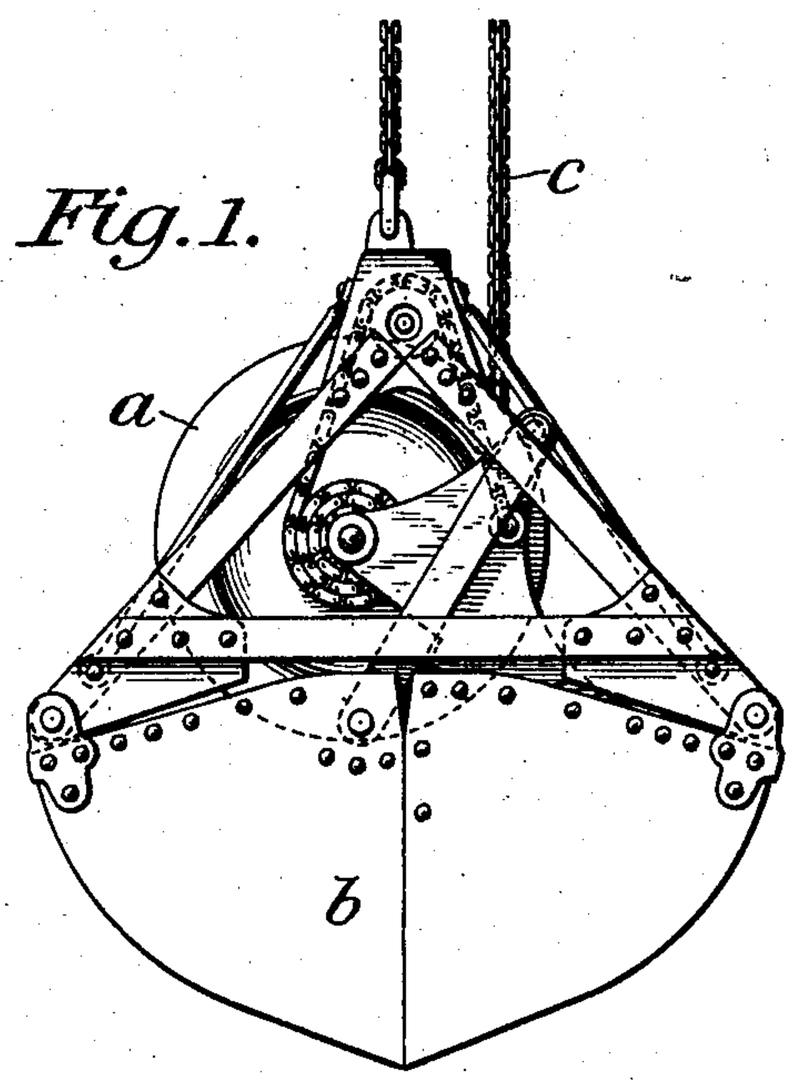


Fig. 2.

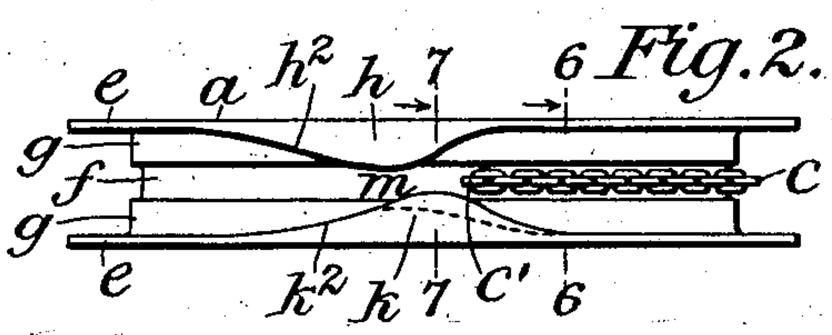


Fig. 6.

Fig. 7.

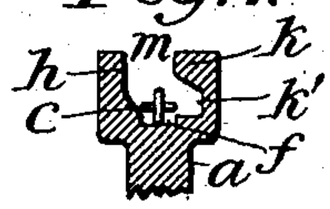


Fig. 3.

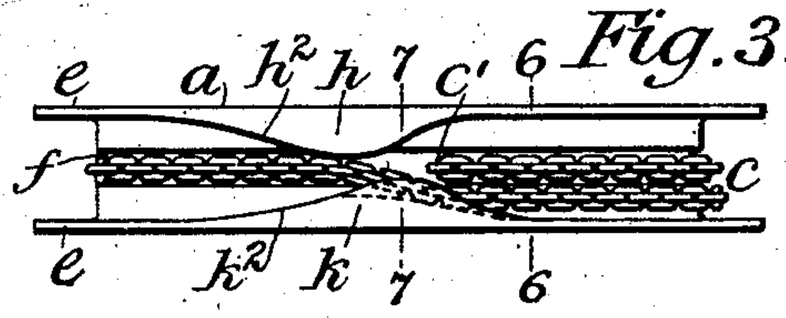


Fig. 8.

Fig. 9.

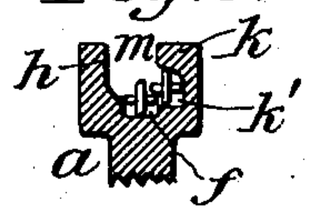


Fig. 4.

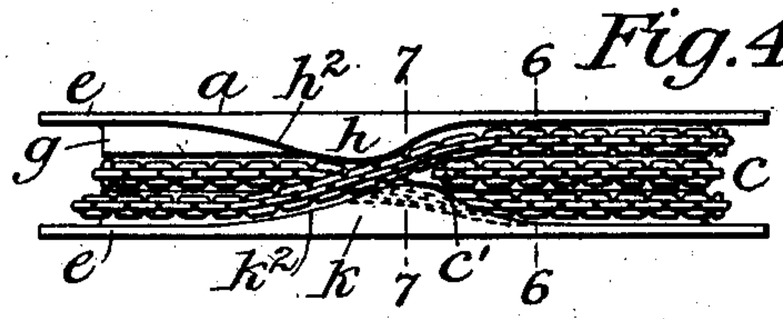


Fig. 10.

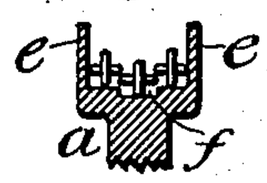


Fig. 11.

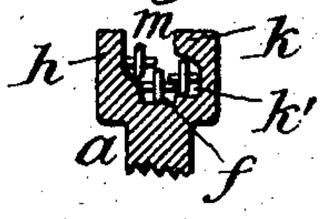


Fig. 5.

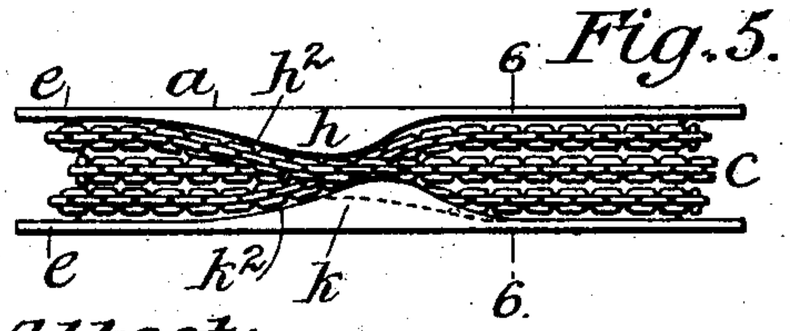
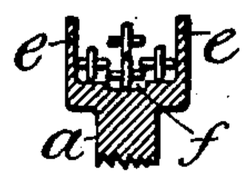


Fig. 12.



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No. 742,193. Patented October 27, 1903.

UNITED STATES PATENT OFFICE.

CHARLES WALLACE HUNT, OF WEST NEW BRIGHTON, NEW YORK.

DRUM FOR HOISTING OR OTHER PURPOSES.

SPECIFICATION forming part of Letters Patent No. 742,193, dated October 27, 1903.

Application filed July 21, 1903. Serial No. 166,437. (No model.)

To all whom it may concern:

Be it known that I, CHARLES WALLACE HUNT, a citizen of the United States, residing in West New Brighton, borough of Richmond, city of New York, State of New York, have invented certain new and useful Improvements in Drums for Hoisting or other Purposes, of which the following is a specification, reference being had to the accompanying drawings, forming a part hereof.

Steam-shovels are usually opened and closed through the medium of a chain which has a few turns about a drum mounted on the shovel. This drum is necessarily narrow to avoid both excessive weight and undue displacement of the chain from the central plane of the bucket. In the use of the ordinary drum successive turns of the chain are liable to pile one upon another, so that one turn eventually runs over the flange, thereby causing considerable trouble in the replacing of the chain.

It is the object of this invention to so form the drum used for the purpose referred to and for other similar purposes that the successive turns of the chain shall be properly guided as they are laid about the drum, with the result that the climbing of one turn upon another and the consequent running off of the chain over the edge of the flange are prevented. To this end the drum is provided at a suitable point in its periphery with a guide by which each turn is itself laid upon the drum, as directed, from one side to the other until all of the turns are laid upon the drum, while no single turn is allowed to be laid far from the central plane of the drum.

The invention will be more fully explained hereinafter with reference to the accompanying drawings, in which it is illustrated, and in which—

Figure 1 is a view in side elevation of a shovel equipped with the improved drum. Figs. 2, 3, 4, and 5 are plan views of the drum, on a larger scale, showing the guide and chain laid thereon, the several views showing the drum as each turn is laid thereon in succession. Figs. 6, 8, 10, and 12 are detail views in section on the plane indicated by the line 6 6 in each of the several views Figs. 2, 3, 4, and 5, and corresponding therewith, respectively, as to the disposition of the chain. Figs. 7, 9, and 11 are detail views in section on the plane indicated by the line 7 7 in each of the several views Figs. 2, 3, and 4, and corresponding therewith, respectively, as to the disposition of the chain.

The drum *a* is mounted as usual upon the frame of the shovel *b* and has connected therewith one end of the chain *c*, which is actuated in the usual manner. The shaft *d* of the drum is operatively connected with the parts of the shovel to open and close the same in the usual manner, which need not be more particularly referred to herein. The chain *c* usually has from three to four turns about the drum *a*, and the drum is therefore of a suitable width to accommodate three turns side by side, while the fourth turn, if required, is directed upon the middle one of the three turns previously laid and cannot climb upon either flange *e* of the drum. The barrel of the drum is preferably formed with a circumferential groove *f*, which is adapted to receive the first turn of the chain, as clearly shown at the right in Fig. 2 and at the left in Fig. 3. At each side of the central groove *f* the barrel is raised somewhat above the floor of the groove *f*, as shown clearly at *g* in Figs. 2 and 6, so that the second and third turns are raised somewhat above the first turn, as shown in Figs. 3, 4, 8, and 9. At a suitable point in the periphery of the drum is placed or formed the guide which serves to properly direct the successive turns of the chain. This guide comprises two cheek-pieces *h* and *k*, which may be formed with or secured to the flanges *e*, respectively, forming between them a throat *m* of peculiar cross-section, the cheek-piece *k* being undercut considerably to form a recess *k'*, which will accommodate one turn of the chain at the side of the turn already laid in the middle, as clearly shown in Figs. 7 and 9. The other cheek-piece, *h*, is shaped to crowd the third turn down toward the turn first laid in the middle, as shown in Fig. 11. Both cheek-pieces are extended well toward the middle of the drum, so as to leave between them a space not substantially wider than the diameter of the chain, and the proximate ends of the cheek-pieces, or those which first meet the chain as it is laid upon the drum, as at h^2 and k^2, gradually approach the central

plane of the drum and are well rounded off, so that each turn of the chain as it comes in contact with one face or the other shall be directed toward the opposite side of the drum without being permitted to climb upon either cheek-piece.

The functions of the several features of the cheek-pieces will be more clearly understood upon reference to the several detailed figures of the drawings. Thus Fig. 2 shows the chain with its end secured in the shallow groove *f*, preferably near the cheek-pieces *h* and *k*, as shown at *c'* in Fig. 2. As the first turn of the chain about the drum is completed and the chain approaches the cheek-piece *h*, which projects well toward the central point of the drum, the chain is by contact with the proximate face of said cheek-piece *h* directed toward the other side of the drum, so that at the commencement of the second turn of the chain it shall slip over the first turn and lie at one side of the same, as shown in Figs. 3, 8, and 9. The recess *k'*, cut beneath the overhang of the cheek-piece *k*, permits the second turn of the chain to enter the same at one side of the first turn and is substantially filled by said second turn, so that no later turn can be laid therein. The second turn of the chain is then completed upon the floor *g* at one side of the groove *f*, and as it comes in contact toward the completion of the second turn with the proximate face k^2 of the cheek-piece *k* it is directed thereby toward the opposite side of the drum, as clearly shown in Fig. 4, and slips from the first turn to the floor at one side thereof, as shown in Fig. 10. It will be observed by reference to Fig. 11 that the third turn of the chain will be guided by the cheek-piece *h* to the top of the first turn, because of the fact that the space at the bottom of the groove in cheek-piece *k* is already occupied by the second turn, and the chain must therefore follow the direction given by the proximate face of the cheek-piece *k* and lie upon the first turn. The position of the chain already laid upon the drum and the face of the cheek-piece *k* above the undercut portion correct the tendency of the chain to pass to the opposite side, so that it will be directed into the middle plane of the drum and so that as the fourth turn is laid upon the drum it shall rest in the middle plane of the drum upon the first turn of the chain, as shown in Figs. 5 and 12.

It will be understood that the precise configuration to be given to the cheek-pieces may vary somewhat, according to the size and character of the rope, cable, or chain to be laid upon the drum, and it will also be understood that the drum can be used wherever a comparatively narrow drum is required and is not restricted in its application to a steam-shovel, in connection with which it has been illustrated herein.

I claim as my invention—

1. A flanged drum having cheek-pieces adjacent to the flanges thereof to direct successive turns of the rope, chain or cable away from said flanges respectively, substantially as described.

2. A flanged drum having cheek-pieces adjacent to the flanges thereof and forming between them a narrow throat having a width substantially equal to the diameter of the rope, chain or cable to direct successive turns of the rope, chain or cable away from said flanges respectively, substantially as described.

3. A flanged drum having cheek-pieces adjacent to the flanges thereof and forming a narrow throat between them, one of said cheek-pieces being undercut to receive a turn of the rope, chain or cable, substantially as described.

4. A flanged drum having a barrel with a central groove and cheek-pieces adjacent to the flanges to direct successive turns of the rope, chain or cable away from said flanges respectively, substantially as described.

5. A flanged drum having a barrel with a central groove and cheek-pieces adjacent to the flanges to direct the rope, chain or cable from said flanges respectively, one of said cheek-pieces being undercut to receive the rope, chain or cable respectively, substantially as described.

This specification signed and witnessed this 13th day of July, A. D. 1903.

CHARLES WALLACE HUNT.

In presence of—

ANTHONY N. JESBERA,

LUCIUS E. VARNEY.