(No Model.)

T. H. APPLE.

SCRAPER AND ELEVATOR.

No. 306,207. Patented Oct. 7, 1884.

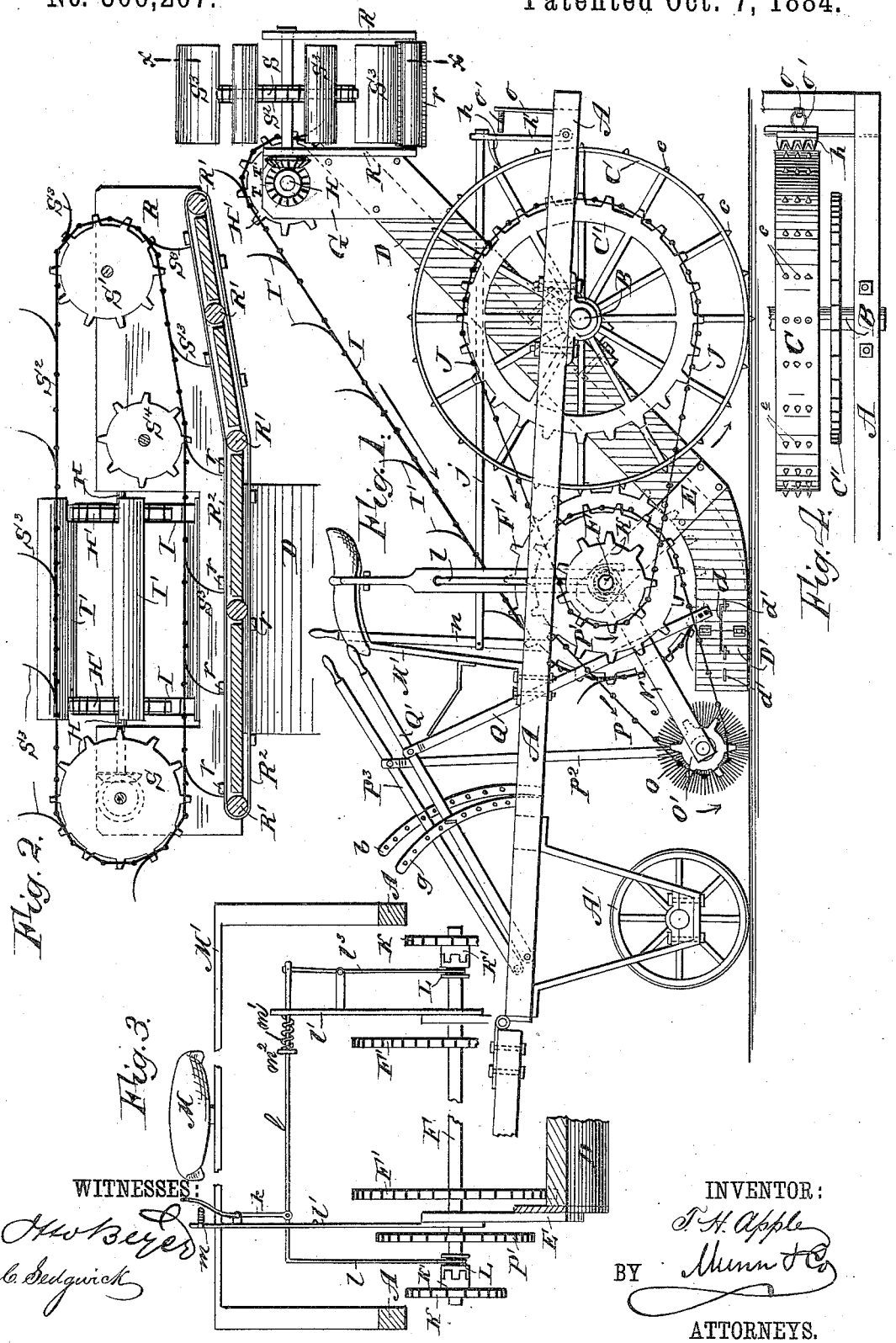

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

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TITUS HENRY APPLE, OF MEADVILLE, PENNSYLVANIA.

SCRAPER AND ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 306,207, dated October 7, 1884.

Application filed January 31, 1884. (No model.)

To all whom it may concern:

Be it known that I, TITUS HENRY APPLE, of Meadville, in the county of Crawford and State of Pennsylvania, have invented a new and Improved Scraper and Elevator, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved scraper and elevator for loading snow, earth, sand, sawdust, stones, or like materials into carts, cars, wagons, or other vehicles, which elevator is so constructed that it can be thrown into and out of operation very easily and rapidly.

The invention consists in various parts and details and combinations of the same, as will be fully described and set forth hereinafter.

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

Figure 1 is a longitudinal elevation of my improved scraper and elevator, parts being shown in section. Fig. 2 is a longitudinal sectional elevation of the same on the line *x x*, Fig. 1. Fig. 3 is a cross-sectional elevation of the same, showing the arrangement of the mechanism for throwing it in and out of gear. Fig. 4 is a plan view of one of the driving-wheels.

In a frame, A, a shaft, B, is journaled, on each end of which a wheel, C, is rigidly mounted, from the rim of which teeth *c* project, for the purpose of preventing the wheel from slipping on the ice, snow, &c. Between the wheels an elevator-trough, D, is pivoted or journaled on the axle B in such a manner that the trough will be about evenly balanced. The lower end of the trough is bent so as to project horizontally and to adapt it to rest on the ground. To the lower end of the elevator-trough wings D′ are hinged, which are adapted to swing laterally, and can be held in the desired position by means of hooks *d* and eyes *d′* on the sides of the trough and on the wings. The mouth of the elevator-trough can thus be adjusted to have a greater or less width, as may be desired. Near the lower bend of the elevator an arm, E, projects outward and upward from each side, in the upper ends of which arms E a shaft, F, is journaled. At the upper end of the elevator-trough an arm, G, projects upward from each side, on the upper ends of which arms G a shaft, H, is journaled.

On the shaft F two sprocket-wheels, F′, are rigidly mounted, and on the shaft H two smaller sprocket-wheels, H′, are rigidly mounted, and over the sprocket-wheels driving-chains I pass, which are connected by curved transverse elevator-blades I′, which are of such length that the outer edges of the blades I′ on the lower side of the chains I will rest on the elevator-trough.

On each end of the shaft B a sprocket-wheel, C′, is rigidly secured, over which driving-chains J pass, which also pass over sprocket-wheels K, which wheels K are loosely mounted on the shaft F, and are each provided with an inwardly-projecting clutch-hub, K′, which clutches K′ are adapted to engage with clutches L, mounted to slide longitudinally on the shaft F, but adapted to turn with the said shaft. The clutches L are connected with each other in some suitable manner, so that they can be both disengaged from the clutches K′ at the same time, or engaged with the clutches K′ at the same time.

In Fig. 3 I have shown a device for disengaging the clutches. The left-hand clutch, L, is held in the forked end of a rectangularly-bent rod, *l*, passing through one of the standards *l′* on the arms E.

To the upper right-hand end of the rod *l* is pivoted the upper end of a forked rod, *l²*, pivoted to an arm of the standard *l′*. A handle-lever, *k*, pivoted to one of the standards *l′*, is connected with the horizontal part of the rod *l*.

On the upper end of the standard *l′*, to which the lever *k* is pivoted, an open spring, *m*, is held, into which the upper end of the handle-lever *k* can be pressed, and can thus be held in place. A spring, *m′*, arranged upon the horizontal arm of the rod *l*, acts upon a collar, *m²*, fixed to said arm of rod and upon the adjacent standard *l′*, to hold the clutches in gear when the lever *k* is not actuated. If the upper end of the lever *k* is pressed into the open spring-ring *m*, the clutches L will be disengaged from the clutches K′, and will be held disengaged, as the upper end of the handle-lever *k* is held in the open spring-ring *m*. The upper end of the handle-lever *k* is, adjoining the seat M, secured in a transverse frame, M′,

sition on a curved locking-bar, *b*, projecting upward from the frame A. A connecting-rod, Q, extends from the lower front end of the elevator-trough D to a lever, Q′, pivoted on the frame A, and adapted to be locked in the desired position on a curved bar, *g*, projecting upward from the frame A. A toothed plate, *h*, is held on an upwardly-projecting lever, *h′*, pivoted on the frame A behind each wheel C. The upper ends of said levers *h′* are connected with each other, and are connected by a connecting-rod, *j*, with an upwardly-projecting lever, *n*, pivoted on the frame A. The plate *h* is shaped in such a manner that its prong can pass in between the teeth *c* of the wheel C. Behind each lever *h′* a standard, *o*, projects upward from the frame A, on the upper end of which standard *o* a bent spring-ring, *o′*, is held, into which the lever *h′* can be forced for the purpose of holding the plate *h* from the rim of the wheel, and out of which ring the said lever *h′* can easily be drawn when the scraper is to come in contact with the rim of the wheel. The front end of the frame A is supported by wheels A′, held in a suitable frame projecting downward from the frame A.

On the upper end of the conveyer-trough D a transverse trough, R, is held, in the bottom of which transverse rollers R′ are arranged, over which an endless belt, R^2, passes, which is provided with transverse strips *r* on its surface, the said belt running over the upper and under surface of the bottom of the trough R.

In the ends of the trough R sprocket-wheels S and S′ are mounted on suitable shafts, over which sprocket-wheels a chain, S^2, passes, on which transverse curved blades S^3 are secured. An additional sprocket-wheel, S^4, is provided, which presses the scraper-blades S^3 on that part of the belt R^2 held over the bottom of the trough, said sprocket-wheel, together with the sprocket-wheel S, causing said blades to engage with the slats *r* of the belt R^2, and thus effect the movement of said belt or carrier with its contents.

On the adjoining ends of the shaft H and the shaft of the sprocket-wheel S beveled cog-wheels T and T′ are mounted, which engage with each other, whereby the chain S^2 can be operated from the chain I of the elevator-trough. One end of the trough R projects a greater distance than the other from the side of the elevator-trough D, and the bottom of the projecting end is slightly inclined upward. the lower end of the elevator-trough is lowered to the ground, the brush O is lowered, and the clutches L are engaged with the clutches K′, so that the shaft F will be revolved if the vehicle is drawn forward. The brush O sweeps the sand, dirt, snow, &c., into the mouth of the elevator-trough, and the snow, sand, or other refuse is carried up the elevator-trough by the elevator-blades I′ and deposited in the transverse trough R, and is carried by the conveyer-belt in the said trough R to one end of the same, and dumped from the end of the trough into a cart or other receptacle placed at the side of the scraper. If the dirt, ice, or sand adhering to the rims of the wheels C is to be removed, the toothed plate *h* is placed against the said rims.

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

1. The combination, in a combined scraper and elevator, of the right-angled lever *l*, with one arm connected to a clutch-face, L, engaging with a clutch-face, K′, of the wheel upon one end of the front axle or shaft, the other arm of said lever passing through a standard, *l′*, of the machine, and connected to a lever, l^3, connecting with the opposite clutch-face L, engaging with the clutch-face K′ of the wheel K upon the opposite end of said axle or shaft, spring *m′*, bearing against a collar, m^2, of lever *l* and against said standard *l′*, and the hand-lever *k*, pivoted upon a second standard, *l′*, of the machine, and connected to the lever *l*, substantially as and for the purpose set forth.

2. In a combined scraper and elevator, the combination of the right-angled lever *l*, with one arm connected to a clutch-face, L, engaging with a clutch-face, K′, of the wheel K upon one end of the front axle or shaft, the other arm of said lever passing through a standard, *l′*, of the machine, and connected to a lever, l^3, connecting with the opposite clutch-face L, engaging with the clutch-face K′ of the wheel K upon the opposite end of said shaft or axle, spring *m′*, bearing against a collar, m^2, of said lever *l*, and against said standard *l′*, and hand-lever *k*, connected to lever *l* and pivoted upon a second standard, *l′*, of the machine, said latter standard having a spring, *m*, to receive the lever *k*, substantially as set forth.

3. The combination, with a vehicle, of an elevator pivoted on the same, the arms E, projecting from the lower end of the elevator-trough, the shaft F, journaled in the arms E,

(No Model.) 2 Sheets—Sheet 1.

H. G. ASHTON & R. GOULD.

SAFETY VALVE.

No. 306,208. Patented Oct. 7, 1884.

Fig. 1.

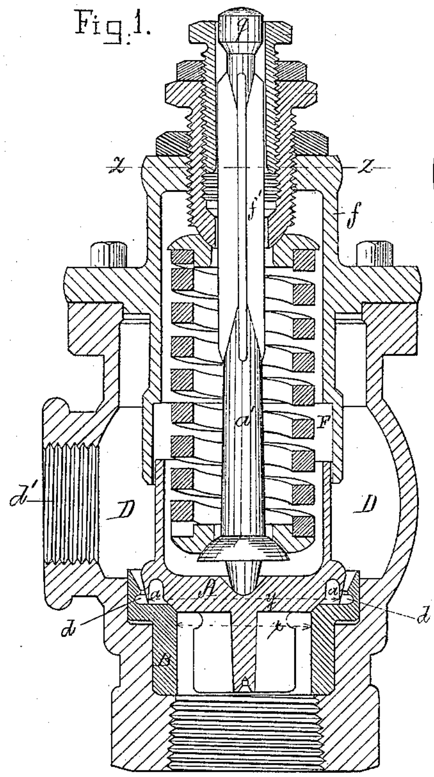


Fig. 4.

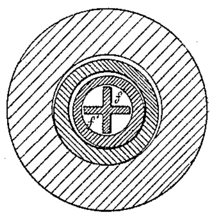


Fig. 5.

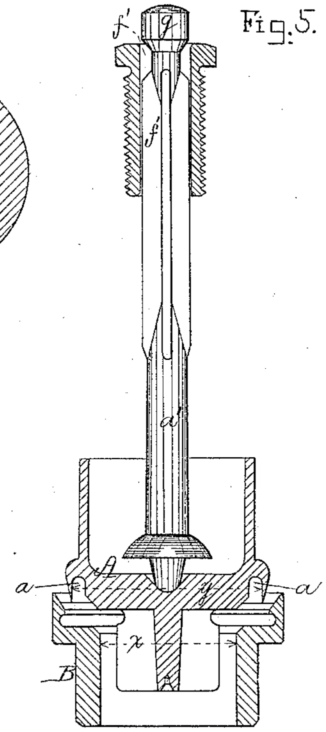


Fig. 2.

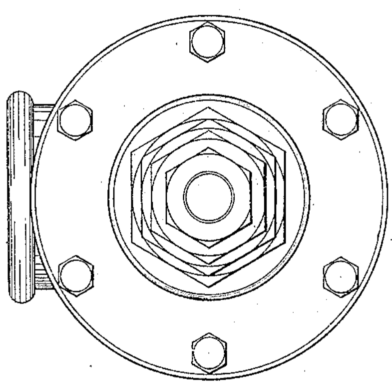
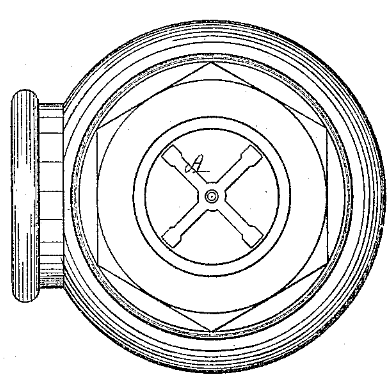


Fig. 3.



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