

(No Model.)

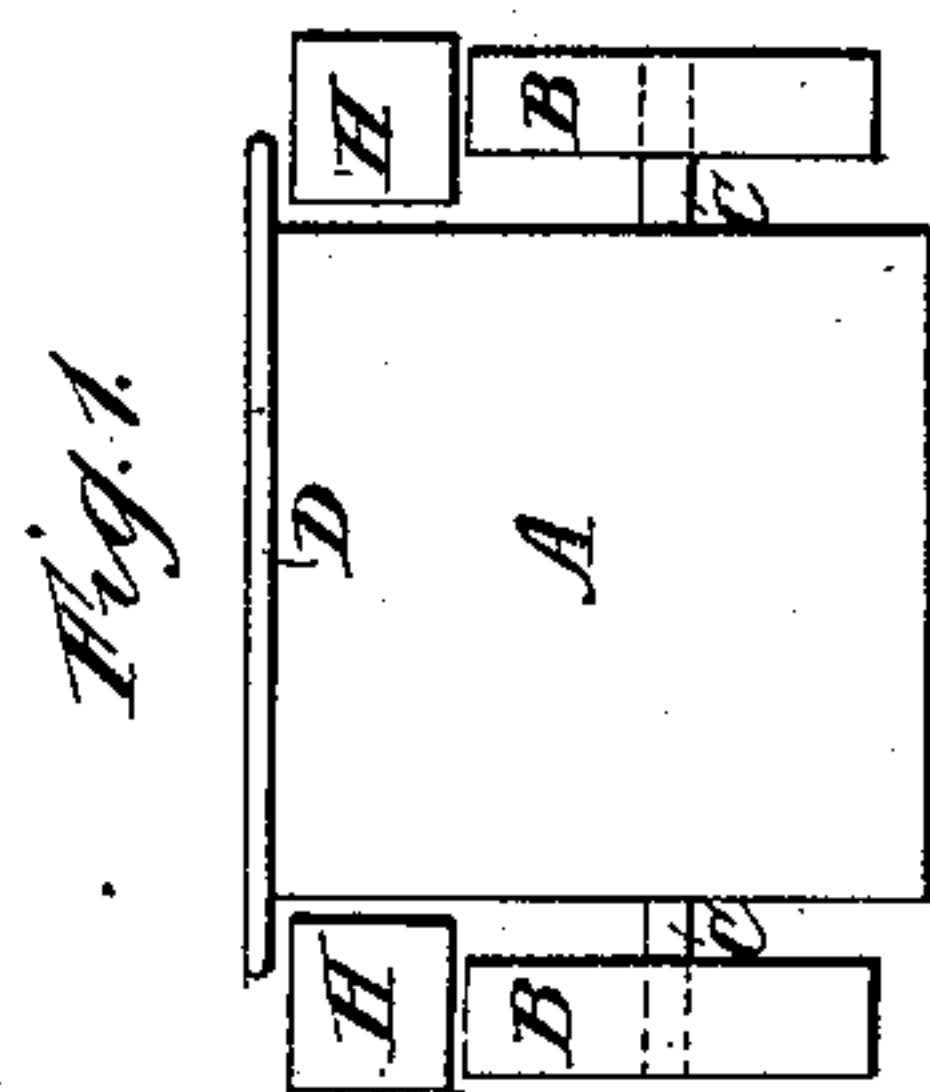
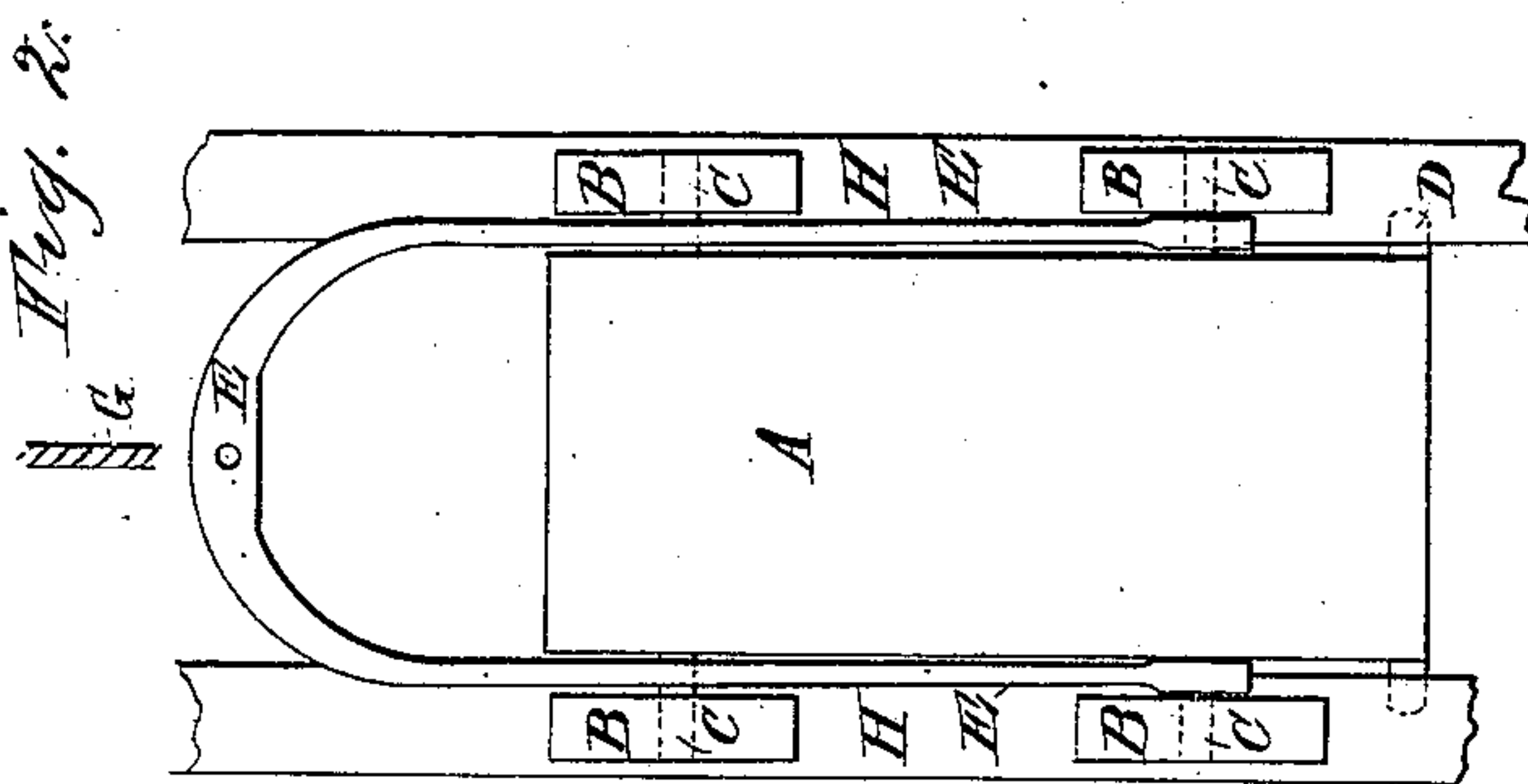
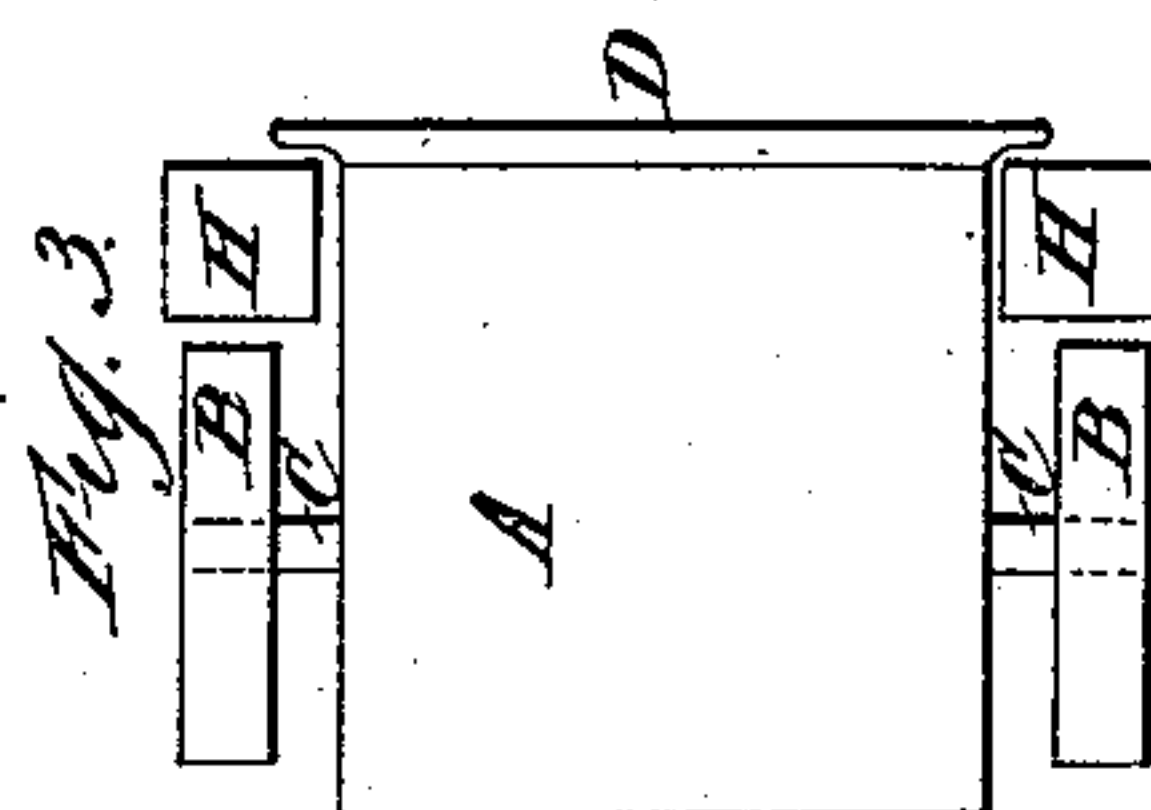
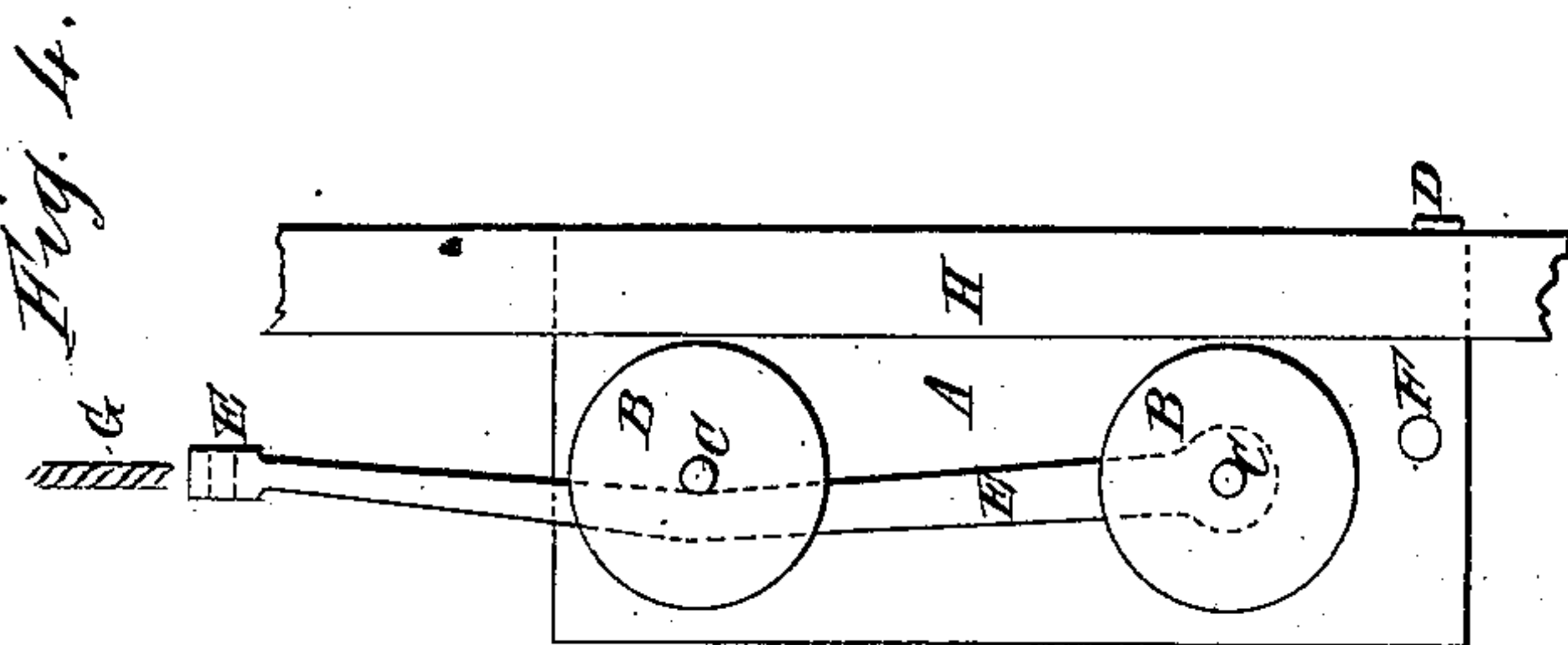
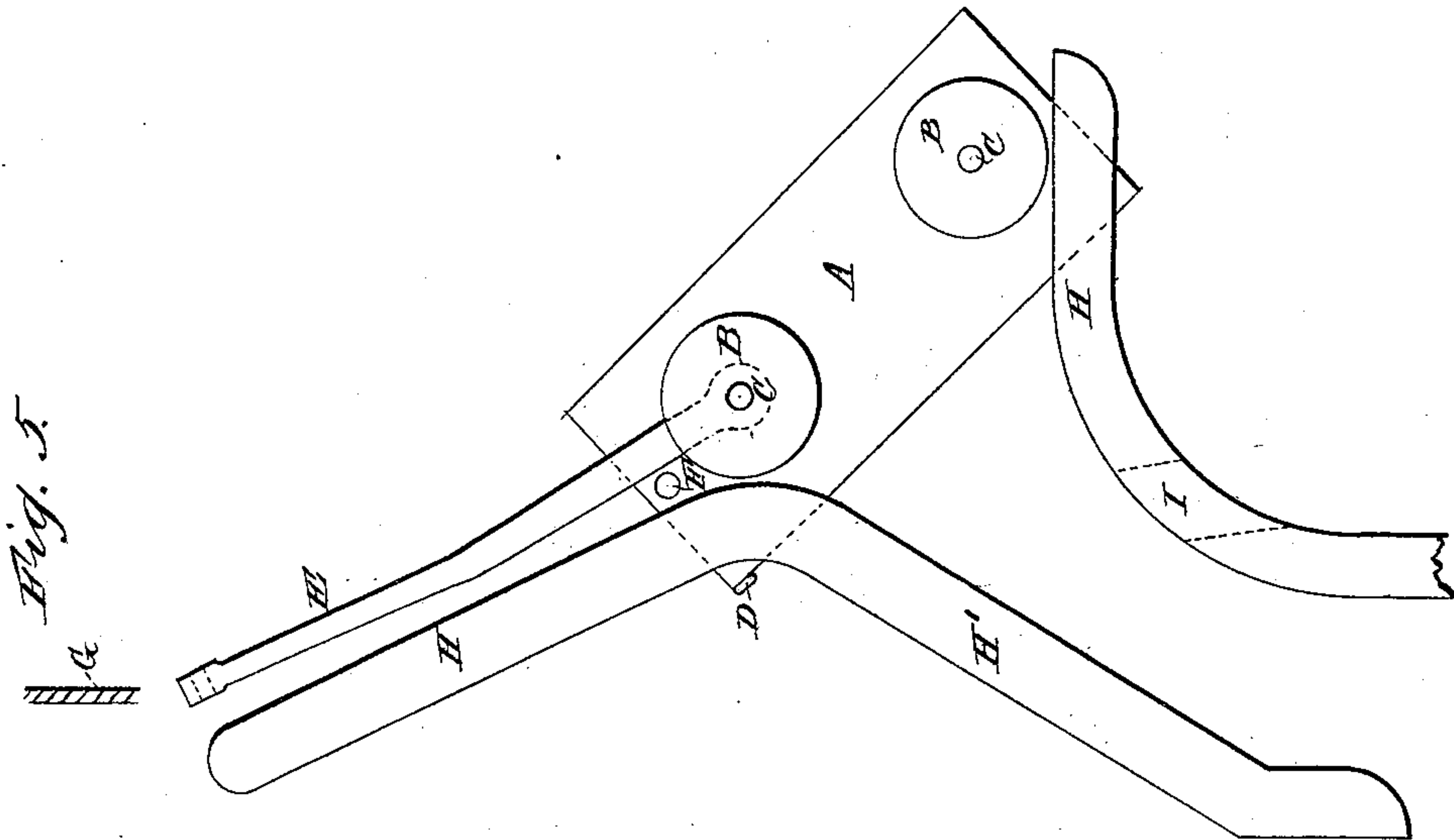
2 Sheets—Sheet 1.

J. KITTO, A. PAUL & R. R. NANCARROW.

MEANS FOR DISCHARGING AND RIGHTING SKIPS OR WAGONS.

No. 334,076.

Patented Jan. 12, 1886.



Witnesses.
Will T. Norton.
Wm R. Davis,

Inventors.
John Kitto, A. Paul & R. R. Nancarrow.
by John J. Halsted & Son
his Atty's.

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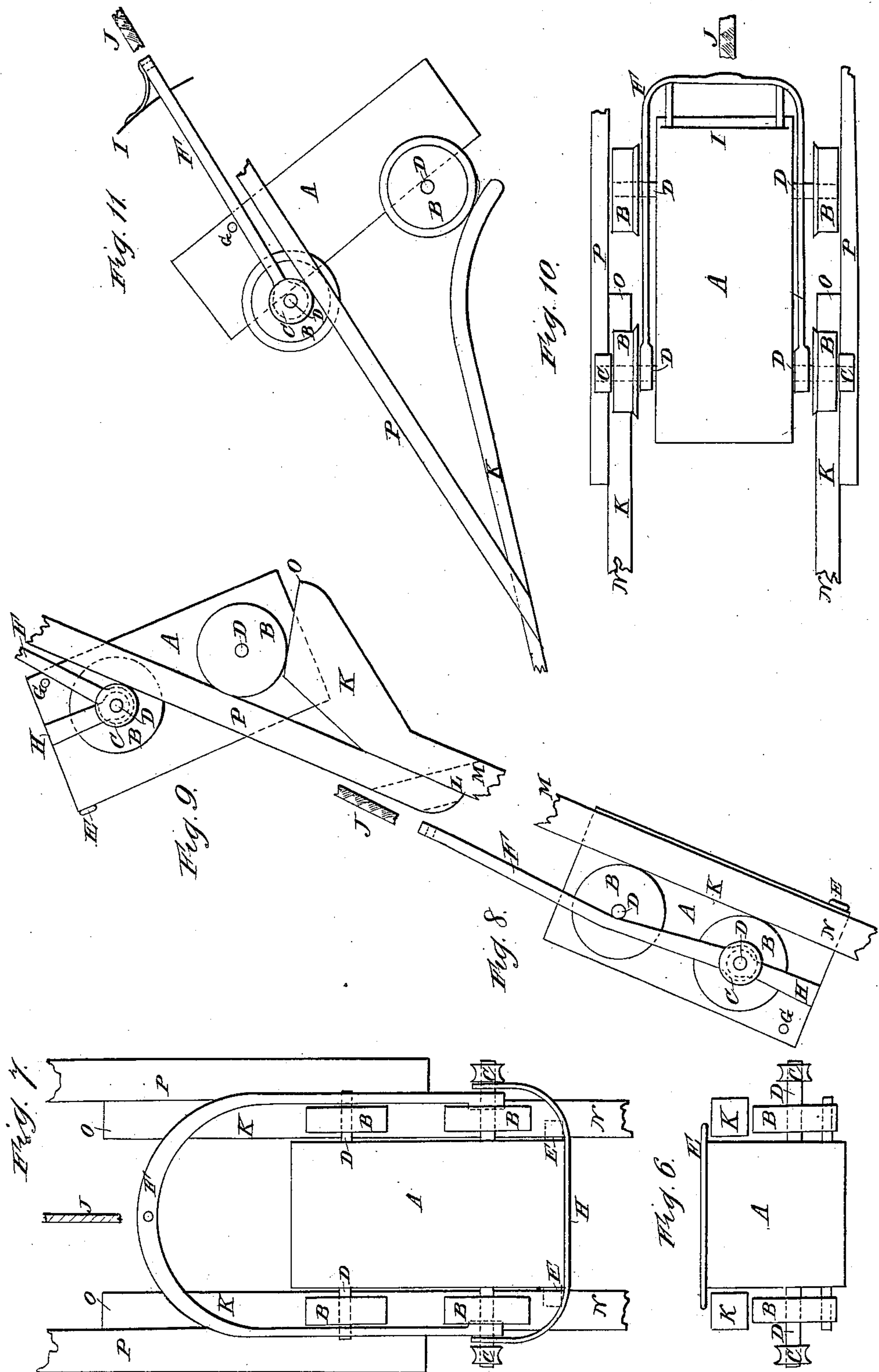
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UNITED STATES PATENT OFFICE.

JOHN KITTO, OF LLANIDLOES, COUNTY OF MONTGOMERY, ABEL PAUL, OF
DEVIL'S BRIDGE, COUNTY OF CARDIGAN, AND ROBERT RICHARDS NANCARROW, OF LLANIDLOES, COUNTY OF MONTGOMERY, ENGLAND.

MEANS FOR DISCHARGING AND RIGHTING SKIPS OR WAGONS.

SPECIFICATION forming part of Letters Patent No. 334,076, dated January 12, 1886.

Application filed November 11, 1885. Serial No. 182,506. (No model.) Patented in England August 20, 1884, No 11,470.

To all whom it may concern:

Be it known that we, JOHN KITTO, ABEL PAUL, and ROBERT RICHARDS NANCARROW, subjects of the Queen of Great Britain, residing, respectively, at Llanidloes, Montgomeryshire, Devil's Bridge, Cardiganshire, and Llanidloes, Montgomeryshire, England, have invented new and useful Improved Means for Automatically Discharging and Righting
10 Skips or Wagons, of which the following is a specification.

The skip or wagon is of wood or iron, of any size required, and runs on iron, wood, or other guides fixed at any angle that may be required. It is drawn forward by a hauling-rope connected to the center of a bow which passes across the front of the skip and along its two sides, and which is at its two ends connected to the skip near its rear end, preferably to the axle of the hind wheels. The ways at their upper or discharge ends are so formed that on the skip or wagon arriving at this end it turns over, empties, and rights itself without any attendant.

25 The drawings annexed show examples of skip mechanism constructed according to our invention.

In the arrangement shown at Figures 1 to 5 the skipways are shown to be vertical; but the same arrangement is also applicable when the road or way is inclined.

Fig. 1 is a plan of the skip and road, showing wheels, axles, and back guide. Fig. 2 is an elevation showing the front of skip and the bow by which it is drawn running down the sides and attached to the lower axles, on which the skip turns when being discharged. Fig. 3 is a plan of skip and road, under side elevation, showing room inside the wheels for the bow. Fig. 4 is an elevation showing side of skip on the road and the bow resting against the upper axle inside the wheel, to keep the skip in a vertical position when being drawn. Fig. 5 is an elevation showing the side of skip when inverted and the road at the point of discharge.

A is the skip, open at its upper end.

B are the wheels of the skip, which run along the front face of the road; C, axles of skips.

D is a bar secured to the lower end of the skip and projecting behind the road or guide-ways to form a back guide.

E is the bow; F, a stud against which the bow rests when the skip is inverted, and which keeps it in proper position to right itself when lowered.

G is the line of winding-rope; H, the skip-road; H', fixed guides at the upper end of the skip-road, to insure the righting of the skip when it is lowered after being inverted; I, part of inside of road removed for the back guide, D, to pass through.

It will be seen from Fig. 5 that when the skip arrives at the upper end of the road, H, the upper pair of wheels travel along the sidewise extension of the upper end of the road, and as the back end of the skip continues to be lifted, the back guide, D, passes up through the slots I in the inner sides of the skip-road and allows the skip to be inverted and its contents discharged, as shown.

Figs. 6, 7, 8, and 9 show a modification of the above arrangement, in which guide-bars or conductors are used at the top of the main road for small wheels on the extremities of the rear axle to run on when the skip is being inverted.

The road is shown in an inclined position; but it is equally well adapted for use in a vertical position.

Fig. 6 is a plan of the skip and road for vertical or incline work. Fig. 7 is an elevation showing the front of the skip and bow attached to the axles on which it turns at the point of discharge, also top of main road, together with outside conductors to keep the skip in position when being inverted. Fig. 8 shows the side of skip and the road in an inclined position. Fig. 9 shows the side of road with skip inverted at the point of discharge.

In these figures, A is the skip or wagon; B, the main wheels; C, the small wheels; D, the axles; E, the back guide; F, the bow by which it is drawn; G, the stud which rests against the bow to keep the skip or wagon in position to right itself when being lowered.

H is a band of iron to strengthen the bot-

tom of the skip and support the axles from which it is drawn.

J is the line of winding-rope; K, the main road; L, part of inside of road removed for the back guide to pass through; and P are conductors secured to the outer sides of the main road at the place of discharge, for the small wheels C to run along and cause the skip to be inverted.

10 Figs. 10 and 11 show a modification adapted for horizontal or inclined work. In this modification the front end of the wagon is secured to the bow, so that the front of the wagon is opened at the same time that the wagon is tipped.

15 Fig. 10 is a plan view, and Fig. 11 a side view, of the skip or wagon and of the upper end of the main road.

In these figures the parts are marked with the same letters of reference as in Figs. 6, 7, 8, and 9. The movable front of the wagon secured to the bow is marked I.

25 Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is—

1. The combination of mechanism, substantially as hereinbefore described, and illustrated at Figs. 1, 2, 3, 4, and 5, for automatically discharging and righting skips or wagons. 30

2. The combination of mechanism, substantially as hereinbefore described, and illustrated at Figs. 6, 7, 8, and 9, for automatically discharging and righting skips or wagons.

3. The combination of mechanism, substantially as hereinbefore described, and illustrated at Figs. 10 and 11, for automatically discharging and righting skips or wagons. 35

J. KITTO.

A. PAUL.

R. R. NANCARROW.

Witnesses to the signatures of John Kitto and Abel Paul:

ARTHUR S. CORSER,

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Witnesses to the signature of Robert Richards Nancarrow:

A. ALBUTT,

T. W. PRICE.