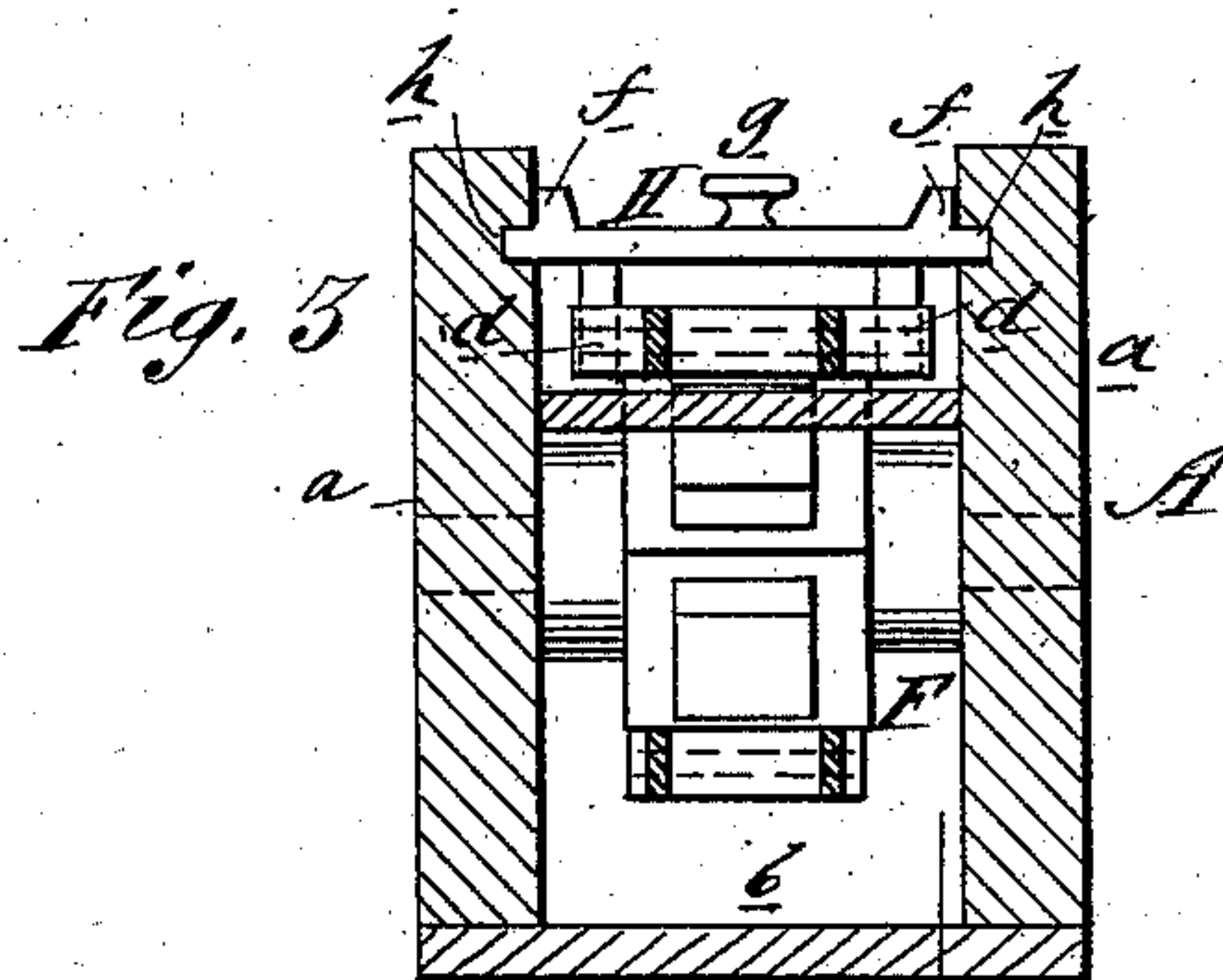
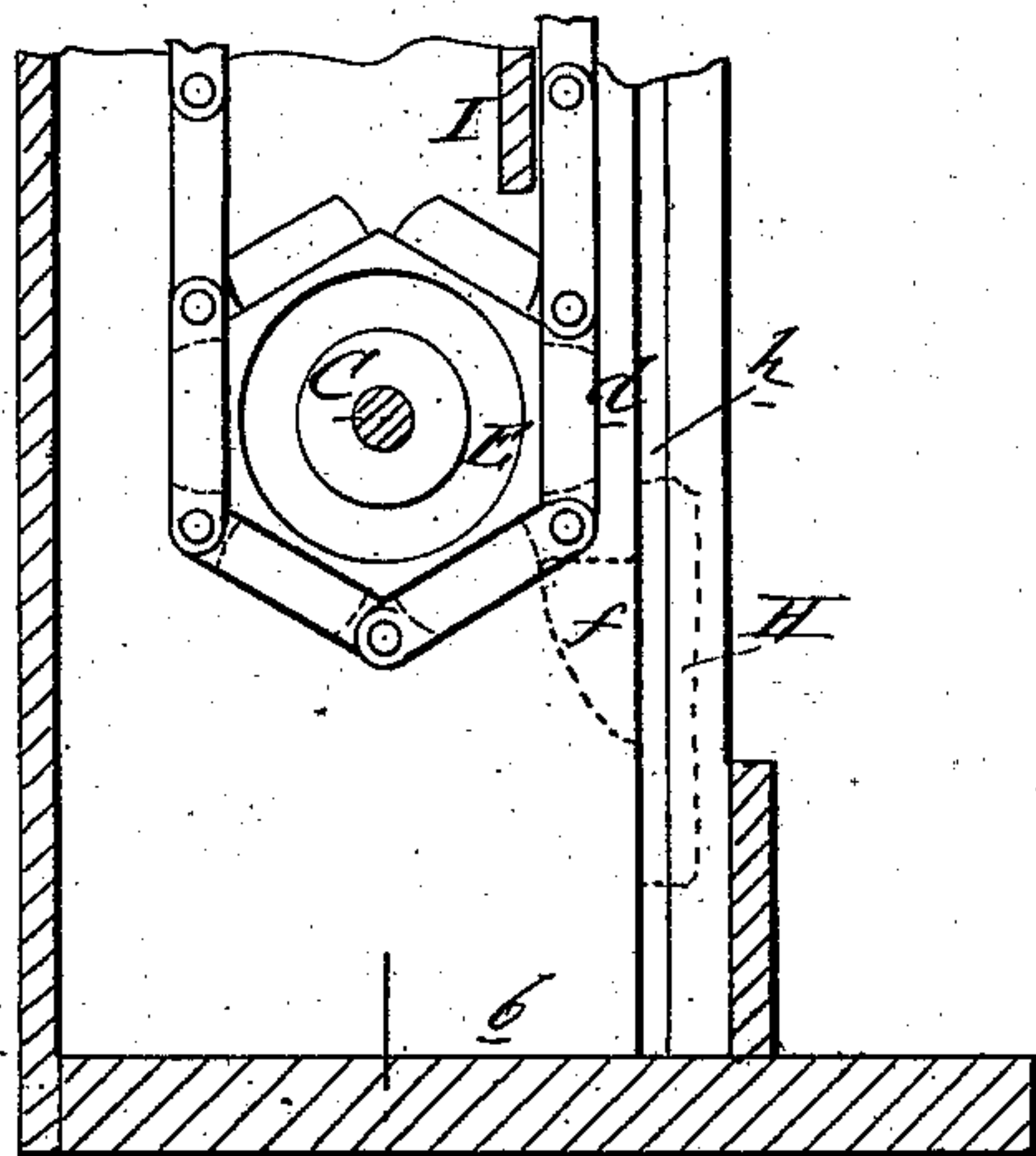
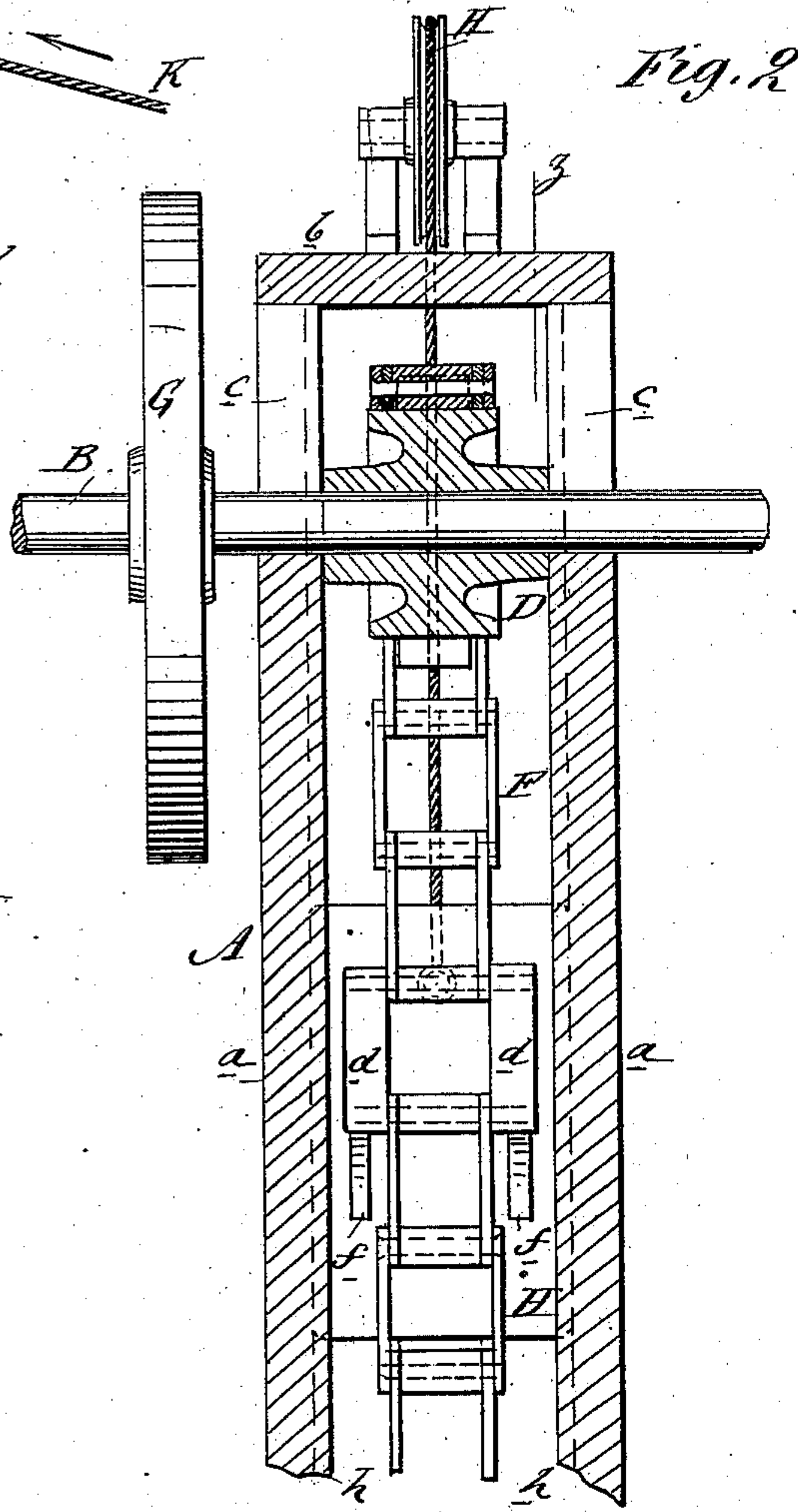
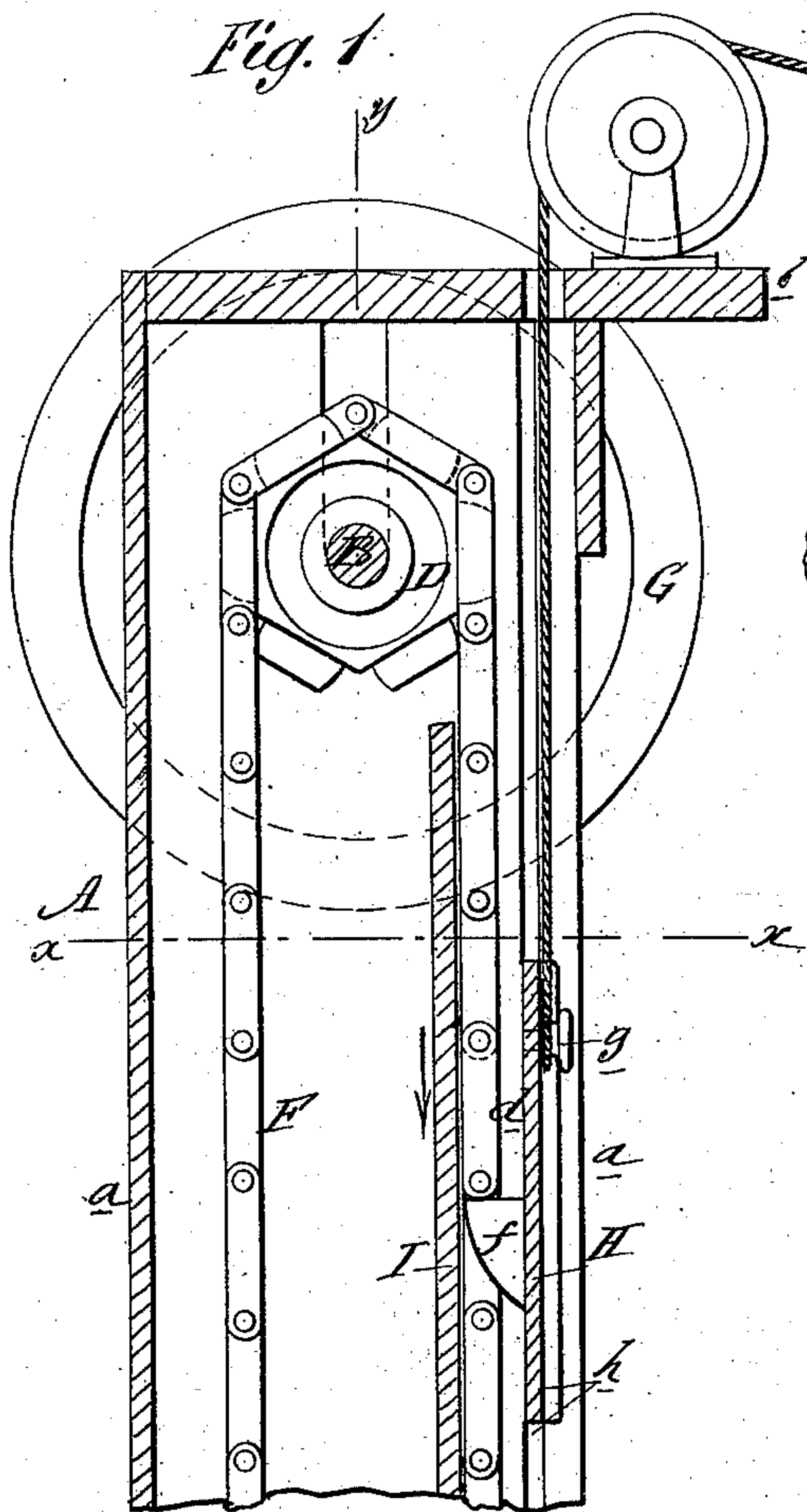


(No Model.)

S. R. KIRBY.
Grain-Shoveler.

No. 228,081.

Patented May 25, 1880.



WITNESSES:

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UNITED STATES PATENT OFFICE.

STEPHEN R. KIRBY, OF NEW YORK, N. Y.

GRAIN-SHOVELER.

SPECIFICATION forming part of Letters Patent No. 228,081, dated May 25, 1880.

Application filed April 10, 1880. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN R. KIRBY, of the city, county, and State of New York, have invented a new and Improved Grain-Shoveler, of which the following is a specification.

In the transfer of grain from railroad-cars to elevators time is a most important element, and many labor and time saving methods and appliances have been adopted for the purpose of economizing in this direction. It is common now to lay a double track opposite the elevator and to sink a pit or pits between said tracks, into which pit or pits the elevating-buckets are made to descend, so that the grain can be shoveled from the cars into these pits, and be thence elevated directly into the elevator-building, the train of cars being moved along at short intervals of time as one car is emptied, to bring the next succeeding one opposite the pit into which the car-load is to be discharged.

Various devices have also been tried for the purpose of quickly discharging or emptying grain-cars, and the object of my invention is to provide a better and more effective device for this purpose.

My invention consists of an endless chain or belt stretched over two chain pulleys or drums, and revolving between guides or in a long box that is fixed, preferably, in an upright or nearly upright position, said chain being provided at two opposite points in its length with lateral ears; and it consists, further, of a sliding plate or counter-balance that moves in grooves in said guides, and is designed to be connected by a rope with one or more grain shovels or scoops, and said sliding plate is provided with lugs on its under face, with which lugs the ears of the chain engage twice in each revolution, and thereby move said plate at each half-revolution the length of the guide, and then release it so that the said plate may fall or be drawn back again.

This apparatus is to be permanently fixed within or near the grain-elevator.

Figure 1 represents a sectional side elevation of the device on line *z z*, Fig. 2. Fig. 2 is a sectional elevation on line *y y*, Fig. 1. Fig. 3 is a transverse section on line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

In the drawings, A represents the box or guide, consisting of the side plates, *a a*, held opposite and parallel with each other by the end pieces, *b b*, and other strengthening-strips, if necessary. These side plates, *a a*, are provided with slots *c c* for the adjustment of the driving-shaft B.

The shafts B C, journaled in the plates *a a*, one at either end of said guide or box A, have keyed upon them, respectively, between the said plates *a a* the chain-pulleys D E.

F is the endless chain or belt passing around said pulleys D E, and provided with the lateral ears *d d* at two opposite points in its length.

G is the driving-wheel, to which power is applied to operate the device, said wheel G being keyed on the outer end of the shaft B.

H is the sliding plate or counter-balance, provided with lugs *f f* on its under side, and with a stud, *g*, on its upper face, said plate H moving in the longitudinal grooves *h h* in the inner faces of the side plates, *a a*. As the plate H rests in these grooves *h h*, its lugs *f f* extend downward on either side of the chain or belt F, so that as the said chain or belt travels in the direction of the arrow, Fig. 1, the ears *d d* of said chain or belt engage against the straight ends of said lugs *f f*, and thereby move said plate H to the lower pulley or wheel, E, when, at the turn of said belt or chain F about said pulley or wheel E, the ears *d d* release or become disengaged from the lugs *f f*, and permit the plate H to be drawn back again to the top of the guide A.

I is a board or support fixed beneath the upper turn of the belt or chain F, to keep it in such a position that the ears *d d* may never fail of engaging at the proper time with the lugs *f f*.

K is a rope attached at one end to the stud *g* of the sliding plate H, and, passing over the sheave L, is designed to be made fast at its other end to a grain shovel or scoop.

In operating this device the operator takes the shovel or scoop that is attached to the rope K into the car and thrusts it into the bulk of grain therein, and power then being applied to the driving-pulley G, the chain or belt F travels in the direction of the arrow shown in Fig. 1. The ears *d d* then engage against the lugs *f f* of the sliding plate H and carry said

plate H to the lower end of the guide A, with the effect of dragging the scoop or shovel, with its contained grain, to the door of the car, whence the said grain falls into the elevator-pit, as hereinbefore described. The plate H being released on reaching the lower end of the guide A, the operator at once pulls his shovel or scoop back into the car, thereby pulling the plate H to the top of the guide A, and again plunges said shovel or scoop into the bulk of grain therein, when the opposite ears *d d* of the belt or chain F engage with the lugs *f f*, and, carrying said plate H down, again drag the shovel or scoop, with its load, to the car-door, to be discharged as before; and thus in each revolution of the belt or chain F the operator can discharge two shovelfuls of grain from a car into an elevator-pit, and with such rapidity that a car-load of three hundred and fifty to four hundred bushels of grain may be easily discharged in three and a half minutes by the simultaneous use of two scoops or shovels connected by ropes to one sliding plate, one operator in such case removing the grain from one end of the car while the other operator performs the same work in the opposite end of the car, the connecting-ropes between the sliding plate and the shovels being made to cross each other at the car-door.

30 The position of the guide or box A and its attachments may be reversed from that shown in the drawings, in which case the sliding

plate H will fall back after each upward movement, and thereby save the operator in the unloading car the labor of pulling it up every time he has to drag his shovel rearward in the car.

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

1. A grain-shoveler constructed substantially as herein shown and described, consisting of guide A, revolving endless belt or chain F, provided with lateral ears *d d*, sliding plate H, provided with lugs *f f*, and rope K, as set forth.

2. In a grain-shoveler, the combination, with the endless belt or chain F, provided with ears *d d*, of the sliding plate H, provided with lugs *f f*, substantially as herein shown and described.

3. In a grain-shoveler, the sliding plate H, provided with lugs *f f* and stud *g*, substantially as herein shown and described.

4. In a grain-shoveler, the combination, with the guide A, provided with adjusting-slots *c c* and grooves *h h*, of the pulleys D E, endless belt or chain F, and sliding plate H, substantially as herein shown and described.

STEPHEN R. KIRBY.

Witnesses:

I. I. STORER,
JAMES H. HUNTER.