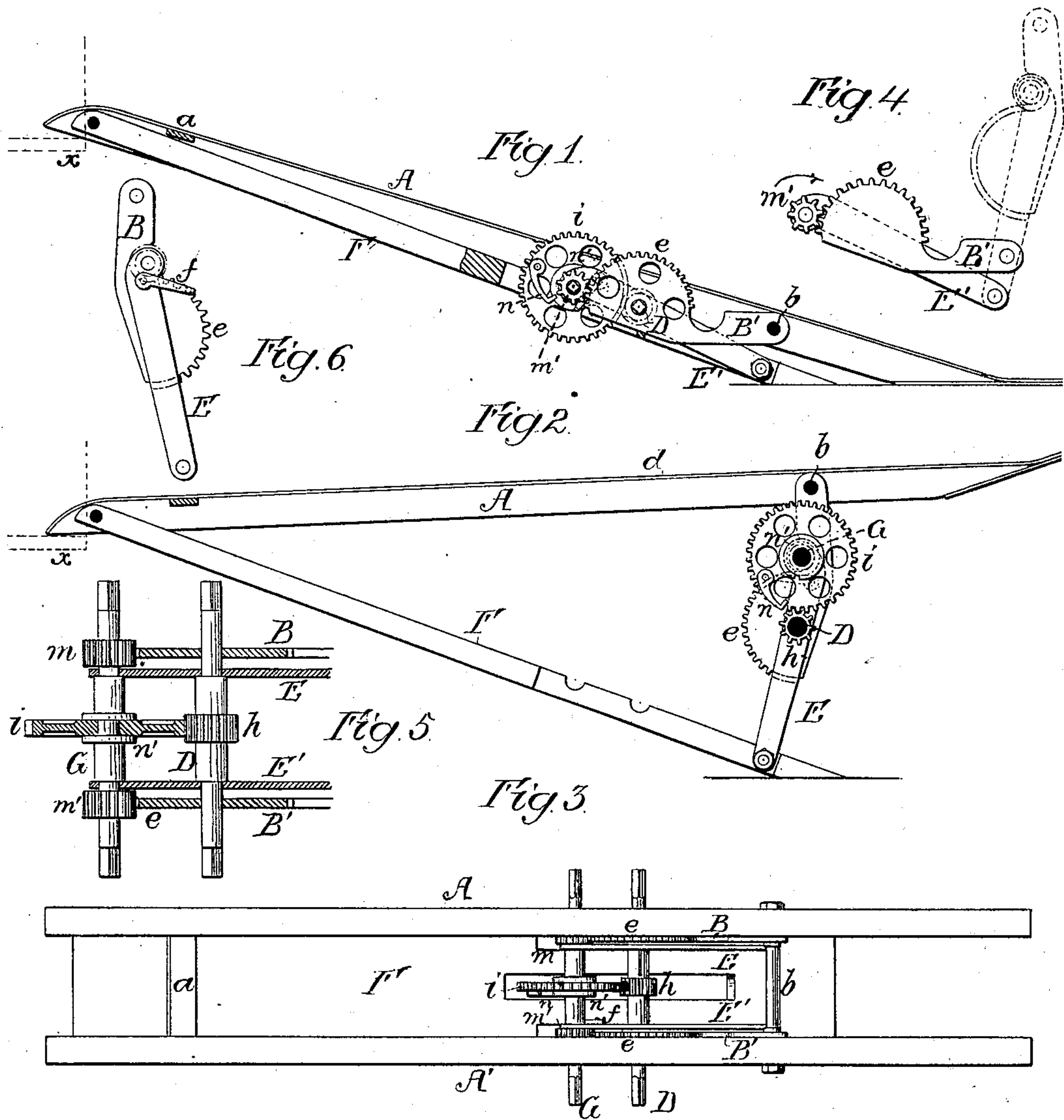


W. H. DOUTY.  
Skid.

No. 215,895.

Patented May 27, 1879.



WITNESSES

J. M. Dummer.  
Harry Smith

INVENTOR

William H. Douty  
by his Attorneys  
J. Howard & Son

# UNITED STATES PATENT OFFICE.

WILLIAM H. DOUTY, OF SHAMOKIN, PENNSYLVANIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO HEZEKIAH FLOYD, OF SAME PLACE.

## IMPROVEMENT IN SKIDS.

Specification forming part of Letters Patent No. 215,895, dated May 27, 1879; application filed April 28, 1879.

*To all whom it may concern:*

Be it known that I, WILLIAM H. DOUTY, of Shamokin, Pennsylvania, have invented a new and useful Improvement in Skids, of which the following is a specification.

My invention relates to improvements in skids for facilitating the loading of drays and other vehicles; and my improvements consist in combining with a skid-frame certain gearing and other appliances, fully described hereinafter, by which the said frame may be raised after receiving its load, thereby bringing the latter on a level, or thereabout, with the body of the dray onto which the load has to be deposited.

In the accompanying drawings, Figure 1 is a side view of my improved skid as it appears when folded for transportation, or when one end is resting on the ground or on a curb and the other on the tail of a dray; Fig. 2, the skid as it appears when elevated; Fig. 3, a plan view of Fig. 1; Fig. 4, a diagram illustrating the operation of the appliances for elevating the skid-frame; Fig. 5, an enlarged view of the gearing, and Fig. 6 a detached view of part of the device.

The frame of the skid consists of two longitudinal bars, A A', connected together near the front end by a cross-bar, *a*, and at a short distance from the rear end by a cross-stay, *b*. The longitudinal bars are preferably made of wood, with iron bars *d* on top, to insure durability and for serving as an appropriate track for the wheels of the small trucks on which it is usual to place heavy packing-cases.

To the cross-stay *b* are pivoted two arms, B and B', on each of which is formed the segment *e* of a cog-wheel, a shaft, D, passing through the centers of the segments and also through two arms, E E', the lower ends of which are pivoted to a frame, F, near the rear end of the same, the upper or front end of this frame being pivoted to the front end of the skid-frame. The shaft D is arranged to revolve in the segmental arms B B' and in the arms E E'.

A counter-shaft, G, passes through and has its bearings in the upper ends of the arms E E', and on this shaft are two pinions, *m m'*, the former being arranged to gear into the

toothed segment *e* of the arm B, and the latter into the segment of the arm B'.

On the shaft D there is a pinion, *h*, which is arranged to gear into a wheel, *i*, on the shaft G. The latter may be loose on the shaft or may be made fast on the same, as circumstances described hereinafter may require, the fastening device consisting in the present instance of an arm, *n*, Fig. 1, pivoted to the wheel and having a projection which can be introduced into a notch in a collar, *n'*, on the shaft, in which case the wheel will be fast to the same, but loose when the arm has been moved away from the collar.

A pawl, *f*, Fig. 6, is so hung to one of the arms E or E' that its end can be made to gear into the teeth of one of the segments *e*.

In using the improved skid the front end is placed on the tail of the dray to be loaded, the lower and rear end resting on the ground or on the curb.

When a barrel or loaded truck has been moved from the ground or sidewalk onto the rear end of the skid, the above-described gearing is brought into operation, so as to bring the arms B B' and E E' to the position shown in Fig. 2, thereby raising the rear end of the skid-frame and the load which has been placed thereon, and permitting the easy movement of the said load onto the dray or other vehicle.

The action of the gearing in raising the rear of the skid-frame will be best understood by reference to the detached view, Fig. 4.

When the arms B' and E' are in the position shown by plain lines the skid-frame will be depressed, as shown in Fig. 1; but on turning the pinion *m'* in the direction of the arrow both the pinion and the arms will assume the positions shown by dotted lines, when the skid-frame will be elevated, as shown in Fig. 2.

It will be seen that each of the shafts D and G are prepared at each end for the reception of a suitable winch.

When the load is light the wheel *i* should be loose on the shaft and power applied to the shaft G only, in which case the pinions *m m'* will act directly on the toothed segments and the ascent of the skid-frame will be rapid.

When the load on the skid-frame is heavy the wheel *i* should be made fast to the shaft



G and the shaft D should be turned, in which case much greater power will be exerted through the medium of the pinion *h*, wheel *i*, pinions *m m*, and segments *e e*.

The skid-frame and its load may be retained in an elevated position by moving the pawl *f* into gear with one of the toothed segments.

It is not essential that the supplementary gearing, consisting of the pinion *h* and wheel *i*, should in all cases be used, for when a skid has to be used at all times for comparatively light loads sufficient power can be obtained without the intermediate gear.

When the skid has to be conveyed from place to place it can be folded into a comparatively small compass, as shown in Fig. 1.

I claim as my invention—

1. The combination, in a skid, of the main frame A A' and a supplementary frame, F, pivoted at one end to the said main frame, and connected thereto near the other end by arms B B' and E E', in combination with gearing, substantially as described, whereby the said arms may be operated to raise the main frame, in the manner set forth.

2. The combination of the skid-frame and the arms B B', pivoted thereto, said arms having toothed segments *e e*, with the supplementary frame and arms E E', pivoted thereto and to the said arms B B', and with a shaft, G, carried by the said arms E E', and having pinions gearing into the toothed segments, all substantially as specified.

3. The combination of the skid-frame and supplementary frame, and the within-described arms B B' and E E', with the shaft D, having a pinion, *h*, and the shaft G, having a wheel, *i*, and pinions *m m'*, gearing into the toothed segments of the arms B B', all substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM H. DOUTY.

Witnesses:

JAMES M. GASKINS,  
W. H. GILGER.