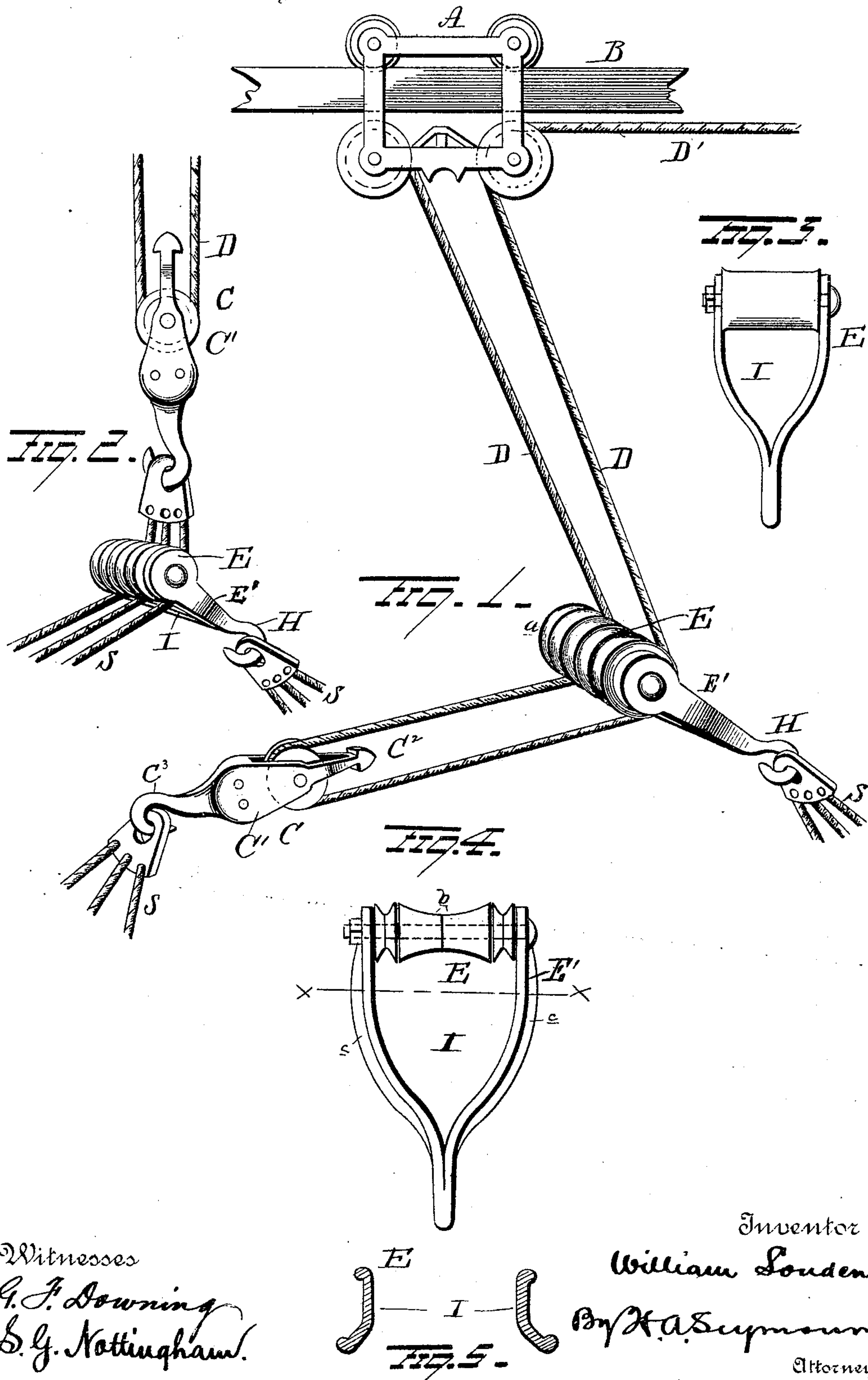


(No Model.)

W. LOUDEN.  
HAY ELEVATOR PULLEY.

No. 481,263.

Patented Aug. 23, 1892.



Witnesses  
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# UNITED STATES PATENT OFFICE.

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## HAY-ELEVATOR PULLEY.

**SPECIFICATION** forming part of Letters Patent No. 481,263, dated August 23, 1892.

Application filed September 5, 1891. Serial No. 404,835. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM LOUDEN, of Fairfield, in the State of Iowa, have invented the following Improvement in Hay-Elevator Pulleys, of which the following is a specification.

My invention relates to an improvement in hay-elevators, and more particularly to a binding device adapted to be applied to the hoisting-rope and pulley of an ordinary hay-carrier, an elevating-pulley being provided for one end of the sling-ropes and a binding pulley or pulleys for the other ends of said sling-ropes, the object of the invention being to so construct and arrange the elevating and binding pulleys that after the sling and the load are rolled up into a compact bundle the elevating-pulley will pass up through the frame of the binding-pulley and be perfectly free to register in the carrier.

With this object in view the invention consists in the combination, with a hoisting-rope, of an elevating-pulley and a binding-pulley, the elevating-pulley being adapted to pass over the binding-pulley and engage the carrier.

The invention also consists in certain novel features of construction and combinations and arrangements of parts, as hereinafter set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view showing my invention in the act of binding a load. Fig. 2 is a perspective view showing the position of parts when the load is bound and the frame of the elevating-pulley ready to engage the carrier. Figs. 3 and 4 are views showing different constructions of elevating-pulleys. Fig. 5 is a cross-section of the pulley-frame shown in Fig. 4.

A represents an ordinary hay-carrier mounted upon a suitable track or rail B, and C is an elevating-pulley over which the hoisting-rope D passes. The elevating-pulley C is mounted in a frame C', at one end of which an arrow-head C<sup>2</sup> is provided and adapted to engage the carrier A, as hereinafter fully explained, the other end of said frame C' being made with a hook C<sup>3</sup>, to which one end of a series of sling-ropes s are attached.

E represents a binding pulley or pulleys

mounted in a frame E', the latter being provided with a hook H or equivalent device for the attachment of the other ends of the sling-ropes s. The frame E' of the pulley E is so spread or enlarged that it will permit the elevating-pulley and frame to pass through it and the sling-ropes be made to run on said binding pulley or pulleys E. The frame E' of the binding-pulley is preferably provided with wide flaring flanges c c on the under sides, said flanges being adapted to guide the elevating-pulley into and through said binding-pulley frame E'.

The binding-pulley E is preferably composed of a series of smaller pulleys a, although one pulley might be employed, as shown in Fig. 3, without seriously affecting the operation of the device. Five small pulleys a may be employed to advantage, two being provided for the hoisting-rope D and three for the sling-ropes s. I prefer, however, to employ at least two smaller pulleys, as indicated at b, Fig. 4, and to make said smaller pulleys b tapering somewhat toward their meeting ends. By thus constructing the sections or smaller rollers or pulleys b of the binding-pulley E the elevating-pulley and its frame will be permitted to pass easily through the pulley-frame E' of binding-pulley E. Power being now applied to the end D' of the hoisting-rope D, the sling-load will be rolled up into a compact bundle and the pulley C and its frame C' will be drawn through the opening I of the frame E' of pulley E, as shown in Fig. 2, so that the arrow-head C<sup>2</sup> can engage the carrier A, and thus suspend the bundle or load of hay from said carrier and be conveyed away in the usual manner.

By constructing and arranging the devices as above described a very simple, cheap, and effective attachment will be produced, whereby any hay-carrier can be converted into a carrier for handling self-compressed hay-slugs or other suitable load-holding devices.

The pulley-frame E' being constructed and operated so that the elevating-pulley C and its frame C' can pass through it, the binding-pulley E will be free to run down on the sling s until it is stopped by the resistance of the hay within the sling. This construction enables it to fully bind and compress the hay



when the load is small and not sufficient in size to fill out the length of the sling-ropes.

It is evident from the simplicity of my invention that all that is necessary is to have the opening I of the binding-pulley frame E' large enough and so fitted that the elevating-pulley frame C will pass through it; and I do not desire to restrict myself to the precise construction hereinbefore described; but,  
 10 Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a hoisting-rope, of an elevator-pulley and a binding-pulley, 15 the frame of the binding-pulley being adapted to permit the passage therethrough of the elevating-pulley, substantially as set forth.

2. The combination, with a hay-carrier and a hoisting-rope, of an elevator-pulley and pulley-frame and a binding-pulley, said binding-pulley being adapted to permit the elevating-pulley to pass therethrough and engage the carrier, substantially as set forth.

3. The combination, with a hoisting-rope, 25 of two pulleys, sling-ropes connected with the frames of said pulleys and adapted to embrace a bundle or load of hay, the frame of one of said pulleys being of sufficient size to permit the passage through it of the other pulley and its frame and the sling-ropes, substantially as set forth.

4. The combination, with a hay-carrier, of a binding-pulley having a loop and an elevat-

ing-pulley adapted to pass through said loop, substantially as set forth. 35

5. The combination, with a hay-carrier, of two pulleys, each connected to sling-ropes, the supporting-frame of one of said pulleys being of a size sufficient to permit the passage of the other pulley, substantially as set forth. 40

6. The combination, with a hay-carrier, of two pulleys, one of said pulleys being made of a series of sheaves and having an open supporting-frame adapted to permit the passage through it of the other pulley, substan- 45 tially as set forth.

7. The combination, with a hay-carrier, of two pulleys, one of said pulleys being made up of a series of sheaves or rollers, the sheaves or rollers being smaller at the center of the 50 pulley than at the edges, said pulley having an open frame adapted to permit the passage of the other pulley, substantially as set forth.

8. The combination, with a hay-carrier, of two pulleys and an open frame for one of said 55 pulleys, adapted to permit the passage therethrough of the other pulley, said frame being made with a flaring mouth, substantially as set forth.

In testimony whereof I have signed this 60 specification in the presence of two subscribing witnesses.

WILLIAM LOUDEN.

Witnesses:

C. M. McELROY,  
 R. B. LOUDEN.