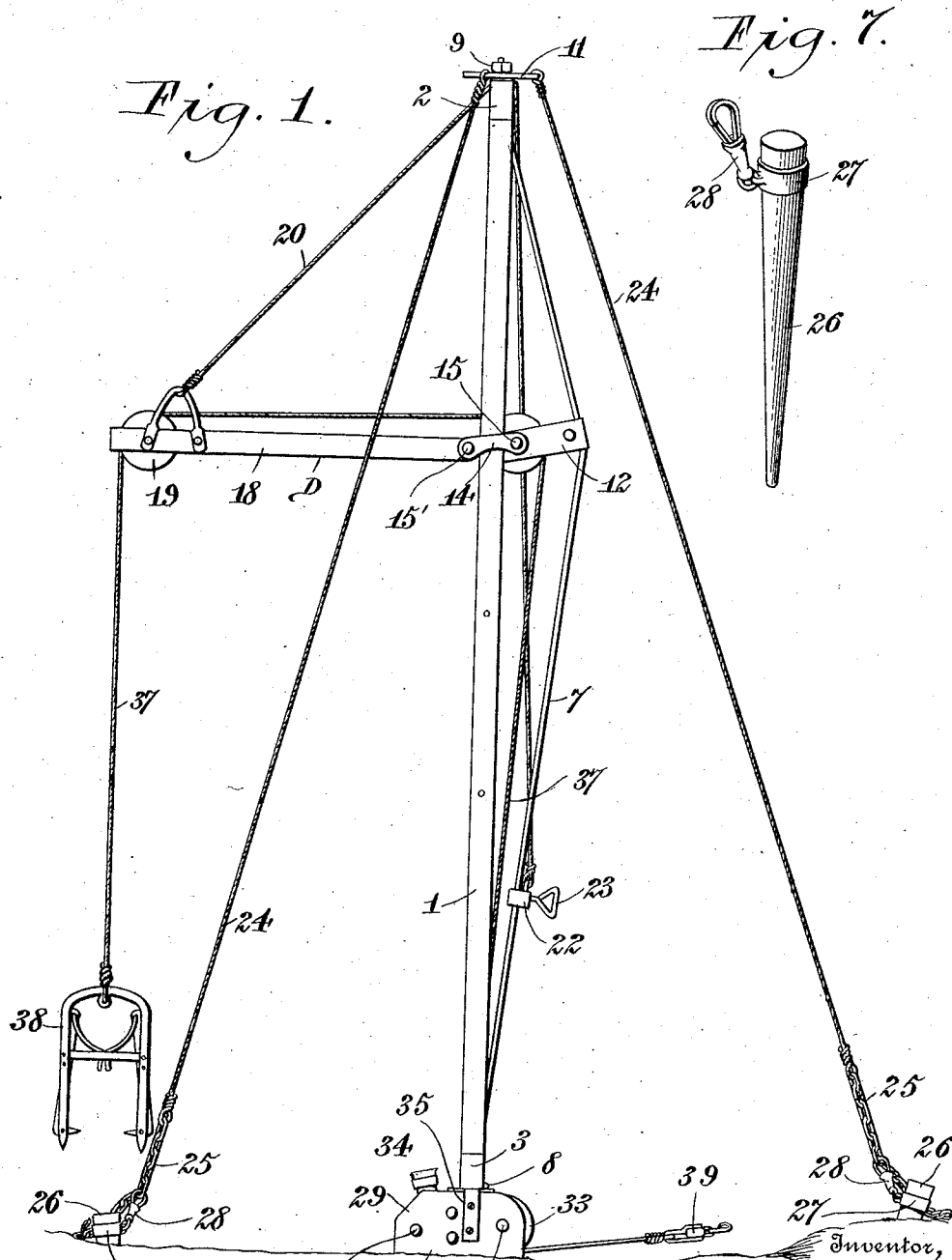


1,061,838.

A. HAGERMAN.
HAY DERRICK.
APPLICATION FILED OCT. 22, 1912.

Patented May 13, 1913.
2 SHEETS—SHEET 1.



Witnesses:
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APPLICATION FILED OCT. 22, 1912.

Patented May 13, 1913.

Fig. 2.

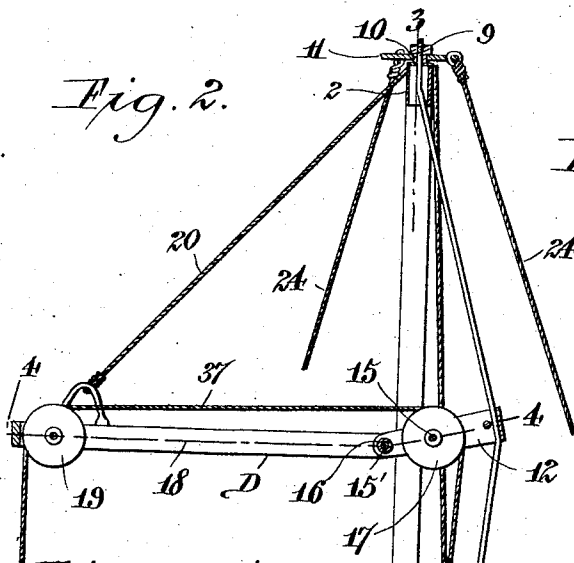


Fig. 3.

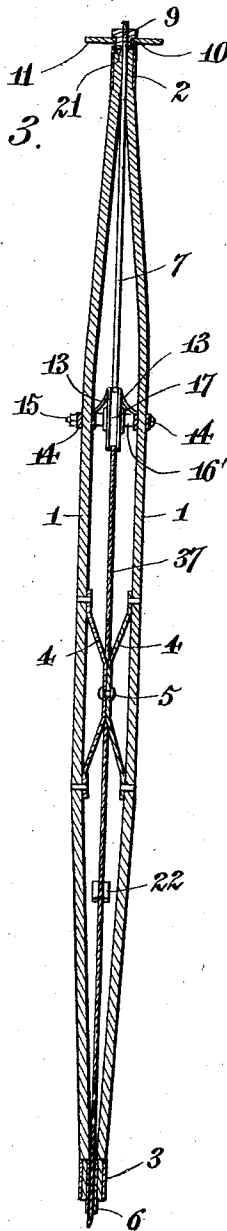


Fig. 5

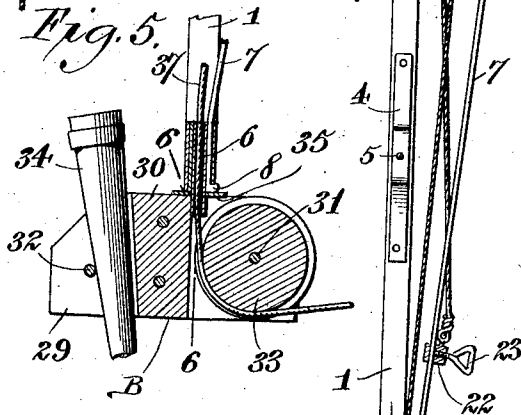
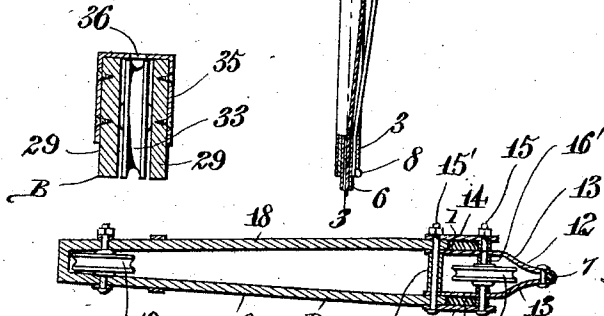


Fig. 6



Witnesses

Witnesses 19 18 D 16 15
Christ Fennel, Fig. 4. 17 By Alfred Hagerman.
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UNITED STATES PATENT OFFICE.

ALFRED HAGERMAN, OF CHANUTE, KANSAS.

HAY-DERRICK.

1,061,838.

Specification of Letters Patent.

Patented May 13, 1913.

Application filed October 22, 1912. Serial No. 727,177.

To all whom it may concern:

Be it known that I, ALFRED HAGERMAN, a citizen of the United States, residing at Chanute, in the county of Neosho and State of Kansas, have invented new and useful Improvements in Hay-Derricks, of which the following is a specification.

This invention relates to hay derricks, and it has for its object to produce a derrick of simple and inexpensive construction which may be conveniently handled for the purpose of stacking or otherwise manipulating hay, straw, fodder and the like.

A further object of the invention is to produce a derrick consisting of a truss structure having an arm and simple and efficient means for adjusting the arm and for supporting it in various positions to which it may be adjusted.

With these and other ends in view which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts which will be hereinafter fully described and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations and modifications within the scope of the claims may be resorted to when desired.

In the drawings, Figure 1 is a perspective view showing a derrick constructed in accordance with the invention, set up and arranged for operation. Fig. 2 is a vertical sectional view of the derrick post or upright. Fig. 3 is a vertical sectional view taken on the line 3—3 in Fig. 2. Fig. 4 is a horizontal sectional view taken on the line 4—4 in Fig. 2. Fig. 5 is a sectional detail view of the base or supporting member. Fig. 6 is a transverse sectional view taken on the line 6—6 in Fig. 5. Fig. 7 is a perspective detail view, enlarged, of one of the stakes and related parts constituting part of the anchoring device.

Corresponding parts in the several figures are denoted by like characters of reference.

The post or upright of the improved derrick is a truss structure composed of side members 1, 1 which are connected together at their upper and lower ends by means of sleeves or ferrules 2, 3, said side members being spaced intermediate their ends by means of braces consisting of flat arcuate straps 4, 4, said straps being terminally secured upon the inner opposed faces of the side members 1 in such fashion that the arch portions thereof will abut on each other, said arch portions being connected together by a fastening member, such as a bolt or rivet 5.

Interposed between the side members 1, 1 at the lower ends thereof is a sleeve 6 which is concentric with the ferrule 3, and between said sleeve and ferrule passes the lower end of a truss rod 7 having a head 8 to prevent its withdrawal. The upper end of the truss rod 7 extends between the upper extremities of the side members 1 and projects beyond the upper end of the ferrule 2 where it is provided with a nut or cap 9 having threaded connection therewith. The nut or cap 9 has a reduced neck portion 10 of circular cross section on which a cap plate 11 is revolubly mounted. The truss rod is spaced from the upright intermediate the upper and lower ends of the latter by means of a strut 12 comprising side members 13 which are secured on the side members 1 of the upright by means of clip plates 14 and bolts 15, 15', said bolts being provided with spacing members 16, 16', said spacing members consisting of sleeves, the latter of which carries a guide pulley 17. The bolt 15' supports the derrick arm D which is composed of two side members 18 supporting between them, adjacent to their outer ends, a hoisting pulley 19. Connected with the derrick arm adjacent to the outer end thereof is one end of an adjusting rope or cable 20 which is guided through a notch 21 at the upper end of the derrick post, the other end of said adjusting cable being connected with a slide 22 movable on the truss rod 7 where it may be secured in adjusted position by means of a set screw 23, thereby supporting the derrick arm in any position to which it may be adjusted.

Suitably connected with the cap plate 11 are the upper ends of the guy ropes or cables 24, three in number, said guy ropes being provided at their lower ends with chains 25 suitably connected therewith. These chains are for the purpose of connecting the guy ropes with stakes 26 that are driven in the ground in suitable and convenient positions, each of said stakes being provided with a collar 27 serving for the attachment of a snap hook 28 with which a chain link may be quickly and conveniently connected or disconnected.

The base or supporting member B of the improved derrick consists of side members 29 which are spaced apart by a block 30 and connected together by bolts 31, 32, said bolts being positioned intermediate the spacing block 30 and the ends of the side members. Supported for rotation on the bolt 31 is a pulley 33. Supported pivotally between the side members 29 intermediate the spacing block 30 and the bolt 32 is a stake 34 which may be driven into the ground for the purpose of holding the base in position, it being obvious that the said stake may be driven in an inclined direction for the purpose of better resisting strain on the frame exerted by the hoisting rope which is guided over the pulley 33. It will also be seen that the base may be very easily positioned so as to cause the guide pulley 33 to be faced in any desired direction. The frame supports a saddle 35 which is disposed about midway between the ends of the frame, said saddle having an aperture 36 to receive the projecting lower end of the sleeve 6 at the lower end of the derrick structure, thus permitting said structure to be conveniently rotated about the axis of the sleeve 6.

A hoisting rope or cable 37 is guided over the hoisting pulley 19 and the guide pulley 17, through the sleeve 6 and beneath the guide pulley 33 of the base. One end of the hoisting rope carries an ordinary hay fork 38 or other means for supporting a load; the other end of the hoisting rope is provided with an evener or with a swingletree 39 for the attachment of the draft animals.

As will be seen from the foregoing description, taken in connection with the drawings hereto annexed, I have produced a hoisting apparatus of very simple construction which may be efficiently utilized for the purpose of hoisting and stacking hay, straw, fodder or the like or for hoisting purposes generally. The tilt or inclination of the derrick member may be regulated by the guy ropes which may be conveniently lengthened or shortened by unlocking the chains 25 from the snap hooks 28 and readjusting them, as may be desired. The derrick arm may likewise be adjusted or tilted to various positions where it may be secured by the set screw 23 en-

gaging the truss rod 7 through the slide 22. The derrick member may be rotated about its vertical axis or that of the sleeve 6 for the purpose of picking up the load and depositing the same in the desired position. The general construction and arrangement is simple, inexpensive and thoroughly efficient for the purposes for which it is provided.

Having thus described the invention, what is claimed as new, is:—

1. A derrick frame comprising side members, ferrules connecting said side members at their upper and lower ends, a sleeve interposed between the contacting lower ends of the side members and projecting downwardly beyond the ferrules, spacing members interposed between the opposed faces of the side members, a truss rod having its lower end positioned between the sleeve and ferrule at the lower end of the frame and provided with a head, the upper end of said truss rod being projected between the upper ends of the side members through and beyond the ferrule at the upper end of the frame, a cap nut threaded on the upper end of the truss rod, a strut spacing the truss rod from the derrick frame intermediate the ends thereof, a derrick arm connected with the strut, guide pulleys supported by the derrick arm and the strut, and a hoisting element guided over said pulleys and through the sleeve between the lower ends of the side members of the derrick frame.

2. A derrick frame having a strut and a truss rod, a derrick arm connected pivotally with the strut, a slide guided on the truss rod, means for securing the slide in adjusted position, and a suitably guided flexible adjusting element connecting the slide with the derrick arm.

3. A derrick frame including side members spaced apart intermediate their upper and lower ends, a strut having side members positioned adjacent to the inner faces of the side members of the frame, clip plates positioned adjacent to the outer faces of the side members of the frame, bolts connecting the clip plates with the side members of the strut, a truss rod supported by the strut and terminally connected with the derrick frame, a guide pulley journaled on one of the bolts, a derrick arm pivoted on the other bolt and having a guide pulley at its outer end, a slide movable on the truss rod, means for securing the slide in adjusted position, and a suitably guided flexible element connecting the slide with the derrick arm.

4. A derrick frame comprising side members connected together at their upper and lower ends and spaced apart intermediate said ends, a strut connected with the frame, ferrules at the upper and lower ends of the frame, a truss rod supported by the strut and spaced thereby from the frame, the

lower end of said truss rod being extended
through the ferrule at the lower end of the
frame and provided with a head and the
upper end of the truss rod being projected
5 through the ferrule at the upper end of the
frame, a nut threaded on the projecting up-
per end of the truss rod and having a neck
of circular cross section, a cap plate swiv-

eled on said neck, and guy members con-
nected with said cap plate.

10

In testimony whereof I affix my signature
in presence of two witnesses.

ALFRED HAGERMAN.

Witnesses:

EDWARD C. BURNS,
LARS MANSSON HAGERMAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."