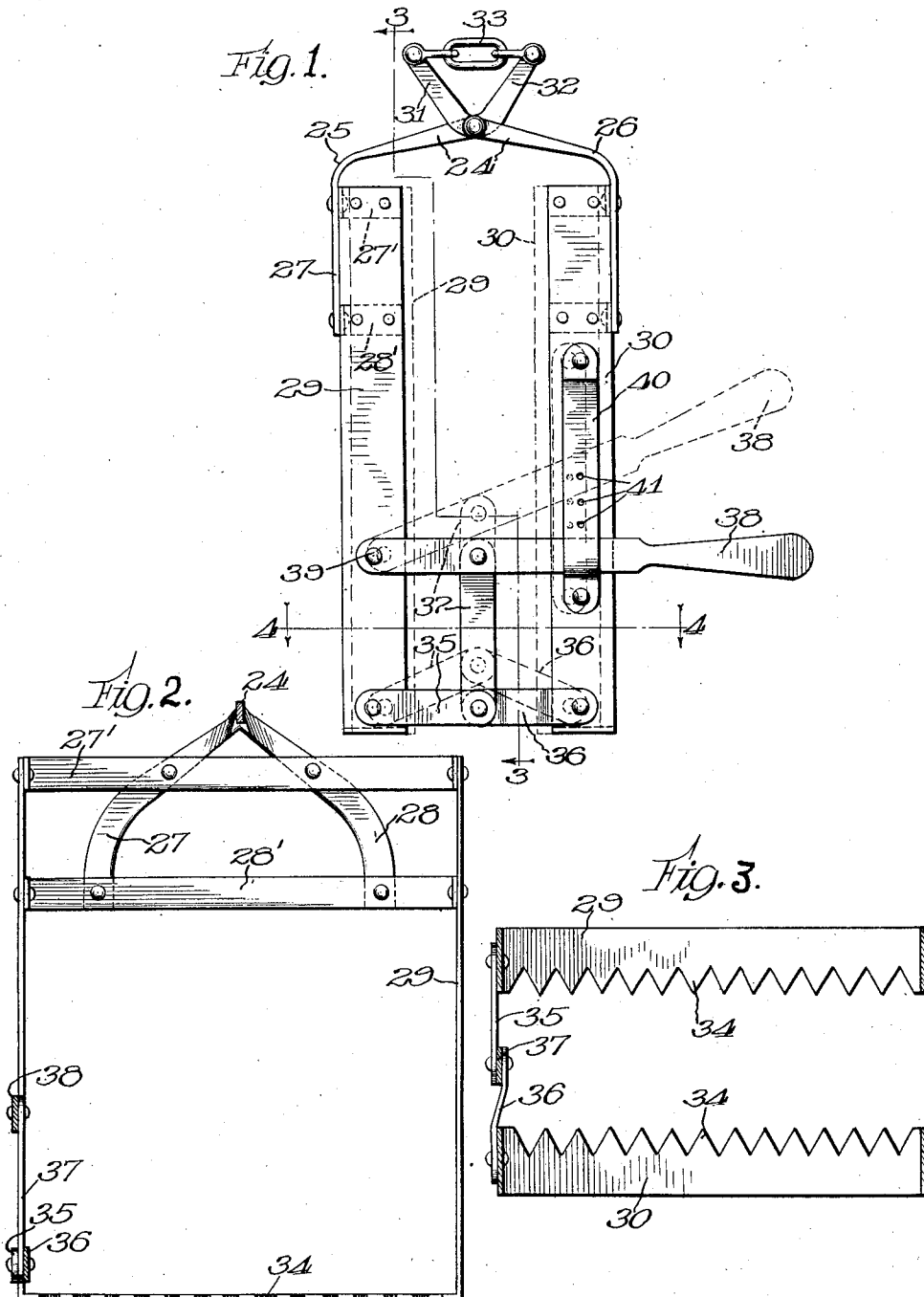


F. A. ALFVEGREN.
GRAPPLE.
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UNITED STATES PATENT OFFICE.

FREDERICK ALBIN ALFVEGREN, OF BIRCH LAKE, WISCONSIN.

GRAPPLE.

1,037,712.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FREDERICK A. ALFVEGREN, a citizen of the United States, residing at Birch Lake, in the county of Bayfield and State of Wisconsin, have invented certain new and useful Improvements in Grapples, of which the following is a specification.

My invention relates to loading devices and has particular reference to an apparatus for loading and unloading bales of bark used for tanning and other purposes. The object of the invention is to provide an improved grapple for such apparatus particularly adapted for use in a timbered country either to load the bark onto the wagons which convey it to cars standing on side-tracks, or to unload the bark from the wagons into the cars, whether it be flat cars or box cars.

With the above-named objects in view my invention consists in a novel gripping device hereinafter described in detail, illustrated in the accompanying drawings and incorporated in the appended claim.

In the drawings Figure 1 is an enlarged view of the gripping device shown in end elevation. Fig. 2 is a section taken on line 3—3 of Fig. 1. Fig. 3 is a section taken on line 4—4 Fig. 1.

Referring, now, to the construction of the gripping device 13. This consists of a pair of tongs 24, the levers 25 and 26 of which are each provided with forked portions, or branches 27 and 28 which diverge from the end of each of the levers, and are secured to the sides of gripping jaws 29 and 30, or, as in the form of jaw herein shown, to cross-bars 27' and 28', the jaws 29 and 30 being substantially rectangular metal frames. The lower sides of these frames or jaws are provided with teeth or serrations 34 which enhance the effectiveness of the jaws in taking hold of the material. The handles 31 and 32 of the tongs are connected by three links 33, the middle one of which serving as a connection with the hoisting rope 19. The lower, or free ends, of the jaws are provided with separate means for bringing them together upon a bale or package of material, which means are operated independently of the gripping force applied by the tong-levers, as an initial grip upon the material offering resistance to the tongs and causing them to operate promptly. For this purpose the lower

ends of the jaws are connected by toggle-links 35 and 36, to the pivot-joint of which is pivoted the lower end of a link 37, the upper end of the latter being pivoted to a lever 38 fulcrumed at 39 on the jaw 29, the link 37 serving as a connection between the lever and the toggle-links. The handle-end of the toggle-operating lever 38 is shown held for movement against the edge of the jaw 30, by means of a retaining strap or guide 40. Through this strap and the edge of the frame a series of holes 41 may be drilled for the reception of a pin or nail to hold the lever in its raised or operative position indicated by dotted lines.

In operation my invention is used as follows: A derrick or crane on which this grapple is mounted is dragged into a suitable position alongside a car and moved from car to car as each has been loaded. A load having been placed within reach of the same, the gripping device is engaged with one of the outer bales of the load, by pushing the jaws 29 and 30 over the sides of the bale. This is done most conveniently by a horizontal or side movement. The lever 38 is then operated to draw the jaws together upon the lower part of the bale. Of course this force will be greatest at the side of the jaws where the lever is placed, no lever being shown on the opposite side, but if the jaw-frames are rigidly constructed sufficient force will be applied along the whole rows of serrations or teeth on the lower ends of the frames. Aside from actually affording a hold upon the material by the aid of the lever 38 its function is to provide a resistance to the pull of the hoisting rope by the weight of the bale of material so as to forcibly operate the levers of the tongs, the operation of these tongs upon the substantially parallel jaws to cause them to grip the material with the necessary force irrespective of the lever 38. However, except for the initial grip afforded by this lever the tongs might not close with sufficient force but permit the jaws to slip off the bale at the beginning of the pull upon the hoisting rope. The wide jaws are designed to grip the sides of the bale from top to bottom and prevent its being torn apart or disrupted by the handling.

The grapple is equally as serviceable to load the wagons where the bark is baled, as out in the timber far away from the tracks, and may first be used to load a caravan of

wagons and then accompany them to the car tracks.

The device is equally suitable for handling other products of like form and requiring like handling.

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

A gripping device comprising a pair of tongs, links connecting the handles of the levers of said tongs, a pair of substantially parallel jaws upon said levers, each of said levers being in the form of a frame having teeth on its lower side, said levers having divergent branches secured to said jaws

whereby the latter are supported in approximately parallel arrangement, toggle links connecting the lower and free ends of said jaws, a lever connected with said toggle links, said lever fulcrumed on one of said jaws, and a strap supporting said lever on the other of said jaws for angular movement only.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

FREDERICK ALBIN ALFVEGREN.

Witnesses:

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