Nov. 19, 1929. D. C. STROMEYER 1,736,102

PORTABLE CRANE

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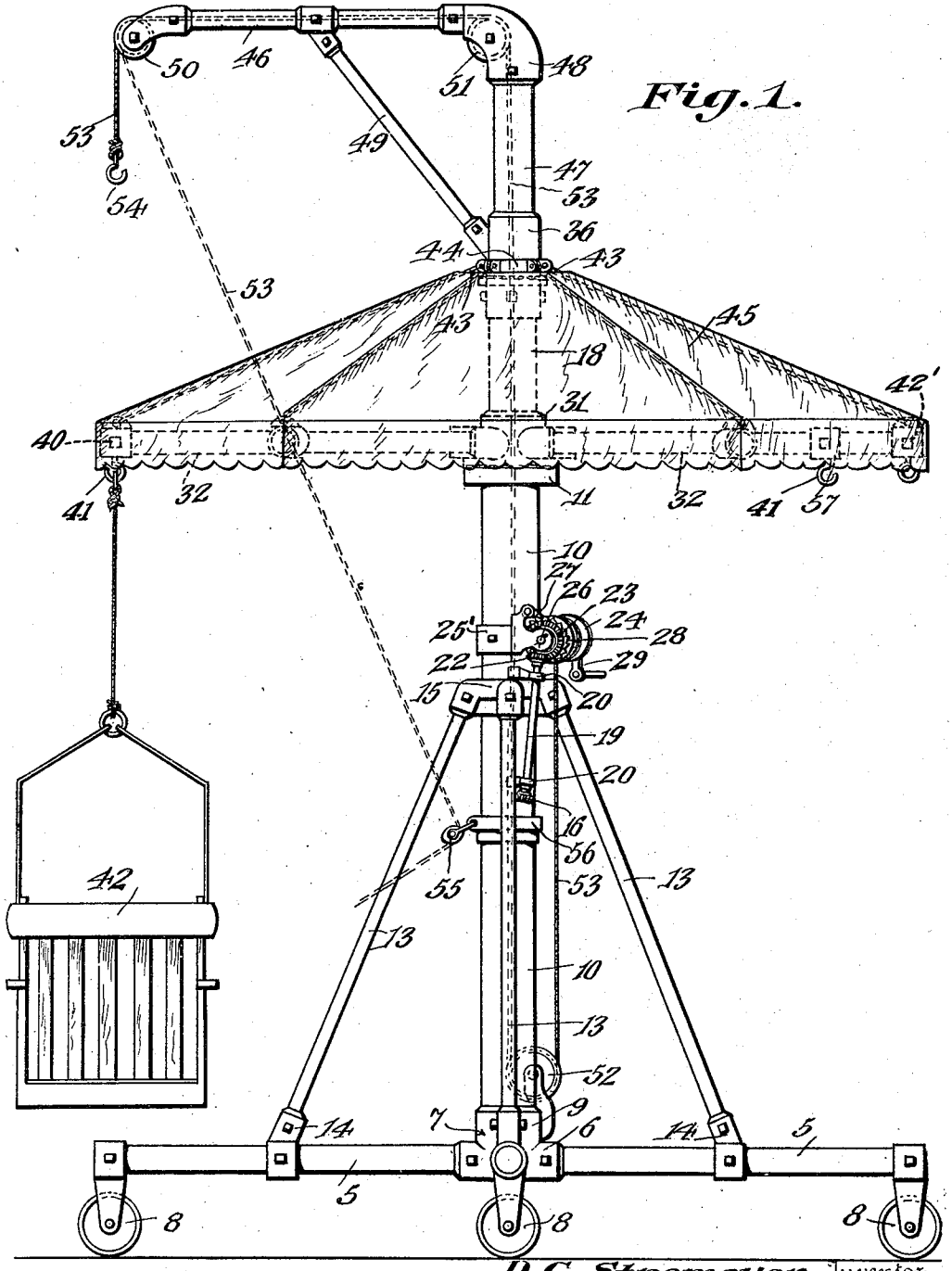


Fig. 1.

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Fig. 2.

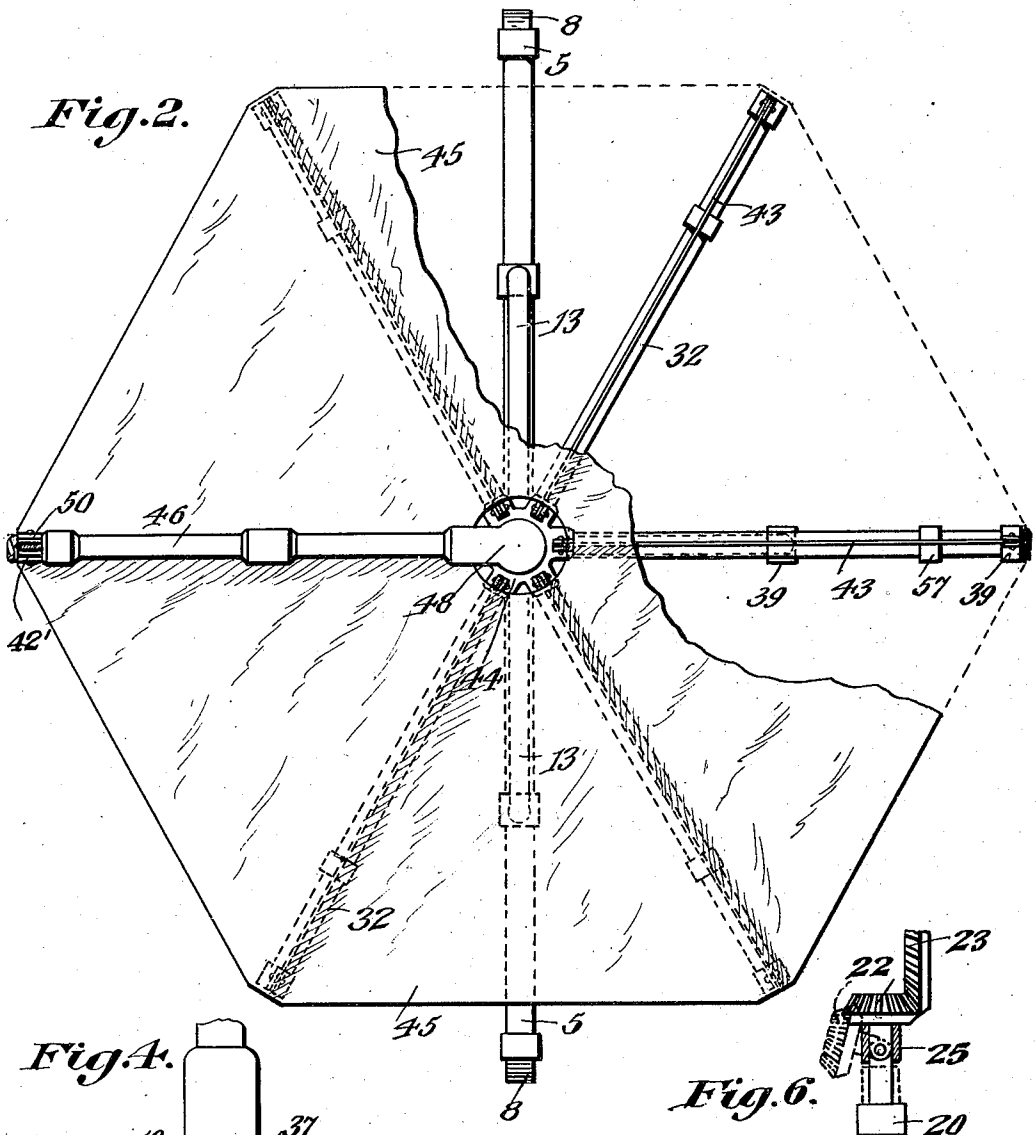


Fig. 4.

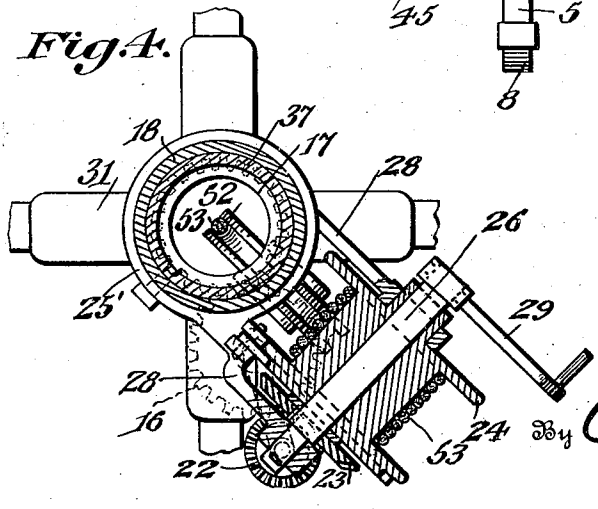


Fig. 6.

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Fig. 3.

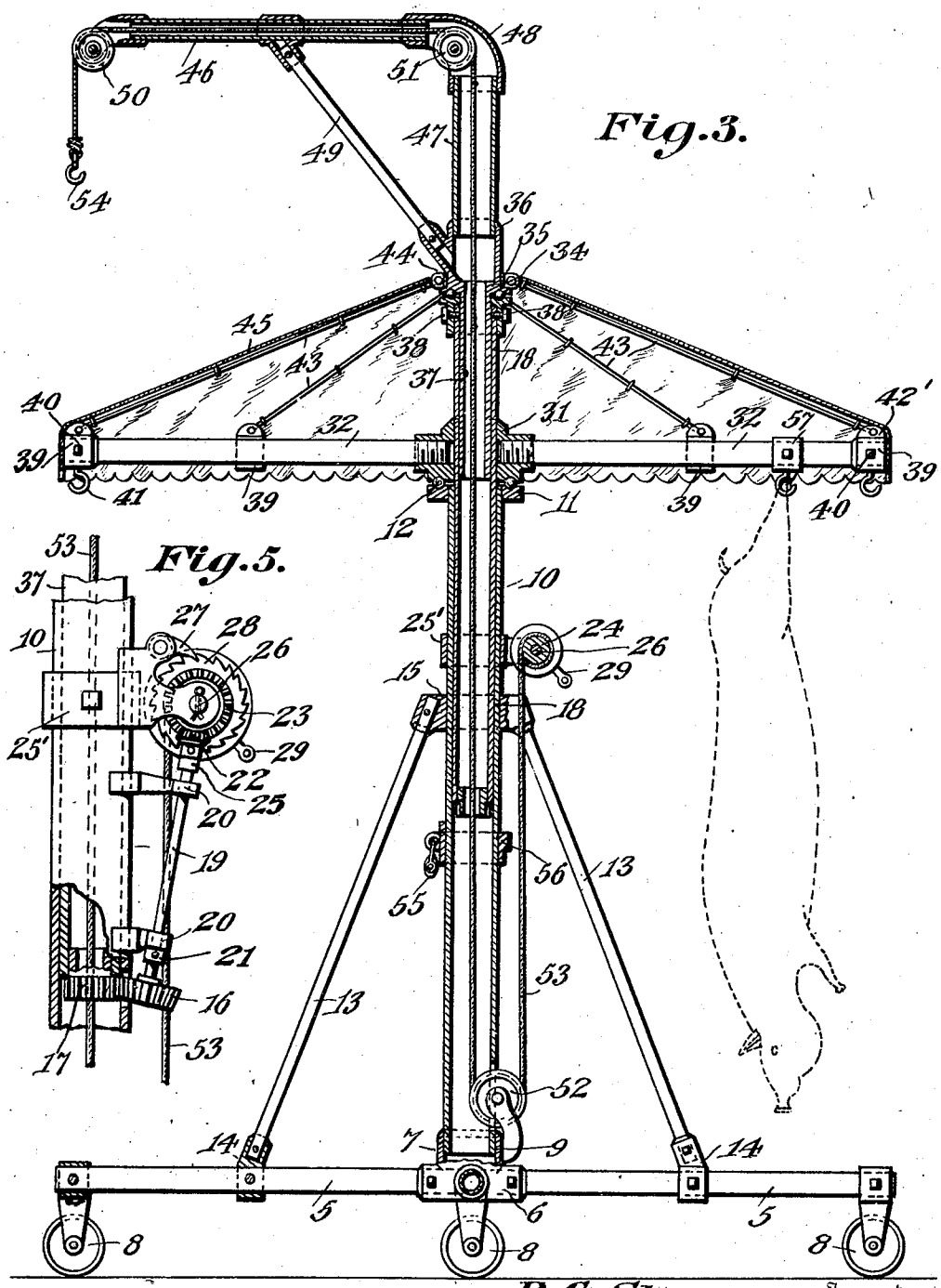


Fig. 5.

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Patented Nov. 19, 1929 1,736,102

UNITED STATES PATENT OFFICE

DIETRICH C. STROMEYER, OF ST. LOUIS, MISSOURI

PORTABLE CRANE

Application filed December 31, 1928. Serial No. 329,366.

This invention relates to portable cranes, the primary object of the invention being to provide a portable crane especially designed for farm use to facilitate the handling and loading of heavy articles that usually require the services of several men in the handling thereof.

A further object of the invention is the provision of a crane wherein the crane arm may be rotated in a horizontal plane so that the crane may be adjusted for loading and unloading articles.

A still further object of the invention is to provide an operating means for operating the hoisting cable or crane simultaneously or independently of each other, at the will of the operator.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, may be made within the scope of what is claimed, without departing from the spirit of the invention.

Referring to the drawings.

Figure 1 is an elevational view of a portable crane constructed in accordance with the invention.

Figure 2 is a plan view thereof, a portion of the awning being cut away.

Figure 3 is a vertical sectional view through the crane.

Figure 4 is a sectional view through the main post and operating mechanism.

Figure 5 is a detail view partly in section showing the operating mechanism.

Figure 6 is a detail view illustrating the pivoted shaft section and pinion supported thereby.

Referring to the drawings in detail, the base includes a plurality of arms 5 formed preferably of pipe sections which have their inner ends positioned in sockets 6, forming a part of the hub 7.

At the free ends of the arms 5 are arranged supporting wheels 8 by means of which the crane may be moved from place to place providing a portable structure. The hub 7 includes a substantially large socket member 9 disposed centrally of the hub and is designed to receive the lower end of the post 10 which is hollow and provided at its upper end with a bearing 11.

This bearing 11 is formed with a groove to accommodate the balls 12 that support the upper section of the crane in such a way as to permit the crane to rotate, should it be desired to turn the crane arm in lifting an article from one position and transferring it to another position at the opposite side of the crane.

The post 10 is held against movement with respect to the base, by means of the brace rods 13 that have their lower ends fitted in the socket members 14 that are secured to the arms 5, while the upper ends of the rods 13 are secured within sockets of the collar 15, secured to the post 10 an appreciable distance above the base thereof. Formed in the post 10 is an opening through which the pinion 16 operates, the pinion 16 meshing with the teeth 17 formed at the lower end of the telescoping section 18 of the supporting post of the crane.

Pinion 16 is secured at the lower end of the shaft 19 which is mounted in bearings 20, the shaft 19 being held against movement longitudinally of the bearings, by means of the collars 21 that engage the bearings, as clearly shown by Figure 5 of the drawings.

At the upper end of the shaft 19 is a pinion 22 that is pivotally connected to the shaft 19 so that it may swing from the position as shown by Figure 5 of the drawings, to a position out of contact with the ring gear 23 secured to one end of the drum 24. A collar 25 slides on the shaft 19 and is adapted to move into engagement with the hub of the pinion 22 to normally hold the pinion 22 in its active position. The drum 24 is mounted on the shaft 26 that has is ends mounted in bearings formed at the outer ends of arms 28, there being provided a handle 29 for rotating the drum 24. A pawl indicated at 27 moves over the ratchet 30 at one end of the drum 24.

Mounted on the post 18 is a socket member

31 into which the inner ends of the supporting arms 32 extend, the lower ends of the member 31 being formed with a circular groove to accommodate the balls 12 to allow the socket member and arms 32 to rotate freely. The reference character 34 designates a bearing member formed with a groove in its upper surface to accommodate the balls 35 to engage the head 36 formed at the upper end of the hollow post 37 which extends into the post section 18.

Bolts 38 extend through the bearing member and registering openings in the post section 18 to secure the bearing member to the post section 18. Secured to the outer ends of the arms 32 are collars 39 which are secured in position by means of the bolts 40. Hooks 41 depend from the collars 40′ and provide supports for the chairs 42 should it be desired to convert the crane into a lawn seat.

Flanges 42′ extend upwardly from the collars 39 to which flanges rods 43 are connected, the opposite ends of the rods 43 being connected to the ring member 44 that is mounted on the head 36. These rods 43 provide a support for the awning or cover 45 which is shown as stretched thereover.

The reference character 46 designates the main crane arm which is also hollow and is connected with the hollow post section 47 by means of the elbow 48, the arm 46 being braced by means of the angularly disposed arm 49. Pulley 50 is mounted at the free end of the arm 46 while pulley 51 is mounted within the elbow 48. A pulley 52 is mounted at the base of the post and extends through an opening formed in the post so that a portion of the pulley 52 operates within the post 10.

Operating over the pulleys is a cable 53 that is wound on the drum 24, the free end of the cable being supplied with a hook 54 that may be hooked into an article to be lifted by the crane. The cable 53 may be passed through the pulley 55 that is carried by the collar 56, in a manner as shown in dotted lines in Figure 1 of the drawings, so that a more direct pull may be had with the device, should it be desired to drag articles along the ground surface, or move heavy articles with the crane.

Adjustable hooks such as shown at 57 may be provided on the arms 32 so that articles may be hung on the arms 32, and in butchering hogs, it is obvious that these hooks may be conveniently used for supporting a hog after it has been killed, so that the butcher may readily butcher the hog.

I claim:

In a portable crane, a base, a tubular post extending upwardly from the base, a power drum at the upper end of the post and having a gear on one end thereof, said post having a lateral opening, a tubular member extending into the post and having a gear on the lower end thereof, said gear being disposed opposite to the opening, a right angled arm at the upper end of the tubular member, a shaft secured to the post, a pinion at the lower end of the shaft for engagement with the gear on the tubular member, said pinion extending through the opening in the tubular post, a pivoted end section forming a part of the shaft, a pinion on the pivoted end section to mesh with the gear at one end of the power drum, a sleeve on the shaft adapted to slide over the pivoted end section to hold the pivoted end section in its active position, pulleys mounted within the tubular post and tubular member, a cable operating over the pulleys and extending through the post and tubular member, one end of the cable being wound on the power drum, and a lever on the power drum for operating the power drum.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

DIETRICH C. STROMEYER.