June 9, 1925. 1,540,919

W. A. BALDWIN

SHEAF LOADER

Filed Oct. 8, 1923

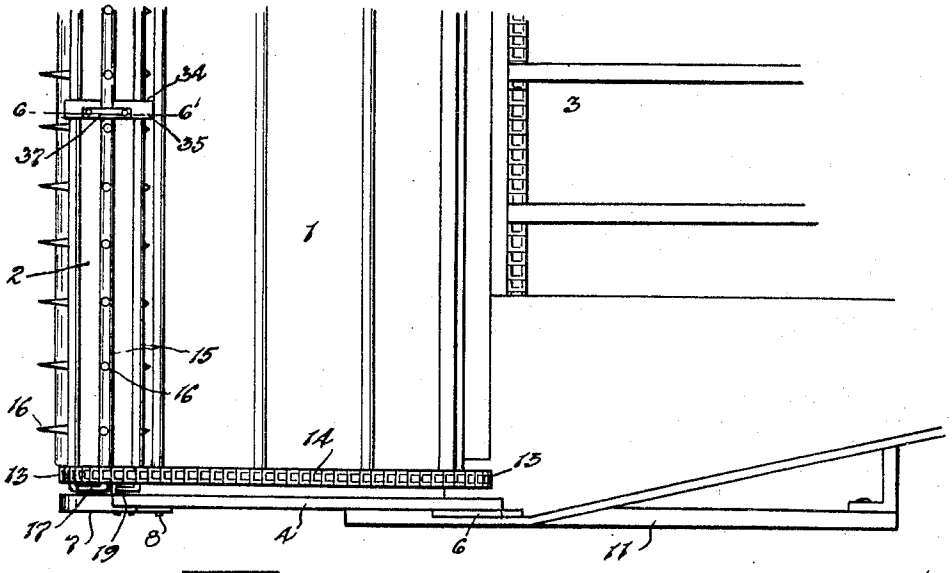


Fig 1

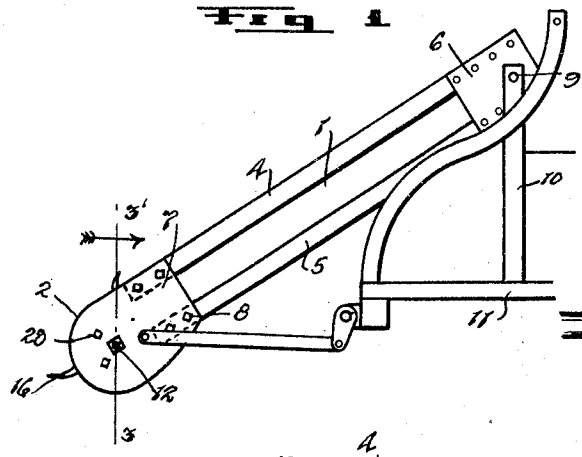


Fig 2

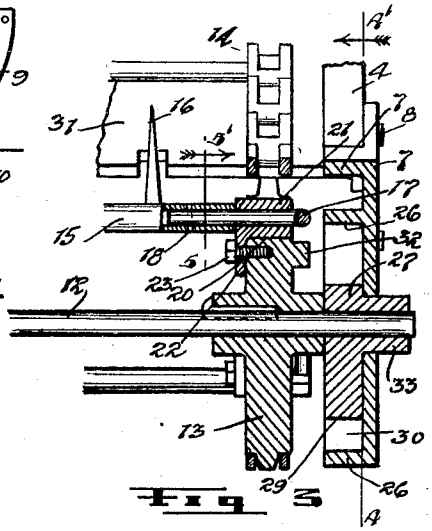


Fig 3

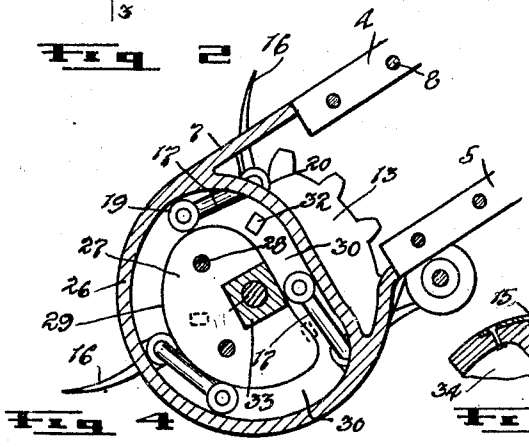


Fig 4

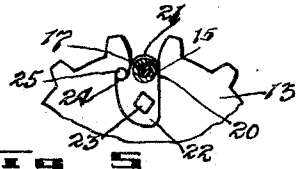


Fig 5

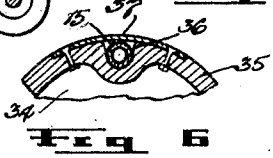


Fig 6

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UNITED STATES PATENT OFFICE.

WILLIAM ALBERT BALDWIN, OF WINNIPEG, MANITOBA, CANADA.

SHEAF LOADER.

Application filed October 8, 1923. Serial No. 667,362.

To all whom it may concern:

Be it known that I, WILLIAM ALBERT BALDWIN, a subject of the King of Great Britain, and resident of the city of Winnipeg, in the Province of Manitoba, Canada, have invented certain new and useful Improvements in Sheaf Loaders, of which the following is the specification.

The invention relates to improvements in sheaf loaders and particularly to the pickup or nose end of the pickup conveyor of such a machine and an object of the invention is generally to arrange the construction of the parts of the pickup so that the various parts can readily be dismounted for repair or other purposes and such that the parts can be manufactured in a cheap and durable manner and readily assembled.

A further object is to construct the cam grooves which control the movement of the prongs from demountable parts which permit not only of the easy truing up of the cam, but also permits of the removal of a broken part and the substitution of a new piece without entailing the loss of a complete head.

A further object of the invention is to construct the pickup so that the prong carrying shafts or pipes can be quickly removed from the chain wheels without having to dismount any other part, thereby permitting of the renewal of broken prongs in the field, provided substitute shafts are carried as part of the outfit.

With the above more important objects in view the invention consists essentially in the arrangement and construction of parts hereinafter more particularly described and later pointed out in the appended claims, reference being had to the accompanying drawing in which:

Fig. 1 is a plan view of a portion of the forward end of a sheaf loader equipped with my invention.

Fig. 2 is a side view of the pickup conveyor of the sheaf loader.

Fig. 3 is an enlarged detailed vertical sectional view at 3—3′ Fig. 2 and looking in the direction of the applied arrow.

Fig. 4 is a vertical sectional view at 4—4′ Fig. 3 and looking inwardly.

Fig. 5 is a vertical sectional view at 5—5′ Fig. 3 and looking inwardly.

Fig. 6 is an enlarged detailed vertical sectional view at 6—6′ Fig. 1.

In the drawing like characters of reference indicate corresponding parts in the several figures.

The present sheaf loader embodies an inclined pickup conveyor 1 which has the lower or nose end provided with a pronged pickup appliance 2, the prongs being rotated and controlled to raise the sheaves from the ground and deposit them on the conveyor. The conveyor, in turn, elevates them to a second discharging conveyor 3 which carries the sheaves to a position where they can be deposited in an accompanying wagon rack. A sheaf loader of this general type is now in use and the present invention relates more particularly to the nose end of the conveyor and the means for controlling the pick up prongs.

The side frames of the conveyor 1 are identically constructed, each comprising a pair of parallel spaced side bars 4 and 5 preferably angle irons and the bars are connected at their upper ends by a top plate 6 rivetted or bolted thereto and at their lower ends by a head plate 7 fastened by bolts 8 to the bars. The upper shaft 9 of the conveyor is mounted in the plates 6 and is carried rotatably in the upper ends of similar standards 10 extending upwardly from the main frame 11 of the machine. The lower or nose end of the conveyor is accordingly pivotally supported so that it can be raised or lowered in respect to the ground. The lower conveyor shaft 12 is rotatably carried in a special manner by the headplates and the said shafts 9 and 12 are both fitted adjoining their ends and within the side frames with chain wheels 13, the chain wheels carrying the side chains 14 of the conveyor.

In the present instance the chain wheels 13 of the lower shaft rotatably support three similar pipes or shafts 15 the pipes being positioned 120 degrees apart and being provided each with a set of suitably spaced extending prongs 16. The ends of the pipes are all provided with equi-length cranks 17 each crank being in reality a rod having its ends oppositely bent and positioned at right angles to the body of the rod and one end inserted in the pipe and fastened by a pin 18 and the other end fitted with a roller 19.

Each of the lower chain wheels 13 is fitted at its periphery with a plurality of similar

semi-circular notches 20, the notches appearing between the bases of adjacent teeth and being positioned 120 degrees apart. In each notch a sleeve 21 is mounted, the sleeves rotatably supporting the ends of the crank attached to the pipes 15 and each sleeve is supplied with an inwardly extending head 22 which is fastened by a removable bolt 23 to the inner face of the chain wheel. The head of each sleeve is formed also to provide an offset hook 24 which is adapted to engage with a pin 25 carried by the chain wheel. This latter hook or pin serves in each case as a liner when setting the bolts 23 and also assists the bolts in preventing the working loose of the sleeves.

According to this arrangement it will be apparent that any of the pipes 15 can be dismounted from the chain wheels by simply undoing the bolts 23, turning the heads of the sleeves to free the catches from the pins and subsequently withdrawing the sleeves from the notches.

The rollers 19 are positioned directly at the inner side of the head plates 17 and the head plates are provided each with an inwardly extending flange 26, the flange extending completely around the lower semicircular end of the head plate and then passing across the head plate as best shown in Fig. 4 to form an outer continuous track.

A cam plate 27 is secured by bolts 28 to the inner side of each head 7 and the periphery of the cam plate in each instance forms an inner track 29 directly opposite the former track, the two tracks in reality forming a cam shaped groove 30 adapted to receive the rollers 19 and control the movement of the cranks. Here it will be observed that in the rotation of the chain wheels the cranks trail behind the shafts 15 and that the shape of the cam groove controls through the rollers and cranks the position of the prongs 16. The shape of the cam grooves is such that the prongs are extended as they swing around the underside of the conveyor nose, are held extended until they reach the top side thereof and are then gradually withdrawn to clear past the deck 31 of the conveyor frame. This latter movement of the prongs is not new as it is used on machines previously invented and now on the market, and accordingly a more detailed description of the action is not entered into.

In order to positively prevent the cranks from swinging ahead and leading instead of trailing, I have provided the inner sides of the chain wheels with stops 32 which permit of the free movement of the cranks under the control of the cam grooves, but absolutely prevent them from swinging ahead as the rollers are moving in the upper parts of the grooves 30.

The plates 27 are fitted with square bosses or sleeves 33 which are mounted in and extend outwardly through the heads 7 and the plates and bosses form an extensive bearing for the ends of the shaft 12. The pipes 15 are supported centrally of their length by a wheel 34 mounted on the shaft 12 and provided with a peripheral flange 35 which is supplied with cross channels 36 adapted to receive and support the pipes. The pipes are held in place by straps 37 suitably bolted to the flange of the wheel.

From the above description it will be obvious that the various parts of the pick-up can be readily dismounted for repair or other purposes and also that should breakage occur it will not entail much loss as the broken part can readily and cheaply be renewed. Further, it will be apparent that a comparatively long bearing is provided for supporting the ends of the shaft 12 and such bearings are firmly held in place so that they cannot work loose and cause undesirable wear which is detrimental to the efficient operation of the pick-up.

What I claim as my invention is:

1. In a sheaf loader, a pick up comprising opposing rotatably mounted and driven chain wheels, a plurality of suitably spaced prong carrying shafts extending between and through suitable notches provided in the chain wheels and bearings rotatably supporting the shafts and detachably attached to the chain wheels.

2. In a sheaf loader, a pick up comprising opposing rotatably mounted and driven chain wheels, said chain wheels having suitably spaced notches formed in the periphery thereof, bearing sleeves mounted in the notches and detachably connected to the wheels and similar prong carrying shafts extending between the chain wheels and having the ends thereof rotatably mounted in the bearing sleeves.

3. In a sheaf loader, a pick up comprising a rotatably mounted shaft, opposing driven chain wheels mounted on the ends of the shaft, said chain wheels having suitably spaced notches formed in the peripheries thereof, the said notches extending inwardly from the bases of adjacent teeth bearing sleeves mounted in the notches and provided with extensions detachably fastened to the chain wheels, a plurality of similar parallel and prong carrying shafts rotatably carried by opposing pairs of bearing sleeves, said shafts having the ends thereof terminating in cranks positioned at the outer sides of the chain wheels.

4. In a sheaf loader, a pick up comprising a rotatably mounted shaft, opposing driven chain wheels mounted on the ends of the shaft, said chain wheels having suitably spaced notches formed in the peripheries thereof, the said notches extending inwardly from the bases of adjacent teeth, bearing

sleeves mounted in the notches and provided with extensions detachably fastened to the chain wheels, a plurality of similar parallel prong carrying shafts rotatably carried by opposing pairs of bearing sleeves, said shafts having the ends thereof terminating in cranks positioned at the outer sides of the chain wheels, and suitably positioned stops located on the outer faces of the chain wheels and engageable with the cranks.

Signed at Winnipeg, this 14th day of September, 1923.

WILLIAM ALBERT BALDWIN.

In the presence of—

GERALD S. ROXBURGH.