

(No Model.)

H. O. ROBERTS.  
GRAIN ADJUSTER FOR BINDERS.

No. 385,375.

Patented July 3, 1888.

Fig. 1.

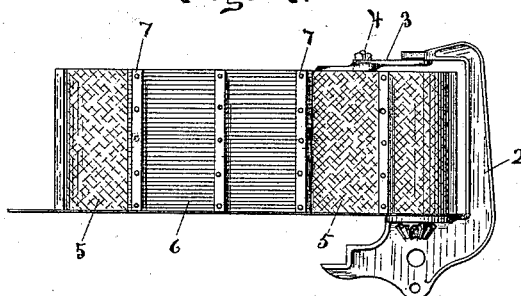


Fig. 2.

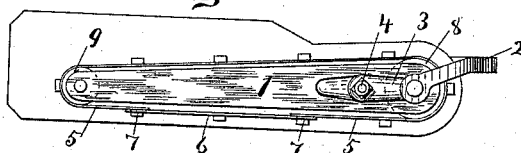


Fig. 3.

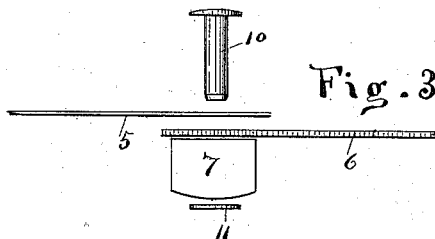
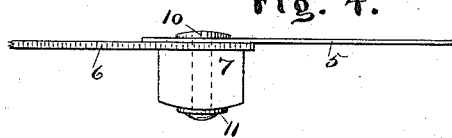


Fig. 4.



Witnesses.

Frank Gunther.  
Frank D. Merchant.

Inventor.

Humphrey O. Roberts.  
By *Strom* Atty.

# UNITED STATES PATENT OFFICE.

HUMPHREY O. ROBERTS, OF MINNEAPOLIS, MINNESOTA.

## GRAIN-ADJUSTER FOR BINDERS.

SPECIFICATION forming part of Letters Patent No. 385,375, dated July 3, 1888.

Application filed November 10, 1887. Serial No. 254,733. (No model.)

*To all whom it may concern:*

Be it known that I, HUMPHREY O. ROBERTS, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented a new and useful Improvement in Grain-Adjusters for Binders, of which the following is a specification.

My invention relates to improvements in "butt-adjusters" for self-binding grain-harvesters in which the well-known canvas belt is used to accelerate the movement of the butts of grain, (which usually lag behind the heads as it is delivered from the elevating mechanism to the binder-table,) thus carrying the grain-stalks to a position substantially parallel with the binder-table, and whereby the grain-stalks may also be adjusted endwise relatively to the binding mechanism, for the purpose of placing the band substantially at the middle of the length of the bundle when different lengths of grain are to be bound, all in a well-known manner.

As is well known, the canvas adjuster-belt as now used is subject to a variety of conditions which cause frequent changes of the tension of the said belt upon its driving and driven rollers, thereby making a frequent readjustment of the tension necessary. Thus a new canvas belt gradually lengthens by use, and it becomes necessary to frequently shorten the same to maintain a suitable tension; or if the belt becomes damp from any cause it will contract, and it becomes necessary to lengthen it, and as it becomes dry it lengthens again, and it again becomes necessary to shorten the same. This adjustment has been effected heretofore by providing the ends of the adjuster-belt with straps and buckles, whereby the said belt could be shortened or lengthened as required, or in making one of the two rollers over which the belt runs movable, whereby the distance between the said rollers could be increased or diminished to maintain the necessary tension of the belt.

The object of my invention is to provide an adjuster-belt whereby a suitable degree of tension upon the rollers of the adjuster will be maintained with much less attention from the operator.

My invention consists in making the adjuster-belt partly of non-elastic and partly of elastic material and in a peculiar means for

uniting the several ends thereof, whereby the said belt may be made permanently endless, and will by its extensible and contractile properties maintain a suitable tension upon the driving and driven rollers thereof without attention from the operator and without changing the distance between the centers of the said rollers, and in other matters more particularly described in the following specification.

Figure 1 is an elevation showing a grain-adjuster with my improvement; Fig. 2, a plan of the same, and Figs. 3 and 4 enlarged detail views showing my way of uniting the ends of the adjuster-belt to make the same permanently endless.

1 is the adjuster-frame, of any well-known simple construction, carrying the rollers 8 and 9 at each end thereof.

2 is a bracket within which the adjuster-frame swings in the usual manner, made removable from the frame by unscrewing the nut 4 and removing the clip 3, for the purpose of removing or replacing the adjuster-belt for shipment, storage, &c.

5 is a canvas belt similar to those in common use.

6 is a section of any suitably-elastic web or other material made to form a portion of the length of the whole belt.

7 are slats or stretches used to keep the belt stretched to its normal width and act upon the grain to assist in adjusting the same in a well-known manner.

10 and 11 are the rivets and washers used to attach the slats to the adjuster-belt, as usual.

The union of the ends of the elastic and non-elastic portions of the adjuster-belt is made on the canvas slats, as clearly shown in Figs. 3 and 4, where the same rivets and washers that are usually used to attach the slats to the belt are used in addition to unite the ends, as shown. Fig. 3 shows the position of the parts before and Fig. 4 after riveting.

I am aware that it is not new to make or use a permanently-endless adjuster-belt or to make the tension thereof automatically adjustable or self-acting; but where it has been done heretofore some means have been necessary whereby by mounting one roller in a separate frame the distance between the rollers over which the belt runs could be changed either by the operator or (if the belt was self-acting)

by interposing springs to provide the necessary tension, thus increasing the number of parts, the complicity of arrangement, expense of construction, and liability to derangement, 5 whereas in my invention I am enabled to make the entire adjuster of the simplest possible construction and still embrace the important features of a permanently-endless belt and self-adjusting tension.

10 What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a butt-adjuster for grain binders, an endless slatted adjuster-belt having the non-elastic portion 5, the elastic portion 6, and the 15 slats 7, in combination with the rivets 10 and washers 11, for joining the ends of the elastic and the non-elastic portions and attaching the slats thereto at the junction thereof, as described.

20 2. In a butt-adjuster for grain binders, an endless slatted adjuster-belt formed partly of elastic and partly of non-elastic material, and having the junction of the latter with the

former made at the point of attachment of the slats, whereby the same means used to attach 25 the slats to the belt may be used to join the ends of the elastic and non-elastic portions, in combination with the adjuster-frame 1, the supporting-bracket 2, and the removable clip 3, whereby the adjuster-frame may be removed 30 from the supporting-bracket to remove or replace the adjuster-belt, as described.

3. In a butt-adjuster for grain binders, an endless slatted adjuster-belt formed partly of elastic and partly of non-elastic material, and 35 having the union or junction of the former with the latter made at the point of attachment of the slats, whereby the same means used to attach the slats to the belt may be used to join the ends of the elastic and non-elastic 40 portions, substantially as described.

HUMPHREY O. ROBERTS.

Witnesses:

FRANK GUNTHER,

FRANK D. MERCHANT.