(No Model.)

2 Sheets—Sheet 1.

J. M. WISHART & W. F. BUZICK.

ROLLER ATTACHMENT TO GRAIN DRILLS.

No. 293,389. Patented Feb. 12, 1884.

Fig. 1

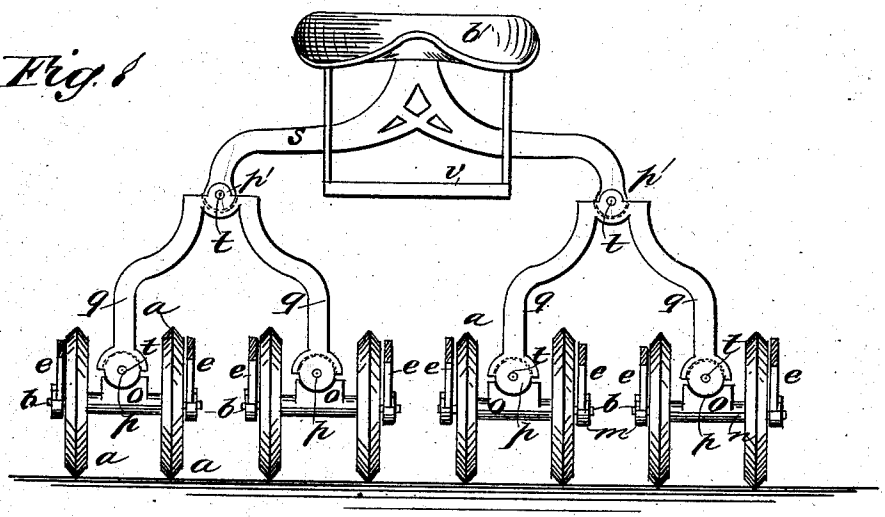


Fig. 2

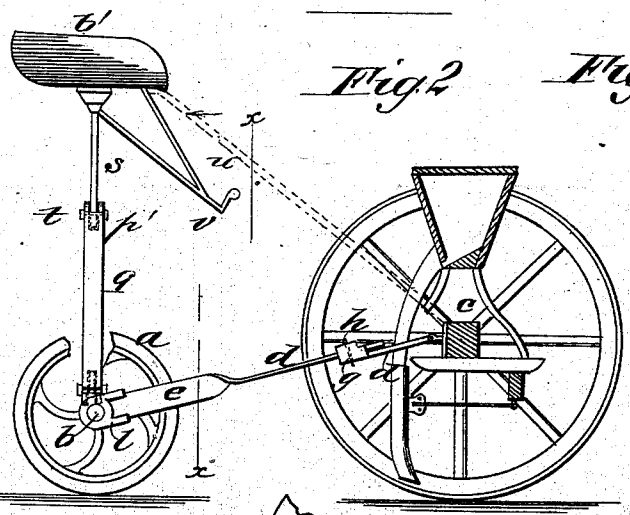


Fig. 7.

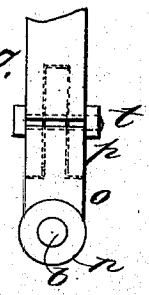


Fig. 3

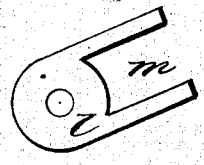


Fig. 4

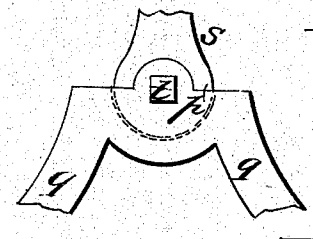


Fig. 5

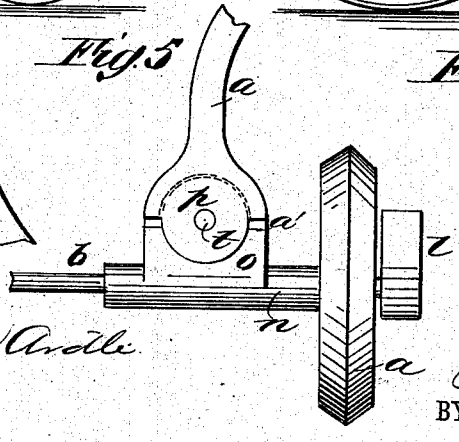
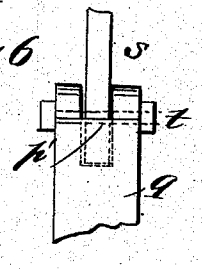


Fig. 6



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(No Model.) 2 Sheets—Sheet 2.

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ROLLER ATTACHMENT TO GRAIN DRILLS.

No. 293,389. Patented Feb. 12, 1884.

Fig. 8

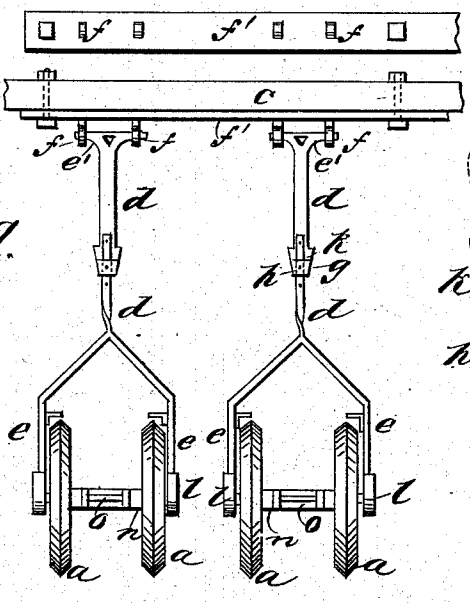


Fig. 9.

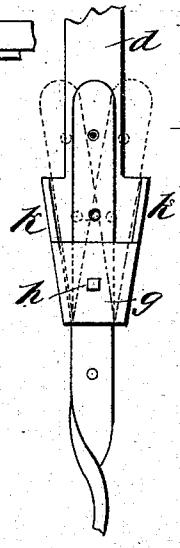
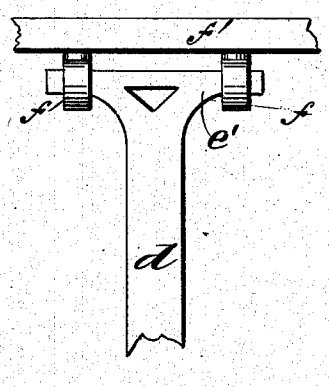


Fig. 11

Fig. 10.



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UNITED STATES PATENT OFFICE.

JAMES M. WISHART AND WILLIAM F. BUZICK, OF TOPEKA, KANSAS.

ROLLER ATTACHMENT TO GRAIN-DRILLS.

SPECIFICATION forming part of Letters Patent No. 293,389, dated February 12, 1884.

Application filed August 17, 1883. (No model.)

To all whom it may concern:

Be it known that we, JAMES M. WISHART and WILLIAM F. BUZICK, both of Topeka, in the county of Shawnee and State of Kansas, have invented a new and Improved Roller Attachment to Grain-Drills, of which the following is a full, clear, and exact description.

Our invention consists of improved arrangements of roller attachments to grain-drills, and means for connecting the same to the drill, the object of which is to provide a roller attachment of better action, and being more substantial and durable than any now in use, all as hereinafter fully described.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of the roller attachment and transverse section of the rods that connect it with the drill-axle, the section being taken on the line *x x* of Fig. 2. Fig. 2 is a side elevation of the roller attachment and a section of the grain-drill, said section being taken across the axle. Fig. 3 is a side view of the connecting device employed to connect the roller-axles and the connecting-rods on an enlarged scale. Fig. 4 is a side elevation of a joint of the roller-frame, also on an enlarged scale. Fig. 5 is a side elevation of one of the joints connecting the roller-frame with the roller-axles, also on an enlarged scale. Fig. 6 is an elevation of the joint of Fig. 4 in a plane at right angles to the plane of said figure. Fig. 7 is an elevation of joint, Fig. 5, at a right angle to the plane of that figure. Fig. 8 is a side elevation of the attaching-bar by which the connecting-rods of the roller attachment are coupled to the axle of the grain-drill. Fig. 9 is a plan view of a section of the axle of the grain-drill and part of the roller attachment. Fig. 10 is a detail of Fig. 9 on an enlarged scale, and Fig. 11 is a plan view of the adjustable and vibrating coupling of the connecting-rods.

We arrange a series of pairs of rollers, *a*, on a short axle, *b*, to each pair in a line, and connect them to the axle *c* of the grain-drill by a branched connecting-rod, *d*, to each pair, the branches *e* of said rods connecting with the projecting outer ends of the axle, and the upper ends of the said rods having a T-head, *e'*, connecting with the axle by a couple of eyebolts, *f*, attached to a plate, *f'*, bolted on the axle. The connecting-rods *d* have an extensible and vibrating joint, contrived by making them in two parts, one of which has a flaring socket, *g*, through which the other is passed and fastened by a pin, *h*, for which the said part passed through the socket has a series of holes for taking up or letting out the length of the connecting-rod. The sides *k* of the socket are extended along the bar to a greater length than the top of the socket, to form stops to prevent too much lateral play of the rollers. It will be seen that this joint enables the connecting-rods to be lengthened and shortened at will to connect with high or low drills, and allows all the necessary vibration for free and easy action; also, that it is a substantial and durable, as well as simple, joint. The connection with the axle *c* is also simple and substantial; likewise, the connection with the roller-axles is of a durable and also simple character, the latter connection consisting of a cast-metal box, *l*, which slips onto the end of the axle, and is then fastened to the end of a branch, *e*, of the connecting-rod, which is made to fit in the recess *m*, and is bolted therein. The wheels are thus secured on the axle without other fastenings; also the connecting-rods. Between the wheels each axle *b* has a sleeve, *n*, extending from one wheel to the other, to form shoulders for the insides of the wheels, and also to support the seat *o* of a rule-joint *p*, of a roller-frame, consisting of the uprights *q*, each of which rests on the axle of a pair of wheels. The top of this roller-frame forms the seat of another rule-joint, *p'*, whereon one leg of a seat-frame, *s*, rests, the other leg similarly resting on the uprights *q* of the next pair of rollers, which uprights are jointed to the axles by joints *o p*, like the first described. These rule-joints are connected by a joint-pin, *t*, but care is taken in the construction of the joints to make them so that the weight will rest on the joint-knuckles, and not on the pins, for durability. The pins are employed merely to prevent the joints from disconnecting when the rollers may happen to drop into a low place. It will be seen that by these joints the weight of the

frame is equally distributed on the rollers, and said rollers are free to assume any position the irregularities of the surface may require. The driver's seat *b'* is stayed to the axle *c* by a brace, *u*, and it is provided with a foot-rest, *v*. It will also be seen that the shoulders *a'* of the frame-joints allow sufficient lateral play for enabling the rollers to follow the inequalities of the ground, but prevent the frame from swinging too far. The seat-brace *u* will, in practice, also have an extensible joint to shift as the connecting-rods are shifted.

We do not abandon or dedicate to the public any patentable feature set forth herein and not hereinafter claimed, but reserve the right to claim the same, either in a reissue of any patent that may be granted upon this application, or in other applications for Letters Patent that we may make.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a grain-drill, the combination, with each pair of rolls, of a rod, *d*, connecting with the axle, and having two branches, *e e*, fitted at the ends with separable bearings which receive the outer ends of the roll-axle, as shown and described.

2. The frame-sections and roller-axles, connected by knuckle-joints, sustaining the load and the wear independently of the joint-pin, and having shoulders *a'*, that limit the lateral vibration, substantially as described.

3. The combination, with the seat-frame, of the axles *b*, sleeves *n*, and rule-joints *p*, having seats *o*, whereby said frame may be supported, as described.

4. The independent pairs of rollers *a*, connected to the drill-axle by an extensible and vibrating connecting-rod, *d*, made in two parts, one having a socket and the other being inserted in said socket and fastened with a pin, substantially as described.

5. A roller attachment for grain-drills, consisting of independent pairs of rollers connected to the axle of the grain-drill by independent connnecting-rods, said rods having an extensible and vibrating joint, and being connected to the axle by a T-head and eye-bolts, substantially as described.

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WM. F. BUZICK.

Witnesses:
W. H. H. THATCHER,
F. W. HASKELL.