

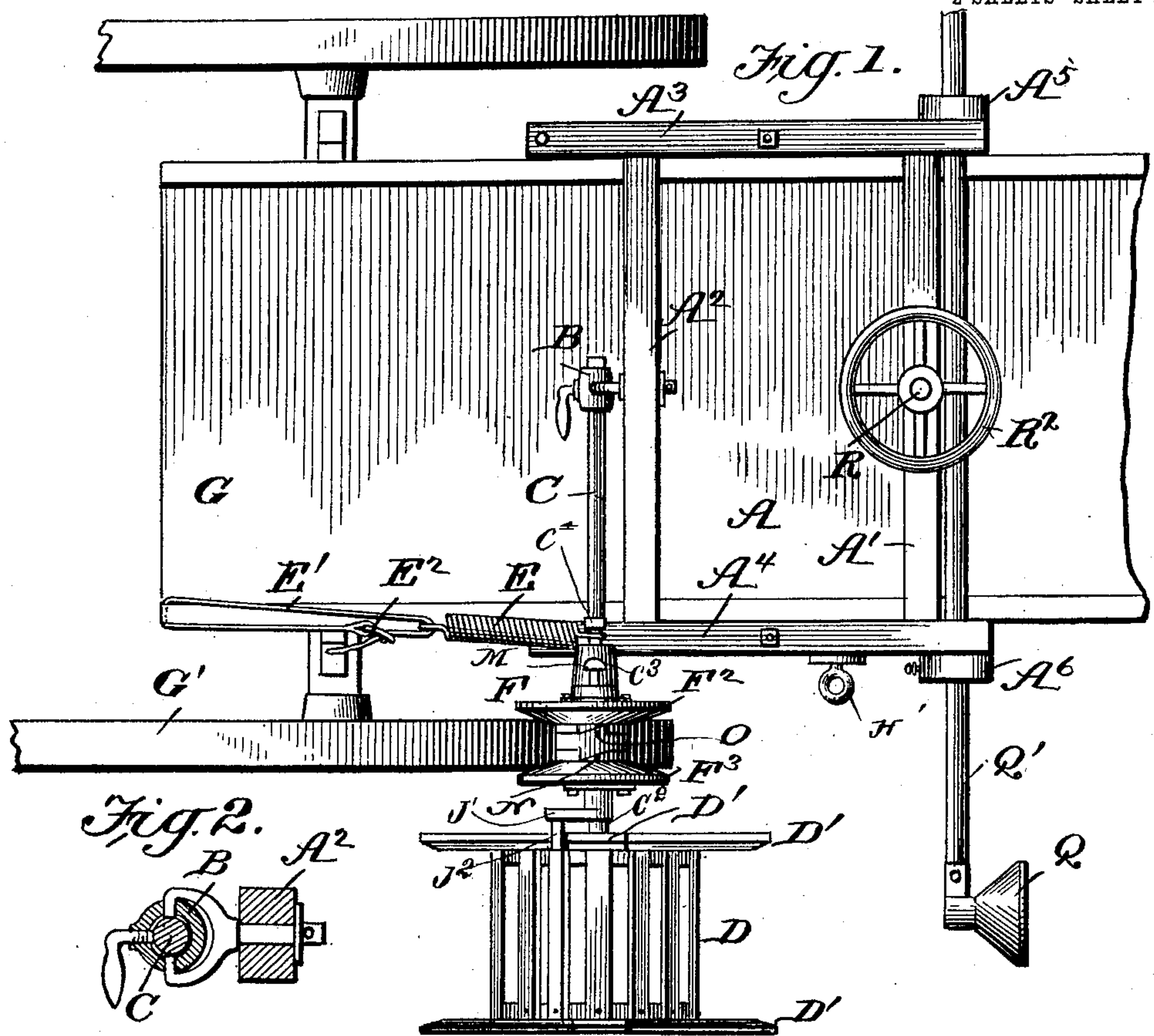
No. 827,598.


PATENTED JULY 31, 1906.

A. ASPER.  
WIRE REEL.

APPLICATION FILED APR. 27, 1904.

2 SHEETS—SHEET 1.



WITNESSES:   
*Jos. A. Ryan*  
*Perry B. Turpin*

INVENTOR  
*Albert Asper*  
BY *Munn & Co.*  
ATTORNEYS

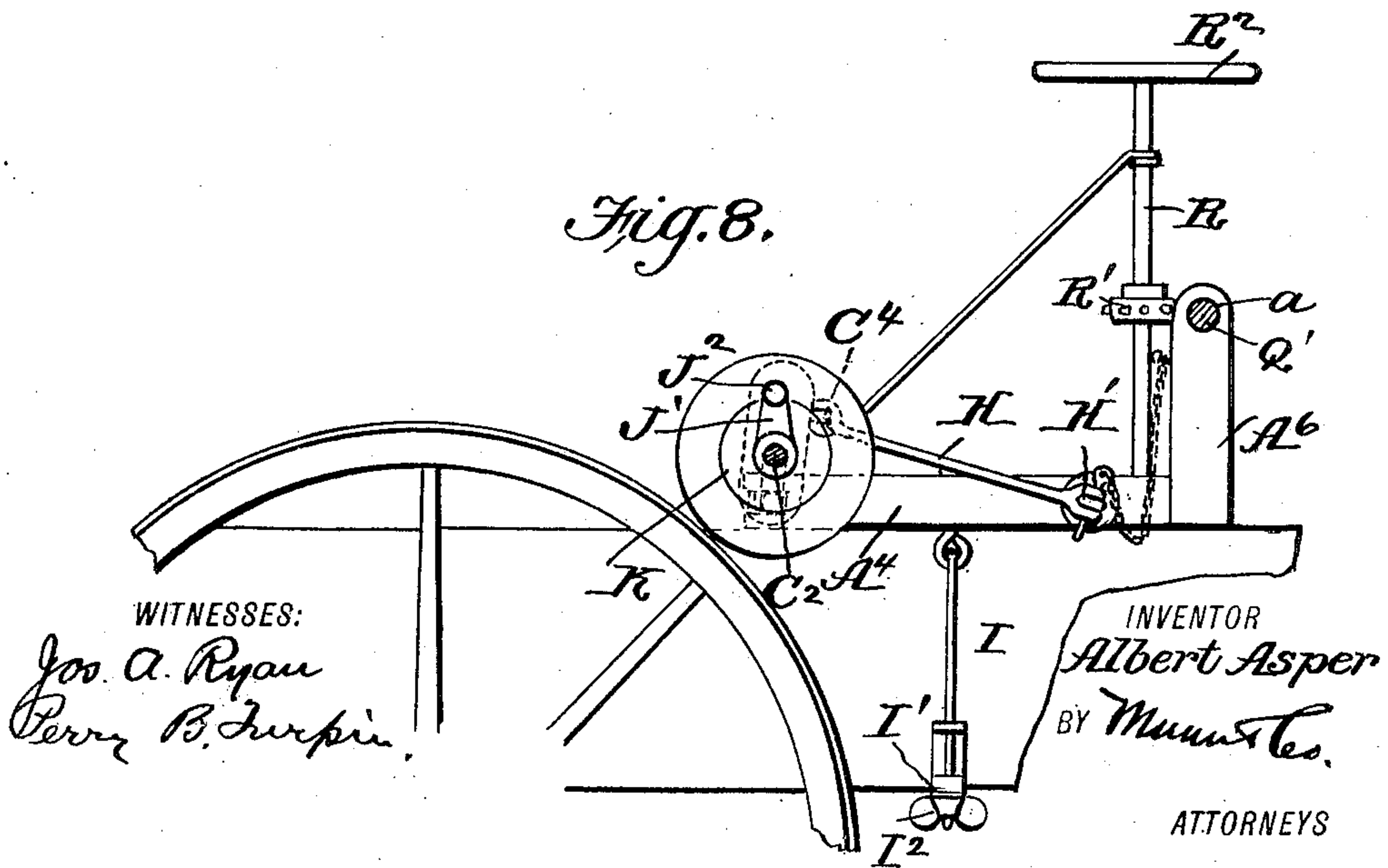
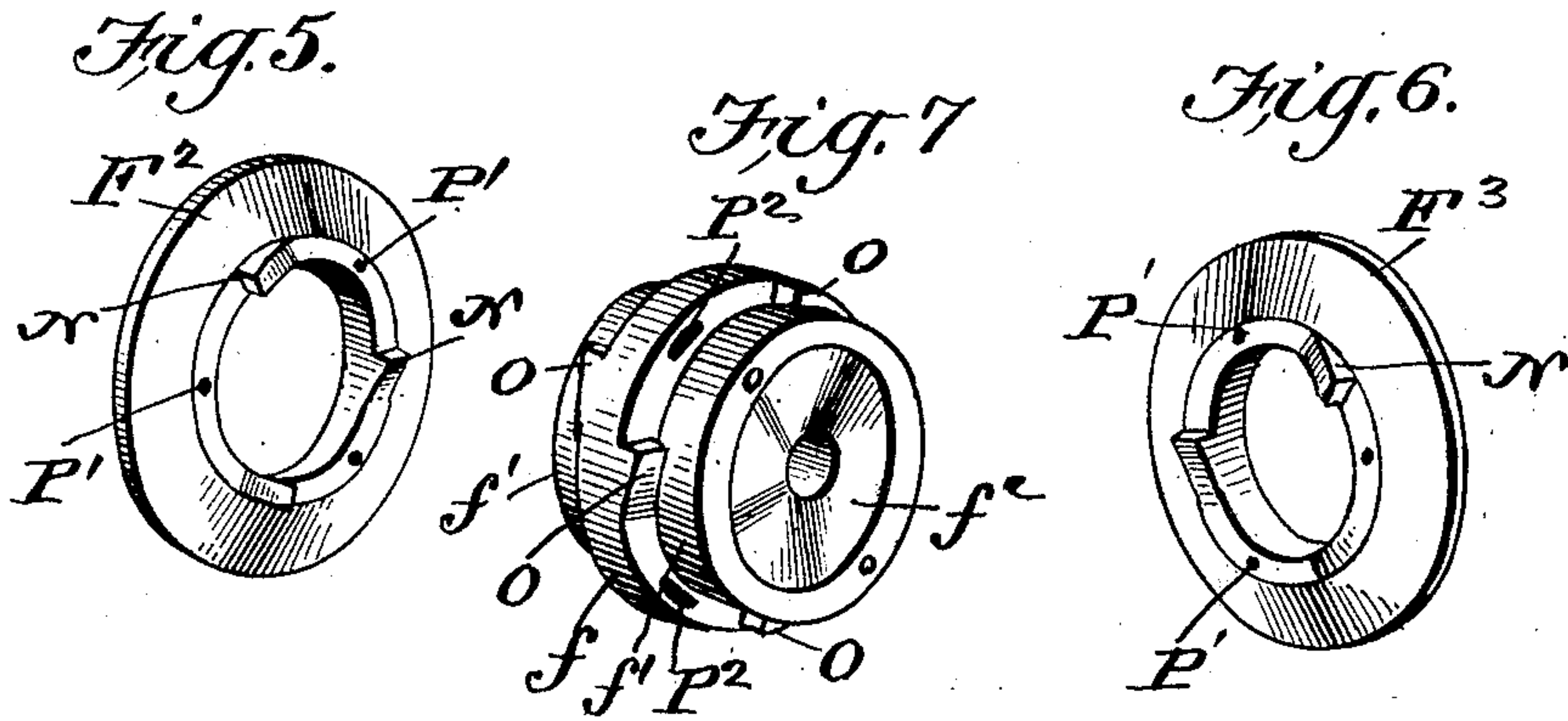
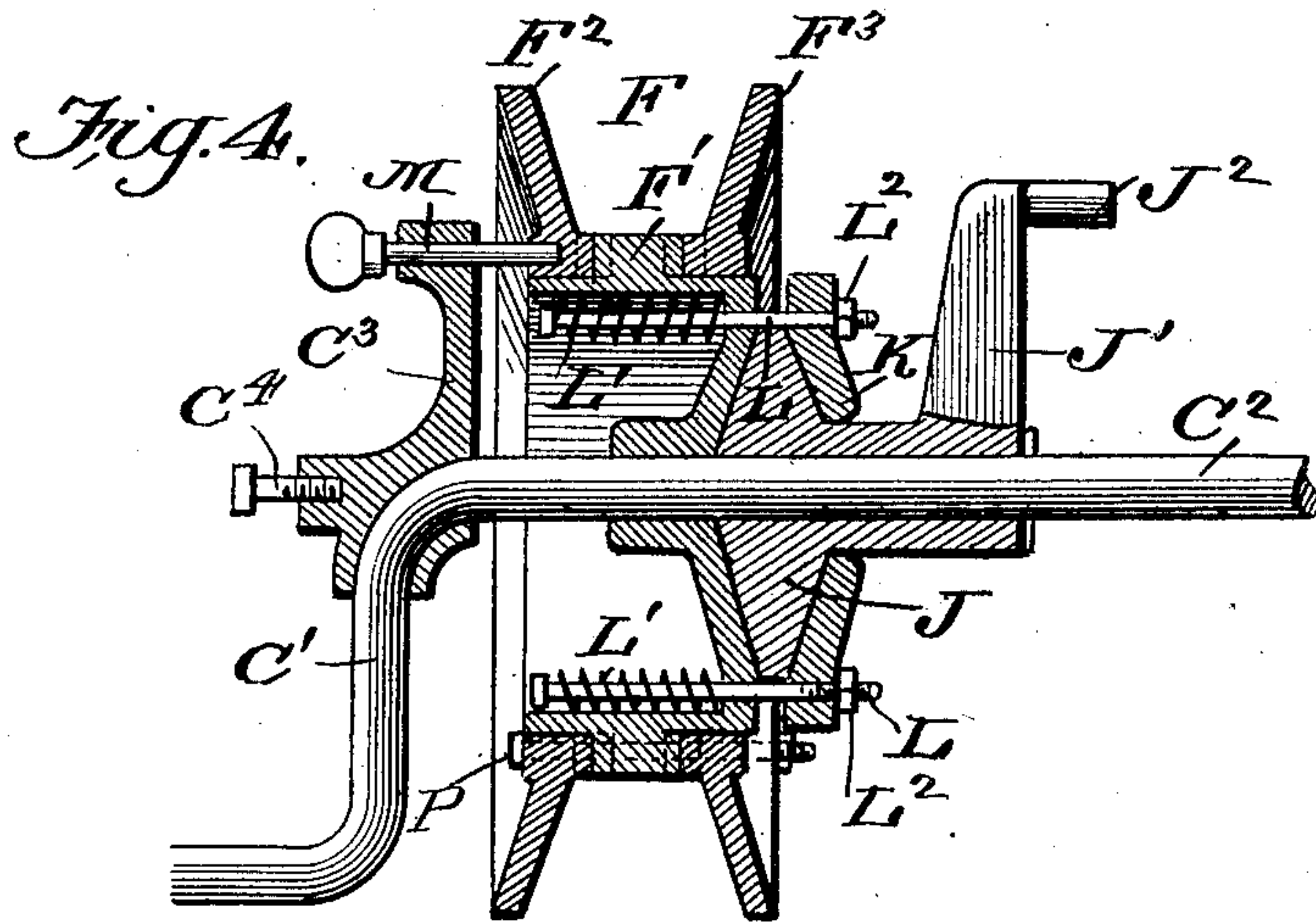
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# UNITED STATES PATENT OFFICE.

ALBERT ASPER, OF HUDSON, SOUTH DAKOTA.

## WIRE-REEL.

No. 827,598.

Specification of Letters Patent.

Patented July 31, 1906.

Application filed April 27, 1904. Serial No. 205,099.

*To all whom it may concern:*

Be it known that I, ALBERT ASPER, a citizen of the United States, residing at Hudson, in the county of Lincoln and State of South Dakota, have made certain new and useful Improvements in Wire-Reels, of which the following is a specification.

My invention is an improvement in wire-reels, being in the nature of an attachment for use on ordinary farm-wagons on which to reel up and unreel barbed or other wire used for farm-fencing or other purposes; and the invention consists in certain novel constructions and combinations of parts, as will be hereinafter described and claimed.

In the drawings, Figure 1 is a top plan view of my invention as in use. Fig. 2 is a detail view, partly in section, illustrating the swivel-bearing for the inner end of the main shaft. Fig. 3 is a detail perspective view showing the frame, means for clamping it to a wagon, and the spooling-gage. Fig. 4 is a sectional view of the friction-pulley and friction-clutch in connection with the crank of the main shaft. Figs. 5 and 6 are detail perspective views showing the inner sides of the opposite flanges of the friction-pulley. Fig. 7 is a detail perspective view of the intermediate or body portion of the friction-pulley, and Fig. 8 is a side elevation of the invention as in use.

By my invention I provide means for securing the reel in connection with an ordinary farm-wagon, so that the drive-pulley for turning the reel may be operated from one of the wheels of the wagon by frictional contact therewith. In securing the operating devices to the wagon I employ a frame A, having front and rear base-sills A' and A<sup>2</sup>, side bars A<sup>3</sup> and A<sup>4</sup>, and standards A<sup>5</sup> and A<sup>6</sup> at the front of the frame and provided at a with bearings or guides for the spooling-gage by which the wire is properly laid on the spool in the use of the invention. The frame A has its rear sill A<sup>2</sup> provided at its middle with a swivel-bearing B for one end of the main shaft C, which latter has a crank C', whose wrist C<sup>2</sup> carries the friction-pulley and the reel D for the wire. This reel D may be the ordinary spool on which the wire comes from the factory—such, for instance, as shown—or it may be of any other suitable construction for carrying the wire. As shown, the reel D has the arms D', any one of which may be engaged by the crank on

the friction-clutch in connection with the friction-pulley presently described.

The main shaft C is journaled at its inner end in the swivel-bearing B and near its outer end in a bearing a' (see Fig. 3) in the rear end of one or the other of the side bars A<sup>3</sup>, according as the reeling devices are adjusted for operation at the right or left side of the wagon, the swivel-bearing B and the cotter-pins a<sup>2</sup> or other suitable devices for detachably securing the main shaft in the bearings a' permitting the main shaft to be shifted from side to side of the wagon, as may be desired. A spring E is connected with the crank C', (it may be by means of a screw C<sup>4</sup> on a bracket C<sup>3</sup>,) and such spring is also connected with the wagon-body in rear of said crank C', so the spring may operate to press the pulley F into contact with the wheel G' of the wagon G, so the said wheel will operate to properly drive the friction-pulley. The bracket may be made in sections bolted together around the shaft or be otherwise fitted to the shaft, as may be desired. A strap E', having a buckle E<sup>2</sup>, may be employed for connecting the spring with the wagon, so such connection can be readily effected and so the spring can be adjusted to vary the tension of the spring E to cause the same to bear with more or less pressure against the wheel G of the vehicle. The crank C', it will be noticed, forms a swinging arm or carrier for the pulley F, and the spring serves as actuating means for swinging said arm to press the pulley yieldingly against the wheel G. When it is desired to secure the pulley clear of the wheel, so the pulley will not be driven—as, for instance, when wire is being reeled off the spool—I employ means for holding the swinging arm C' forward to such extent as to secure the pulley clear of the wheel G. This may be effected by means of the rod H, connected at C<sup>4</sup> or otherwise with the swinging arm and having its front end detachably connected at H' to the bar A<sup>4</sup> by means of a pin, as best shown in Fig. 8. In such adjustment of the parts the strap E' may be slackened or the arm may be held forward against the tension of the spring, as will be understood from Figs. 1 and 8 of the drawings.

In securing the frame A upon the wagon-body I may employ the construction shown in Figs. 3 and 8 and including the hanger-rods I, connected at their upper ends with



the side bars  $A^3$  and  $A^4$ , threaded at their lower ends to receive the nuts  $I'$  and carrying above said nuts the clamp-plates  $I^2$ , which extend beneath the wagon-body and may be pressed firmly into contact therewith by the nuts  $I'$ .

The pulley  $F$  comprises the body  $F'$  and the side flanges  $F^2$  and  $F^3$ . The body  $F'$  has the rim  $f'$ , the central outwardly-projecting rib  $f$  on said rim, and the side plate  $f^2$ , the latter being conical and tapering inwardly and forming the bearing for one side of the clutch-pulley  $J$ , the other side of said clutch-pulley being a disk  $K$ , tapered reversely to the plate  $f^2$  and held yieldingly in connection with the body of the friction-pulley by the bolts  $L$ , having actuating-springs  $L'$  and nuts  $L^2$  and which may be adjusted to increase or decrease the frictional pressure on the clutch-disk  $J$  in the use of the invention. Any suitable number of bolts  $L$  may be employed to secure the desired pressure upon the clutch-pulley in the use of the invention. The friction-clutch has a crank-arm  $J'$ , connected with the pulley  $J$  and arranged at  $J^2$  to engage with the reel or spool carrying the wire.

The pulley  $J$  of the friction-clutch is tapered to coincide with the tapered surfaces of the plate  $f^2$  and disk  $K$  and operates between the same, as best shown in Fig. 4 of the drawings.

In winding wire on the reel the friction-clutch aids in giving an even yielding tension to the wire in such manner as to avoid breaking the wire, as well as the winding of the wire too tightly on the reel or spool, and in unreeling wire from the spool the friction-spool  $F$  may be locked from turning by a pin  $M$ , connected with the bracket  $C^3$ , as will be understood from Fig. 4, and the tension of the springs on bolts  $L$  adjusted so as to permit the friction-clutch to control the unwinding movement of the reel or spool to prevent the latter from reeling off too freely.

In order to permit the adjustment of the friction-pulley  $F$  to the tires of different gages, I prefer to make said pulley adjustable and to such end make the flanges separate from the body of the pulley and provide on the flanges tapered lugs or wedges  $N$ , which cooperate with tapered lugs or wedges  $O$  on the sides of the rib  $f$  in securing the lateral adjustment or spreading and contracting of the flanges  $F^2$  and  $F^3$  by the turning of the body portion of the pulley relatively thereto, bolts  $P$  being provided for securing the flanges  $F^2$  and  $F^3$  to the body  $F'$ , said bolts passing through holes  $P'$  in the flanges  $F^2$  and  $F^3$  and through elongated slots  $P^2$  in the rib  $f$ . By turning the body portion  $F'$  relatively to the flanges the latter may be spread apart or contracted to suit the tire of the wheel  $G$  and may be secured in any desired adjustment by tightening the bolts  $P$ , as will be understood from the drawings. It will thus be noticed

that the body portion and the flanges are movable relatively in a circular direction, whereby to spread or contract the pulleys to suit wide or narrow wheel tires in order to adapt the invention to different vehicles.

In unwinding wire from the spool  $D$  the pin  $M$  can be adjusted, as shown in Fig. 4, to lock the pulley  $F$  and the swinging arm  $C'$  may be held in its forward position by the rod  $H$ , as shown in Fig. 8. When winding up, the pin  $M$  may be withdrawn to release the pulley  $F$  and the rod  $H$  released at  $H'$ , so the pulley  $F$  will engage the wagon-wheel and be driven as the wheel moves along.

The friction-clutch permits the beveled inner faces of the flanges  $F^2$   $F^3$  to spring in and out, so as to produce the desired friction with the wagon-wheel and avoid slipping and grinding upon the tire, and the means for holding the pulley out of engagement with the wheel-rim when desired prevents wear on the flanges  $F^2$  and  $F^3$ , as well as on the wheel, when it is not desired to positively drive the pulley  $F$ .

The spooling-gage includes a funnel-shaped guide  $Q$ , through which the wire passes to the reel  $D$ , a rod  $Q'$ , carrying the guide  $Q$  and movable longitudinally in the guides or bearings  $a$  and having a rack at  $Q$ , engaged by a pinion  $R'$  on a shaft  $R$ , having a hand-wheel  $R^2$ , by which the operator may turn it in order to set the guide  $Q$  back and forth in front of the spool or reel  $D$  to properly lay the wire on the spool in the use of the invention.

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

1. The improvement in wire-reels herein described, comprising a frame extending from side to side of a wagon-body and provided midway between its sides with a swivel-bearing for the inner end of the main shaft, clamping devices for securing said frame in connection with the wagon-body, the main shaft journaled at its inner end in the swivel-bearing and having the crank-arm and the wrist thereon, the spring acting upon said crank-arm to press the same toward the wagon-wheel, the friction-pulley carried by the wrist of said crank-arm, and having a body portion provided with a side plate having a friction-surface, the flanges adjustably connected with the body portion of the pulley whereby they may be set to suit a tire of a wagon-wheel, a plate opposing the friction-surface of the friction-pulley, spring-actuated devices connecting said plate and friction-surface, and the friction-clutch having a disk held between said plate and friction-surface, and a crank-arm in connection with said disk of the friction-clutch and adapted for engagement with a wire-spool, substantially as set forth.

2. A wire-reel attachment for a farm-wagon, comprising a detachable frame, a



swinging horizontal arm held rotatably in bearings and having a crank or upward bend exterior to the detachable frame, a spring attached to such crank and tending to draw the same laterally, a pulley and wire-reel mounted on the crank end of said frame, and means for locking them together, substantially as described.

3. In a wire-reel, a friction-pulley for engagement by the wagon-wheel, and comprising a body portion, flanges thereon, and means for adjustment of the width of the pulley to suit different gage tires of the wheels by the movement of the flange and body portion of the pulley relatively to each other in a circular direction, and means for holding said movable parts in different adjustments, substantially as set forth.

4. The combination in a wire-reeling mechanism, of the pulley having a body portion provided with the outwardly-projecting rib having tapered lugs on its opposite sides, and the flanges having tapered lugs operating in connection with those of the rib whereby the pulley may be adjusted by the movement of the flanges and body portion in a circular direction, and means for securing the pulley in any desired adjustment, substantially as set forth.

5. The combination in a wire-reeling mechanism, of the friction-pulley having at one side a friction-surface, a disk opposite said surface, and a friction-clutch having a head operating between said disk and surface, and a crank-arm in connection with said head for engagement with a wire-spool, and means for yieldingly pressing the disk toward the surface of the friction-pulley, whereby to press upon the head of the friction-clutch, substantially as set forth.

6. The combination with a wagon of a frame held thereon, a friction-pulley, a swinging carrier for said friction-pulley, means for holding said swinging carrier yieldingly in connection with the frame, a reel driven from the friction-pulley, a wire-guiding device, and means for moving the same back and forth over the reel, substantially as set forth.

7. The combination of the frame, hanger-rods connected with the frame and provided at their lower ends with the clamping-plates to bear beneath a wagon-body and with means for operating said clamping-plates, the swivel-bearing carried by said frame midway between its sides, the shaft journaled at its inner end in said swivel-bearing and provided with the crank-arm and with the wrist portion extending outwardly from the outer end of said crank-arm, bearings for the said shaft at the opposite sides of the frame, means for detachably holding the shaft in said bearings, the spring acting upon the

crank-arm, the friction-pulley on the wrist of said crank-arm, means for locking the friction-pulley from turning on said wrist, and the friction-clutch in connection with said pulley and provided with means for engagement with a wire-spool, substantially as set forth.

8. The combination of the main shaft having a crank-arm and a wrist-shaft at the outer end of the crank-arm, a pulley on said wrist-shaft, and means for locking the pulley from turning on the shaft, and a friction-clutch in connection with said pulley, substantially as set forth.

9. A wire-reel, having a friction-pulley to engage with a wheel-rim, a friction-clutch in connection with said pulley whereby to connect the same with a wire-spool, and means whereby the friction-pulley may be held from turning, whereby the pulley may be utilized to transmit yieldingly through the friction-clutch, movement to the wire-spool, or said pulley may be locked from turning to operate in connection with the friction-clutch as a brake upon the wire-spool in unwinding the latter, substantially as set forth.

10. The combination with the frame, and a swivel-bearing midway between the sides thereof, of the shaft journaled at its inner end in said bearing and adjustable from side to side of the frame, and reeling devices carried by said shaft and adjustable therewith from side to side of the frame, substantially as set forth.

11. The combination in an apparatus substantially as described, of the frame to rest upon a wagon-body, hanger-rods at the opposite sides of said frame and provided with clamping devices to engage beneath the wagon-body, bearings at the opposite sides of said frame for the main shaft, a swivel-bearing midway between the sides of the frame, the main shaft journaled in said swivel-bearing and held detachably in one of the side bearings of the frame and reeling devices carried by said main shaft, substantially as set forth.

12. The combination of the frame, bearings at the sides of the frame, and a bearing midway between the sides of the frame, the main shaft, journaled in said intermediate bearing and in one of the side bearings and having a crank-arm and reeling devices carried thereby, and including a pulley adapted to bear frictionally against a wagon-wheel, and a spring acting upon the crank-arm to press the friction-pulley into contact with its drive-wheel, substantially as set forth.

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Witnesses:

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