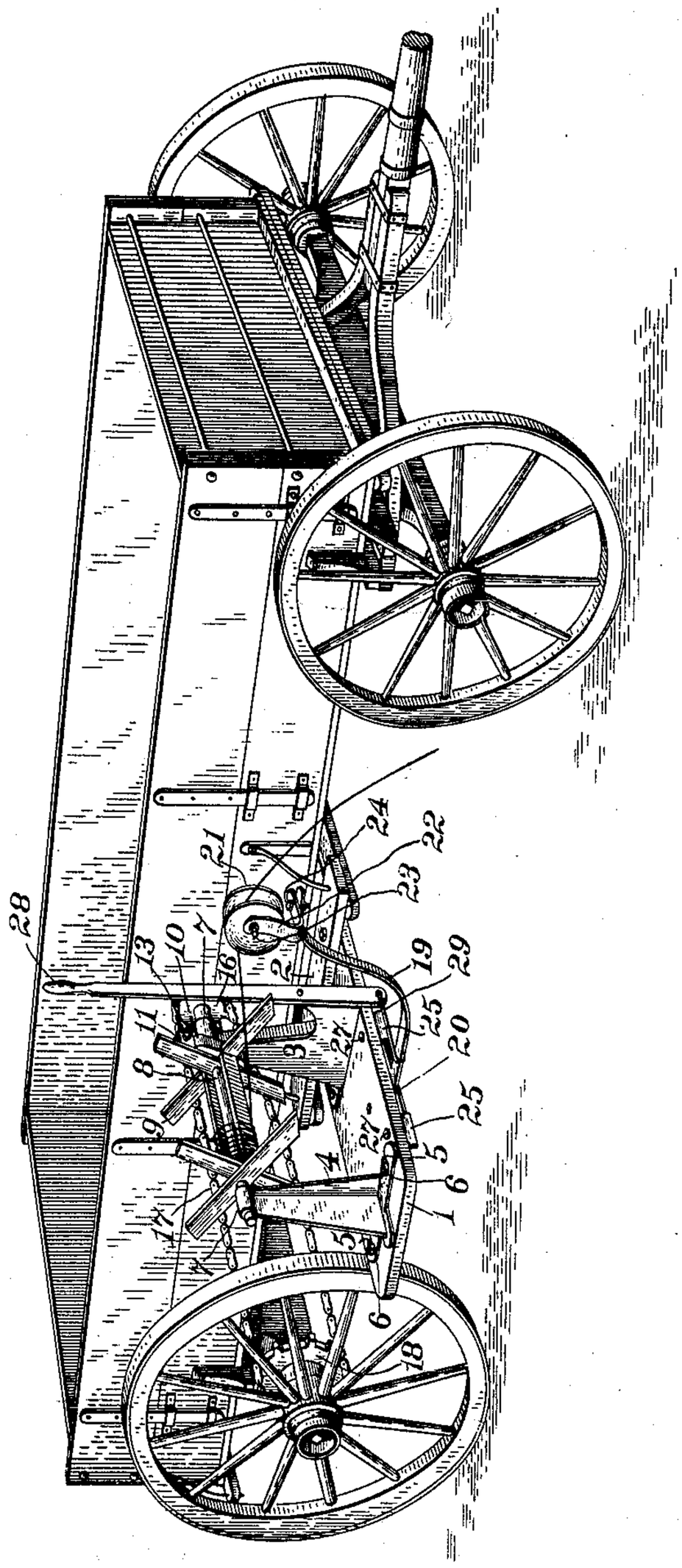
(No Model.) 2 Sheets—Sheet 1.

E. L. SHOTWELL & J. BRIMS.

WIRE REEL.

No. 603,796. Patented May 10, 1898.

Fig. 1.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

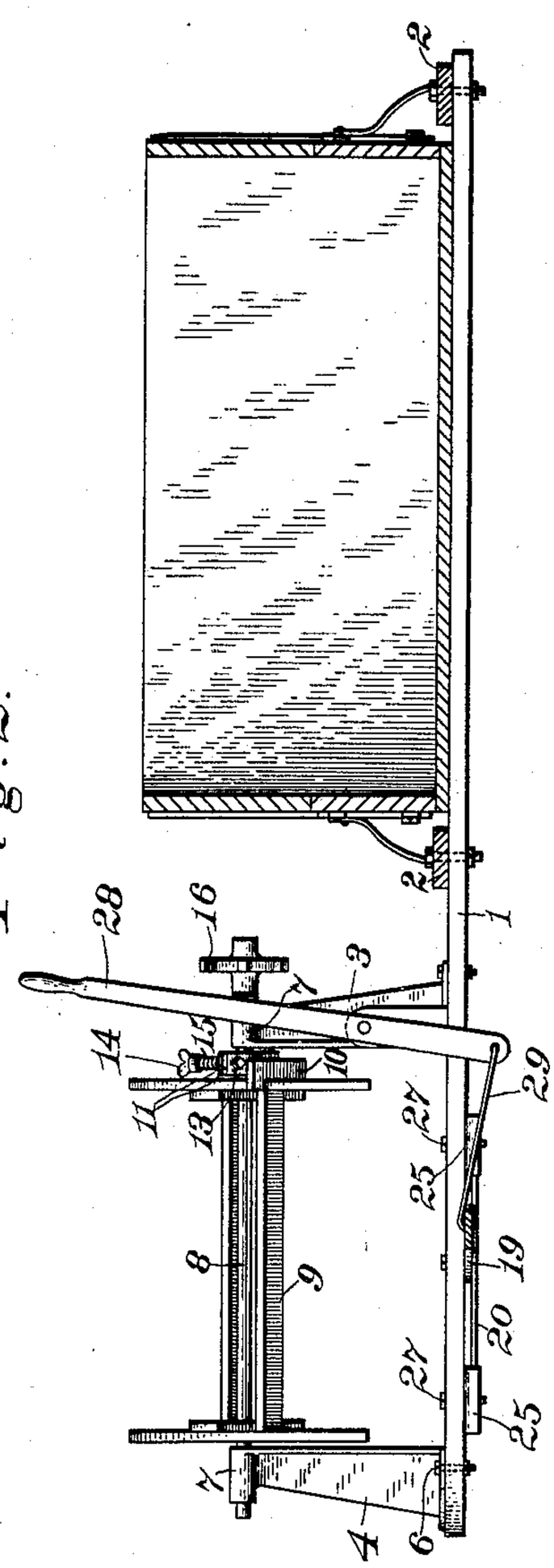


Fig. 4.

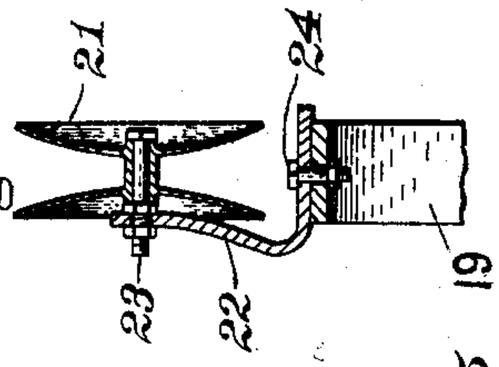


Fig. 5.

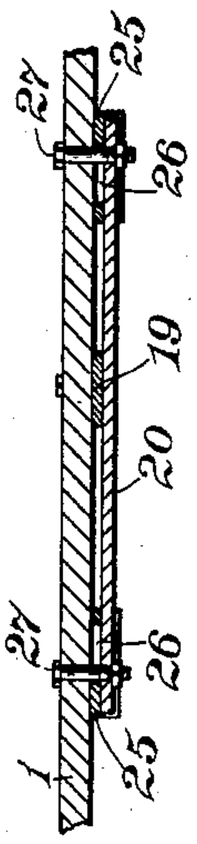
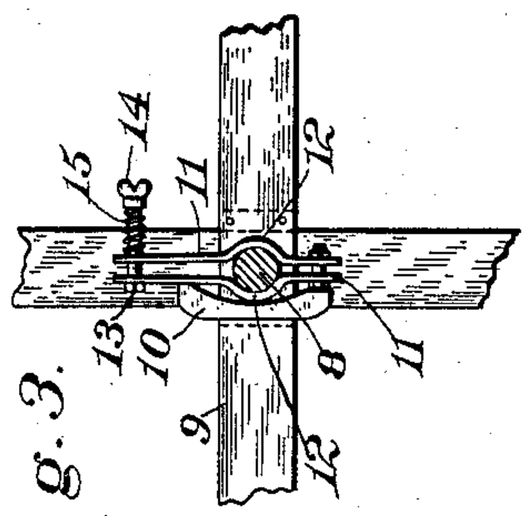


Fig. 3.



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UNITED STATES PATENT OFFICE.

ELI L. SHOTWELL AND JAMES BRIMS, OF DAVID CITY, NEBRASKA.

WIRE-REEL.

SPECIFICATION forming part of Letters Patent No. 603,796, dated May 10, 1898.

Application filed May 17, 1897. Serial No. 636,979. (No model.)

To all whom it may concern:

Be it known that we, ELI L. SHOTWELL and JAMES BRIMS, citizens of the United States, residing at David City, in the county of Butler and State of Nebraska, have invented a new and useful Wire-Reel, of which the following is a specification.

Our invention relates to wire-reels particularly adapted for handling barbed wire, such as that used for wire fences and in connection with check-row planters; and the object in view is to provide a simple, inexpensive, and efficient reeling apparatus adapted to be carried by a vehicle, such as an ordinary farm-wagon, and capable of distributing wire from the spool as it is shipped from the factory and also for collecting or reeling old wire after the period of its use has expired; to provide means for guiding wire to the spool and distributing it evenly over the surface thereof, irrespective of the angle at which the wire approaches the reel; to provide simple and efficient means whereby spools may be interchanged, thus adapting the machine for unreeling from a factory-spool, and, furthermore, to provide a simple and efficient tension device whereby the tension at which the wire is reeled upon a spool or at which it is stretched when it is unreeled may be regulated to suit the requirements and conditions of use.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a perspective view of a reeling apparatus constructed in accordance with our invention applied in the operative position to a vehicle. Fig. 2 is a transverse section of the same, showing the means whereby it is attached to the wagon-body. Fig. 3 is a longitudinal section in the plane of the tension device. Fig. 4 is a detail sectional view of the guide-pulley. Fig. 5 is a detail sectional view of a portion of the base or support to show the guide for the pivotal supporting-arm and the adjustable stops at the ends of said guide.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates a support or base, which preferably consists of a plank adapted to be secured to the body of a vehicle, preferably to the footboards 2 thereof, by means of bolts or equivalent devices, and supported by this base are standards 3 and 4, the latter of which is provided in its foot or horizontal portion with slots 5, parallel with the length of the base and engaged by bolts 6, whereby the standard may be removed from the base for a purpose hereinafter explained.

The standards are provided with alined bearings 7, in which is mounted a spool-spindle 8, adapted to receive a spool 9 of the ordinary construction or such as those usually employed in factories for reeling wire. The spool is loosely mounted upon the spindle and is adapted to be removed therefrom when the removable standard 4 is detached from the base, thus providing for replacing the spools as their contents are used or as they become filled, according to whether the device is operating to collect or distribute wire.

Carried by one arm of the reel is a projection or block 10, adapted to be engaged by a stop on the spindle, whereby rotary motion of the spindle may be imparted to the spool. In the construction illustrated this stop consists of a tension-brake having coöperating members 11, which are bolted together at one end and are provided with registering concaved faces 12 to bear frictionally against the surface of the spindle. The opposite extremities of these brake or clutch members are connected by a bolt 13, provided with a thumb-nut 14 and a tension-spring 15, interposed between the thumb-nut and the contiguous member. It is obvious that by tightening the thumb-nut the tension of the spring may be increased, and hence frictional contact of the clutch-faces upon the spindle may be correspondingly increased to offer the desired resistance to the rotation of the spool independently of the spindle.

The means which we prefer for imparting rotary motion to the spindle include a sprocket-pinion 16 on one end of the spindle contiguous to the standard 3 and a chain 17 traversing said pinion, and a sprocket-wheel 18, which is secured to one of the rear wheels of the vehicle, the relative size of the sprocket-wheels being such that the speed of rotation of the spindle is multiplied and is greater or

is adapted to take up wire more quickly than the vehicle is moving, thus maintaining the spool at all times under tension regulated by the friction brake or clutch above described.

In connection with the above-described mechanism, which, as above indicated, is adapted for either reeling or unreeling wire, we employ guiding devices consisting of a spring-arm 19, preferably of spring metal or yielding material pivotally mounted upon the under side of the base and extending through a limiting-guide 20, also secured to the under surface of the base, and a guide-pulley 21, supported by the extremity of said arm. In the construction illustrated this guide-pulley is mounted upon a pulley-frame 22 by means of a spindle 23, and the pulley-frame is swiveled, by means of a pivot-bolt 24, upon the extremity of the arm 19.

The ends of the guide 20 are closed by adjustable stops 25, provided with slots 26, engaged by the bolts 27, by which the extremities of the guide are secured to the base. By loosening said bolts the stop-blocks may be adjusted longitudinally of the guide to vary the extent of movement of the pivotal arm 19 to suit the length of the spool upon which the wire is being reeled. The movement of the pulley-carrying arm is adapted to be accomplished manually, as by means of a hand-lever 28, mounted upon an extension of the standard 3 and connected with the arm 19 by means of a link 29.

The swiveled mounting of the guide-pulley provides for the efficient operation of the reeling apparatus, even when the vehicle upon which it is carried is driven at a distance of ten or twelve feet from the line of the wire which is being collected, the swiveled frame turning to suit the direction in which the wire approaches the spool. Furthermore, the construction of the parts is such that a wire provided with a plurality of splices and uneven portions can be readily collected and distributed properly upon the spool.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described our invention, what we claim is—

1. In a wire reeling and distributing apparatus, the combination with a revoluble spool-spindle, and means for operating the same, of a radially-armed stop revolubly fitted upon the spindle and having adjustable clutch-faces for frictionally engaging the surface of the spindle, adjusting devices for the clutch-faces, and a spool removably and revolubly fitted upon the spindle and provided with a terminal projection extending in a direction parallel with the spindle and engaging the armed stop exteriorly, substantially as specified.

2. In a wire-reeling apparatus, the combination with a spool and means for imparting rotary motion thereto, of guiding devices consisting of a pivotal arm of elastic or yielding construction adapted at its free end for yielding movement in a plane perpendicular to the axis of the spool, and a guide-pulley carried by the free end of said arm and adapted to be traversed by a wire approaching the spool, whereby excessive strain upon the wire causes movement of the guide-pulley in a plane transverse to the axis of the spool, substantially as specified.

3. In a wire-reeling apparatus, the combination with a spool and means for imparting rotary motion thereto, of guiding devices having a movable arm constructed to yield in a plane perpendicular to the axis of the spool, a guide-pulley, and a swiveled frame 22 carried by the extremity of said arm and supporting the pulley for yielding movement, substantially as specified.

4. In a wire-reeling apparatus, the combination with a base, fixed and movable standards mounted upon the base and supporting a spool-spindle, means for securing the movable standard at the desired adjustment, to expose the desired length of spool-spindle, and a spool removably fitted upon the spindle, of guiding devices including a pivotal yielding arm mounted upon the base, a guide-pulley supported by said arm, and adjustable stops arranged in the path of said arm, to limit its swinging movement to correspond with the length of the spool supported by the spindle, substantially as specified.

5. In a wire-reeling apparatus, the combination with a base, fixed and movable standards mounted upon the base and supporting a spool-spindle, means for securing the movable standard at the desired adjustment, to expose the desired length of spool-spindle, and a spool removably fitted upon the spindle, of guiding devices, including a pivotal yielding arm supporting a swiveled guide-pulley, a guide in which said arm operates contiguous to its pivot-point, stop-blocks arranged in said guide in the path of the arm and provided with longitudinal slots, bolts engaging said slots and adapted when tightened to secure the blocks at the desired adjustment, and thereby limit the swinging movement of the arm to suit the length of the spool, and means, including a hand-lever, pivotally mounted upon the fixed standard, for communicating oscillatory movement to said arm, substantially as specified.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

ELI L. SHOTWELL.
JAMES BRIMS.

Witnesses:
W. I. RUNYON,
E. S. RUNYON.