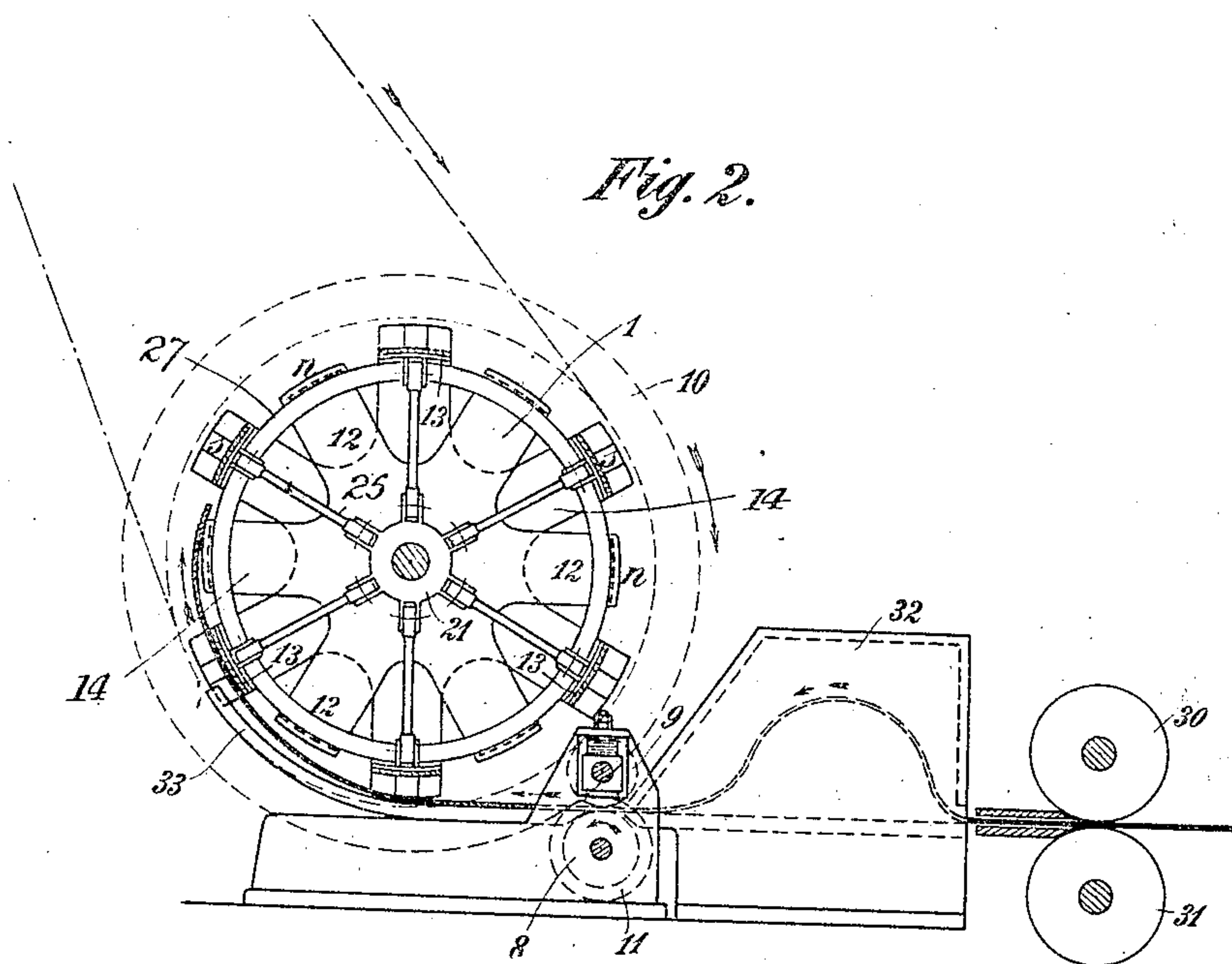
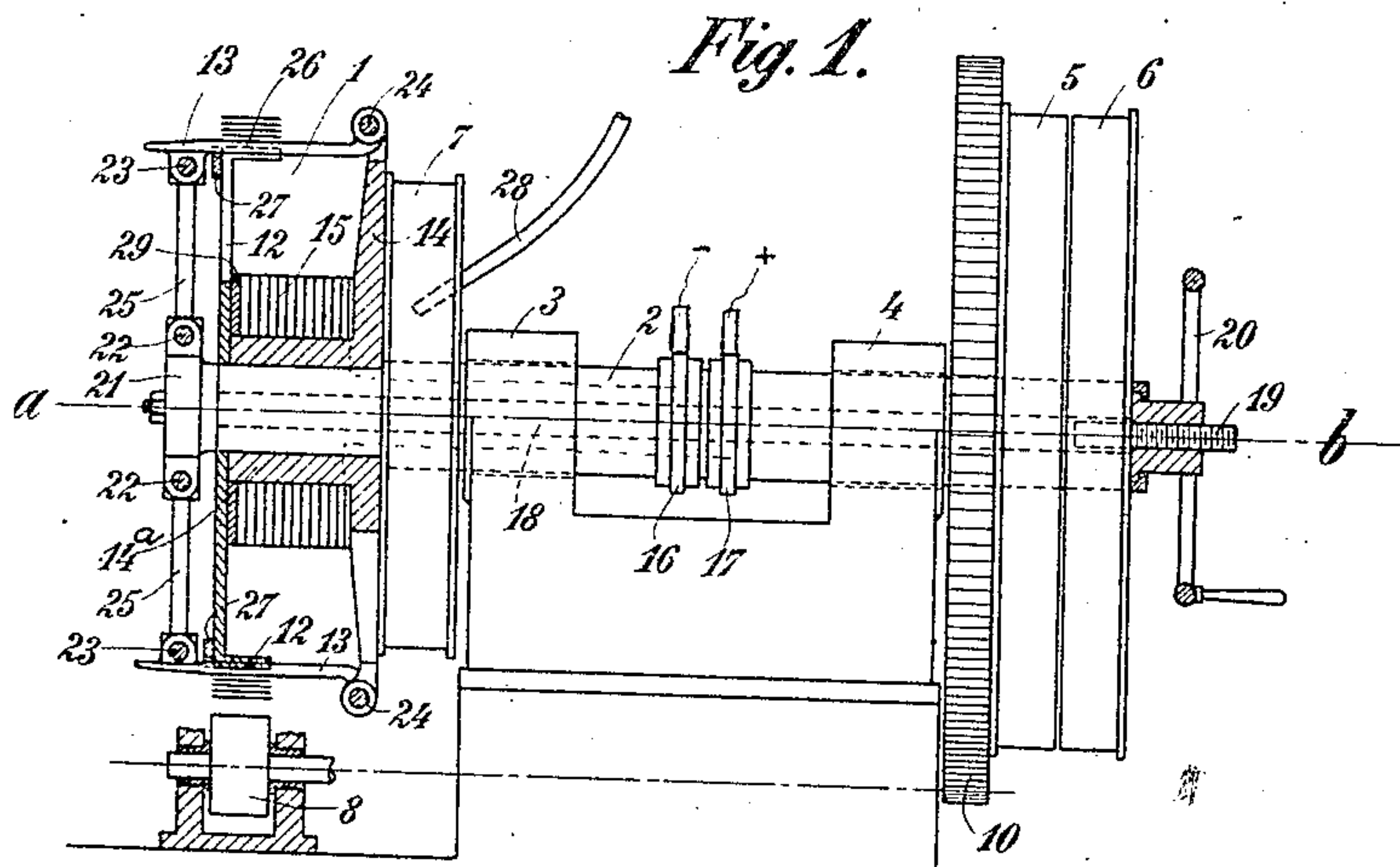


No. 824,292.

PATENTED JUNE 26, 1906.

F. GERHARD.
REEL FOR STRAP IRON, &c.
APPLICATION FILED SEPT. 27, 1905.



Witnesses
E. Harrener
B. C. Rust

Inventor
F. Gerhard
By
Law Firm
allys

UNITED STATES PATENT OFFICE.

FERDINAND GERHARD, OF VÖLKLINGEN-ON-THE-SAAR, GERMANY,
ASSIGNOR TO ANTON SCHÖPF, OF VÖLKLINGEN-ON-THE-SAAR,
PRUSSIA, GERMANY.

REEL FOR STRAP-IRON, &c.

No. 824,292.

Specification of Letters Patent.

Patented June 26, 1906.

Application filed September 27, 1905. Serial No. 280,377.

To all whom it may concern:

Be it known that I, FERDINAND GERHARD, engineer, a subject of the King of Prussia, residing in the city of Völklingen-on-the Saar, Poststrasse 45, Germany, have invented a certain new and useful Improvement in Reels for Strap-Iron and the Like, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts in the specification.

The present invention relates to an automatic reel for band or strap iron. In the reels heretofore used in connection with rolling-mills it is necessary to first fix the strap-iron in a somewhat complicated manner on the reel, whereupon the reel can be put in operation. In this way time is lost, and therefore it has not been possible until now to wind up the strap-iron coming from the rolling-mill directly and without intermediate operation, because the strap-iron would get out of order before the starting of the reel. Therefore the length of the band and the production is restricted.

The essential feature of the reel according to the present invention lies in the fact that the reel-wheel 1 is rendered magnetic on its circumference. Therefore the front end of the strap-iron fed to the circumference of the rotating wheel 1 is attracted, and in this way a winding up is made possible without a stopping of the reel being required for the purpose of attaching the end of the strap-iron. In the accompanying drawings, Figure 1 is a side elevation, and Fig. 2 a front elevation of the reel.

The reel or winding wheel 1 is mounted upon the shaft 2, supported by bearings 3 and 4. Upon the shaft 2 are further arranged a fixed belt-wheel 5 and a loose belt-wheel 6 for the purpose of enabling the coupling or uncoupling of the reel with a driving-shaft. (Not shown.) A brake or friction wheel 7 is also mounted upon the shaft 2 in order to enable the stopping of the reel as quickly as possible. For the purpose of simplicity the friction-band with lever is omitted in the drawings. In front of the wheel 1 a known device for feeding the strap-iron, Fig. 2, and consisting of the rolls 8 and 9 is arranged. The roll 8 is driven by the shaft 2 by means of gear-wheels 10 and 11. The roll 9 is pressed, by means of a spring,

against the roll 8. The reel-wheel 1 is constructed as a unipolar magnet-wheel with two arm systems 12 and 14. The reel-wheel also comprises a series of adjustable supports for the material to be wound on the wheel. As shown, the supports 13 are pivotally mounted on the arm system 14, and they are provided with means whereby their free ends may be adjusted in a radial direction, so as to vary the circumference of a circle including the supports.

Around the nave 14^a a coil 15 is laid, which receives an electric current from the slip-rings 16 and 17, being suitably connected with said rings, as indicated in dotted lines in Fig. 1. By this means the two arm systems 12 and 14 become magnetic in an opposite sense, so that the reel-wheel on its circumference shows alternately north and south poles *n s n s*. The shaft 2 is bored through. Through this boring a rod 18 is led, which carries at the belt-wheel side threads 19, with a hand-wheel 20, by means of which the rod 18 can be moved in axial direction. At the reel-wheel side the rod 18 carries a disk 21, with pivots 22. The supports 13 have pivots 23 and 24. The pivots 22 and 23 are connected by links 25 of non-magnetic material. If by means of the hand-wheel 20 the rod 18 is moved in the direction *a b*, the supports 13 are rocked around the pivots 24, whereby the radial distance of the supports 13 from the shaft is varied, as indicated at 26, where the strap-iron is coiled. In the position shown in Fig. 1 the supports 13 are adjusted at a radial distance somewhat greater than that of the ends of the arms 12. The strap-iron is wound up in warm condition and will, owing to its beginning to cool off, contract close to the support 13 of the reel-wheel. By means of the hand-wheel 20 the bundle of the strap-iron may be loosened. 27 is a ring of non-magnetic material with radial slots, which serve as guides for the movable parts of the supports 13.

By means of pipe 28 cooling-water can be supplied for cooling the coil 15.

29 is an interposed heat-proof medium.

The strap-iron delivered by the finishing-rolls 30 and 31 is brought into the rolls 8 and 9 by means of a box-shaped feeding-groove 32 with two high side walls. The strap-iron is engaged by the rolls 8 and 9 and is, by means of the curved piece 33, led to the cir-

cumference of the rotating reel-wheel 1. Owing to the magnetism of the arms, the front end of the strap-iron is attracted and held fast, and in this manner the winding up is automatically effected. When the entire band is wound up, the reel is uncoupled and brought to rest by means of the brake. By turning the hand-wheel, the bundle on the reel-wheel is then loosened and may be taken off. Thereafter the hand-wheel is turned back and the reel is again set in motion and may be immediately used for further winding up. The differences in speed of the band during the reeling are equalized in the box-shaped groove 32.

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

1. In a reel for band or strap iron and the like, the combination with the winding-wheel, of means for magnetizing the wheel whereby when the wheel is magnetized the band is attracted and held while being wound upon the wheel, substantially as described.

2. In a machine of the character described, a winding-wheel comprising two arm systems, and means for magnetizing the arm systems, the arms of said systems being arranged alternately and oppositely magnetized, substantially as described.

3. In a machine of the character described, a winding-wheel comprising two arm sys-

tems, adjustable supports mounted on the wheel, and means for magnetizing the wheel, the arms of said systems being arranged alternately and oppositely magnetized, substantially as described.

4. In a machine of the character described, the combination with a shaft, of a winding-wheel of magnetic material mounted on the shaft, means for magnetizing the wheel a series of adjustable supports mounted on the wheel, and means for adjusting the radial distance of the supports with relation to the shaft to permit the material wound thereon to be removed, substantially as described.

5. In a machine of the character described, the combination with a hollow shaft, of a winding-wheel mounted thereon comprising two oppositely-magnetized arm systems, the arms of said systems being alternately arranged, a series of supports mounted on one of the arm systems, a rod extending through the shaft, connections between the rod and adjustable supports, and means for adjusting the rod in the shaft, substantially as described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

FERDINAND GERHARD.

Witnesses:

JEAN GRUND,

CARL GRUND.