

(No Model.)

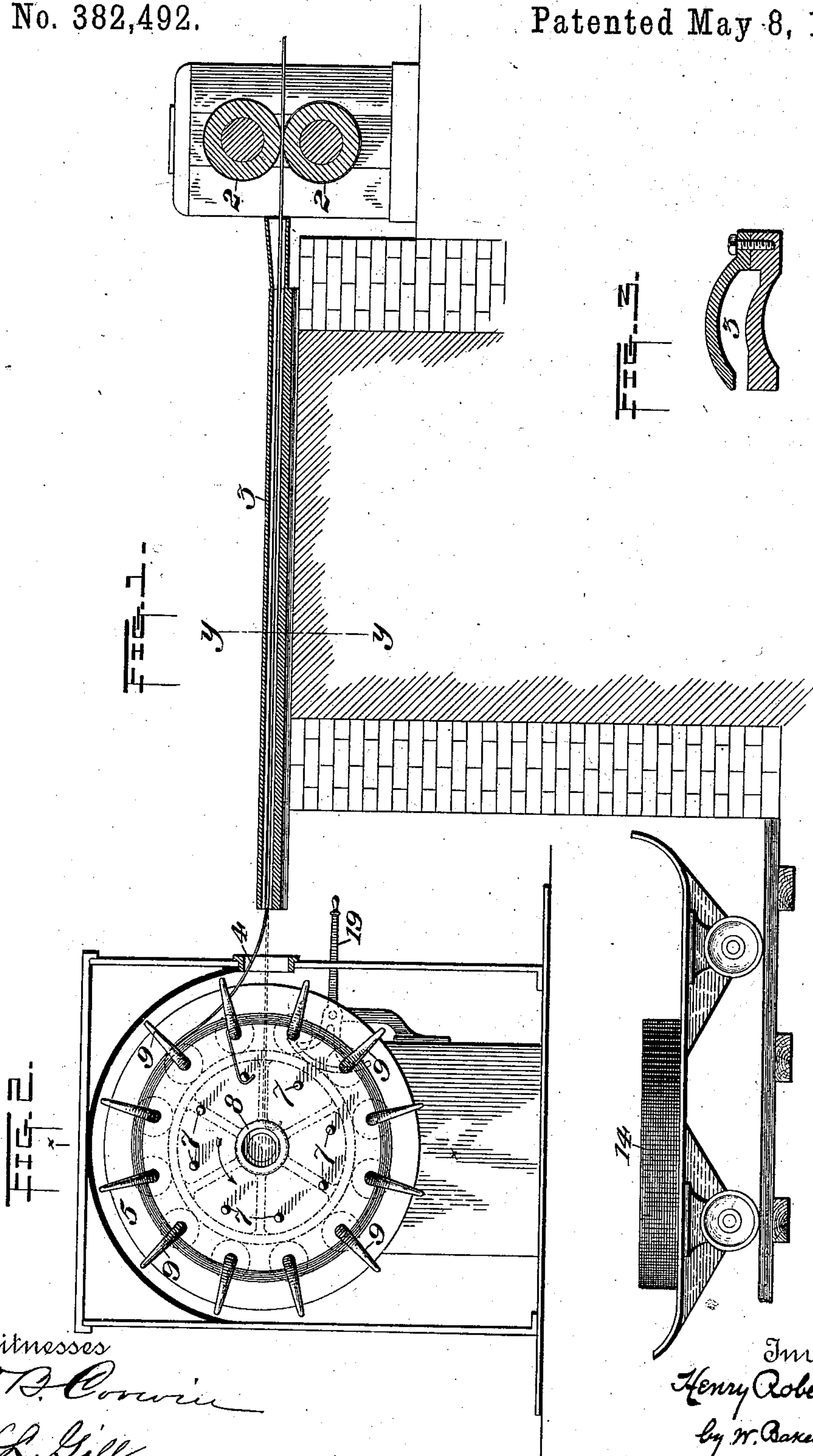
2 Sheets—Sheet 1.

H. ROBERTS.

REEL FOR WIRE ROD MILLS.

No. 382,492.

Patented May 8, 1888.



Witnesses  
*W. D. Corwin*  
*A. L. Gill*

Inventor.  
*Henry Roberts.*  
by *W. B. Russell & Co.*  
Attorneys.

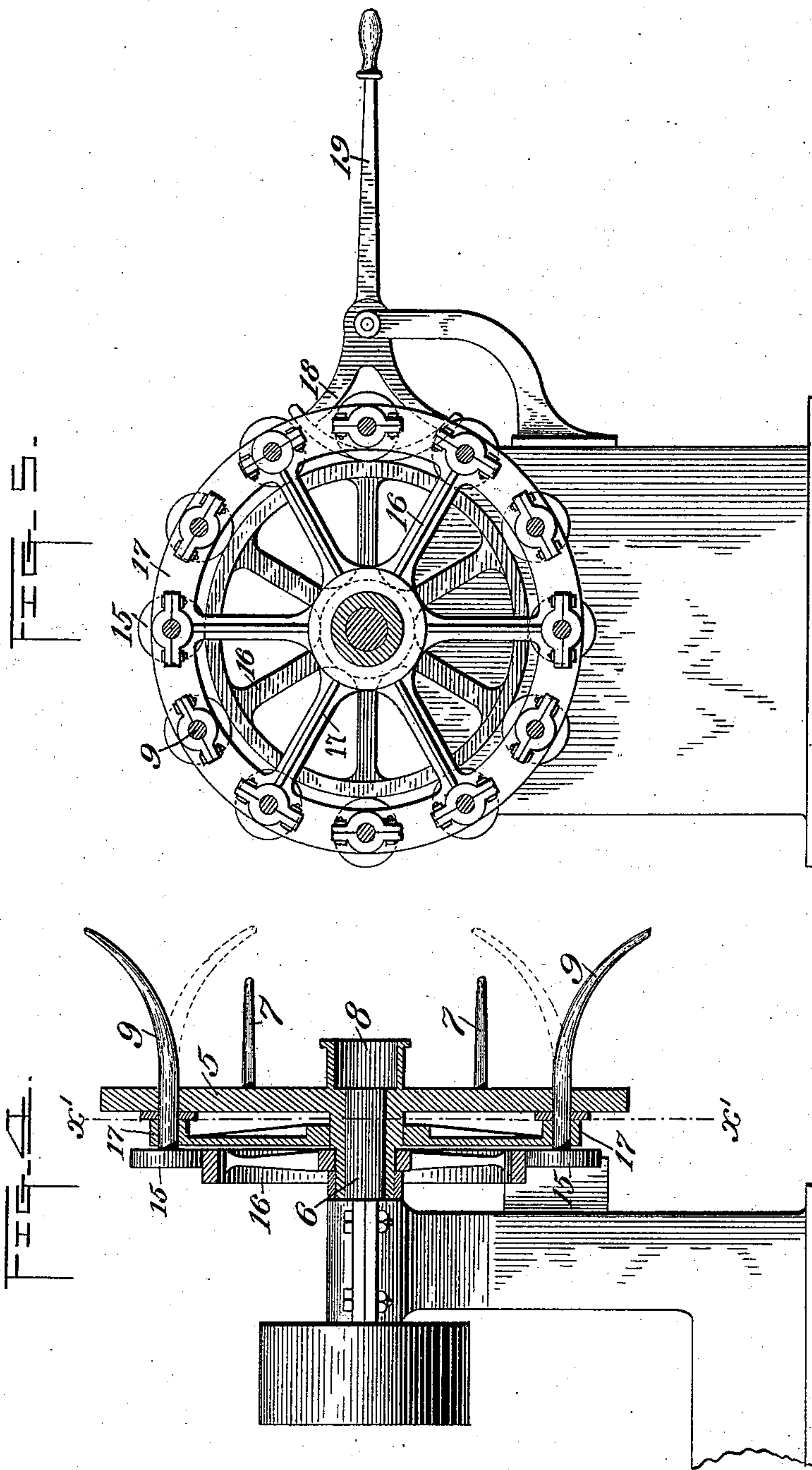
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Attorneys.



# UNITED STATES PATENT OFFICE.

HENRY ROBERTS, OF PITTSBURG, PENNSYLVANIA.

## REEL FOR WIRE-ROD MILLS.

SPECIFICATION forming part of Letters Patent No. 382,492, dated May 8, 1888.

Application filed January 7, 1888. Serial No. 260,063. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY ROBERTS, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Reels for Wire-Rod Mills; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention is designed to provide for wire-rod mills a reel which shall be capable of receiving and engaging the end of the wire rod as it is delivered from the rolls and of collapsing to permit the easy or automatic removal of the wire coil after the wire has been wound thereon.

The invention is shown in the accompanying drawings, wherein—

Figure 1 is a vertical sectional view through the floor of a wire-rod mill, showing the rolls and the guide-trough. Fig. 2 is a side view of my improved reel, shown in connection with the rolls and the guide, the reel being situated at the delivery end of the guide to receive the rod automatically. Fig. 3 is a vertical cross-section on the line  $y y$  of Fig. 1, showing the preferred form of the guide which I employ. Fig. 4 is a vertical cross-section on the line  $x x$  of Fig. 2. Fig. 5 is a vertical cross-section on the line  $x' x'$  of Fig. 4.

Like symbols of reference indicate like parts in each.

Referring now to Figs. 1 and 2 of the drawings, 2 are the final rolls of the mill from which the wire rod is delivered, moving in the direction of the arrow, and 3 is a guide-trough whose flaring mouth is set opposite to the delivery-pass of the rolls, and which extends thence in a straight line to the mouth 4 of the reel, so that as the end of the wire rod emerges from the rolls it is guided by the trough 3 into the reel without the necessity of any handling or direction by the workmen. The side of the guide-trough 3 is made open or slotted, as shown in Fig. 3, so that if there should be an overfeed of the wire from the rolls faster than it can be taken up by the reel, or if the wire rod should for any cause be obstructed in its passage through the guide, it may escape freely from the side thereof.

The reel consists of a back plate or frame, 5, which is fixed to a rotary shaft journaled in a line at right angles to the line of the wire rod.

At the center of the plate 5 is a cylindrical boss or projection, 8, which extends at right angles from the plate, and arranged in a circle on the plate around the boss 8 is a series of fixed projecting arms, 7. At or near the rim of the plate 5 are the operative arms 9, which are pivoted on their longitudinal axes to the plate 5, and they do not extend out from the plate in the same line as their axes, but are curved or otherwise bent, so that when in the position shown in full lines in Fig. 4 the reel is of the proper cylindrical or flaring form; but when turned on their axes into the position shown by dotted lines the reel is converted into tapering form, so as to cause or permit the removal of the wire coil. In order to move these arms 9, I provide the shank of each of them back of the plate 5 with small wheels 15, arranged around and in contact with the periphery of a large wheel, 16, which is mounted loosely on the hub of the reel. The shanks of the arms 9 have bearings in a wheel, 17, which is fixed to the hub of the reel.

18 is an eccentric, which is arranged to be moved so as to bear against the periphery of the disk 16, and is operated by a hand-lever, 19.

The operation is as follows: When the parts of the reel are in the position shown in Fig. 2, the end of the wire rod as it traverses the guide 3 enters the mouth 4 of the reel, and, engaging the central boss, 8, is bent into hook form, as shown in Fig. 2. Then, by means of the usual power-connections, the reel is started to revolve, and by these means the end of the rod in the reel is locked by the engagement of the arms 7, and the further revolution of the reel will wind up the wire on the outer arms, 9, as will be readily understood. When the winding operation is being carried on, the arms 9 are projecting from the plate 5 and form substantially the outline of a cylinder.

The operation of the reel in discharging the wire is as follows: Ordinarily the reel revolves with the parts as they are shown in Figs. 2 and 4. When, however, the wire has been wound on the reel, the workman moves the lever 19 so as to bring the eccentric 18 into contact with the disk 16. The effect of this is to retard the rotation of this disk, and therefore to cause each one of the wheels 15 to turn on its axis. When they have made a semi-revolu-



tion, the arms 9 are brought into the position shown in dotted lines and the wire coil will drop off or can easily be removed.

I do not claim herein, broadly, a reel whose  
5 projecting arms are movable inwardly to cause or facilitate the removal of the wire coil; but I claim—

1. In a reel for wire, the combination, with the frame of the reel, of arms pivoted to the  
10 frame and rotary on axes longitudinal with the arms, the said arms projecting from the frame in a direction out of line with their axes, substantially as and for the purposes described.

2. In a reel for wire, the combination, with  
15 the frame of the reel, of arms pivoted to the frame and rotary on axes longitudinal with the arms, the said arms projecting from the frame in a direction out of line with their axes, and gearing connecting the said arms whereby they  
20 may be rotated simultaneously, substantially as and for the purposes described.

3. In a wire-rod mill, the combination, with the rolls, of a reel situate opposite to the delivery end thereof, having a boss projecting  
25 from the frame thereof, and arms projecting

from the reel-frame around the boss, substantially as and for the purposes described.

4. In a wire-rod mill, the combination, with the rolls, of a reel situate opposite thereto, having a central boss projecting from the frame  
30 thereof and having two series of arms projecting from the frame around the said boss—namely, an outer series of arms around which the rod is wound, and an inner series of arms whereby the end of the wire rod, when fed to  
35 the reel, is locked—substantially as and for the purposes described.

5. The combination, with the rolls of a wire-rod mill, of a reel situate opposite to the delivery side of the rolls and a guide extending  
40 thence from the rolls to the reel, said guide being open to permit free lateral escape of the wire, substantially as and for the purposes described.

In testimony whereof I have hereunto set my  
45 hand this 27th day of December, A. D. 1887.

HENRY ROBERTS.

Witnesses:

THOMAS W. BAKEWELL,  
W. B. CORWIN.