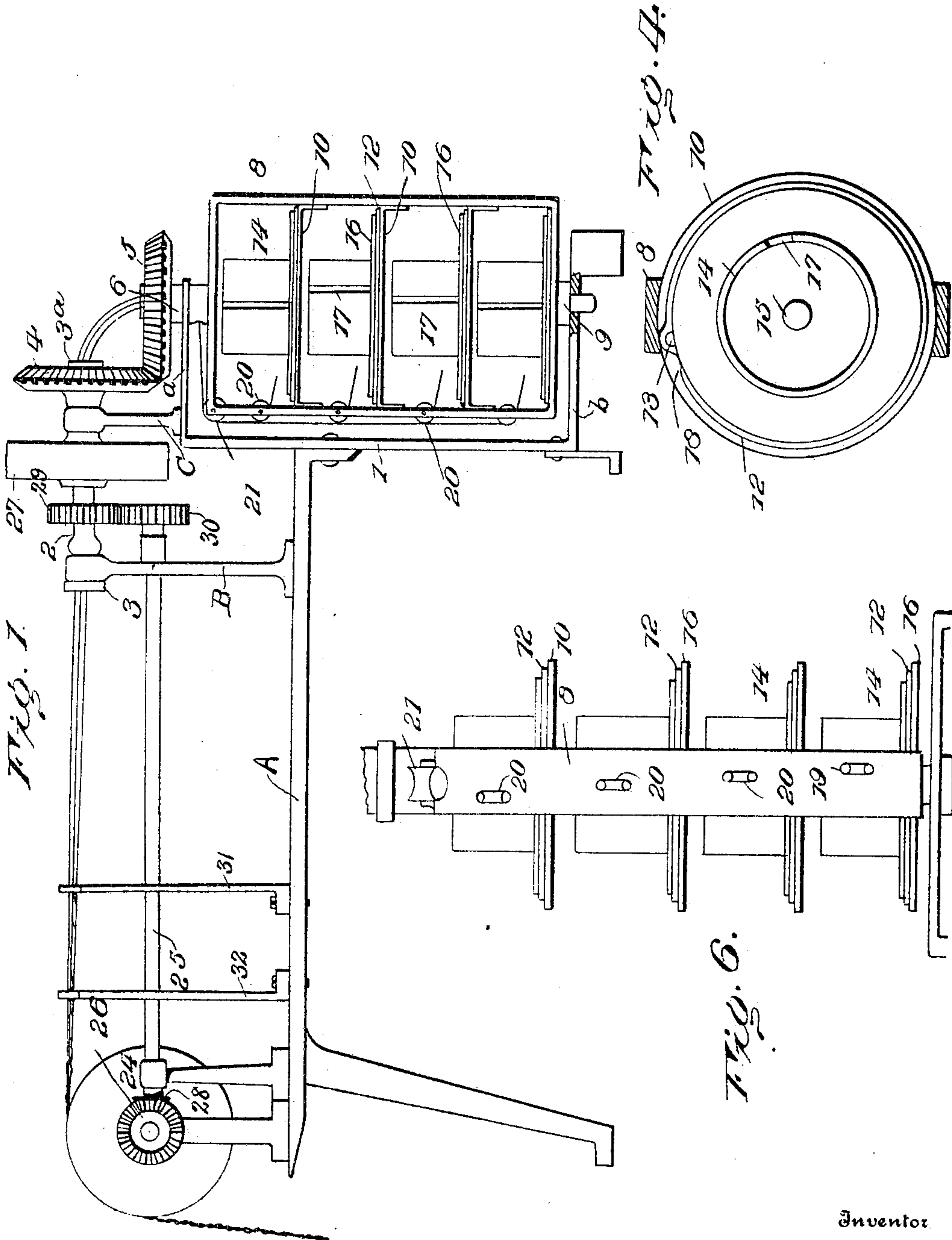


No. 801,613.

PATENTED OCT. 10, 1905.

E. SCHULER.  
WIRE FEEDING MACHINE.  
APPLICATION FILED SEPT 15, 1904.

2 SHEETS—SHEET 1.



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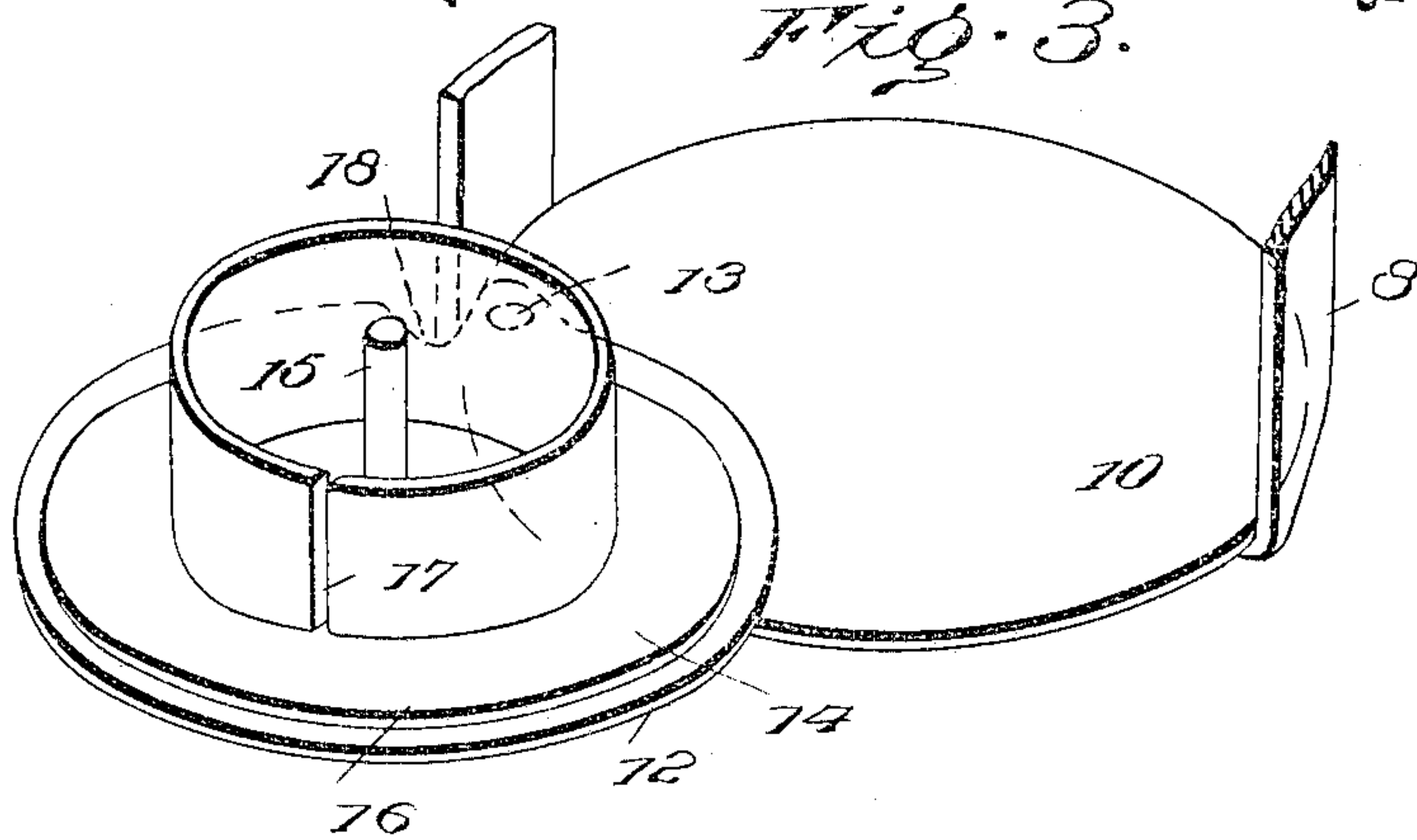
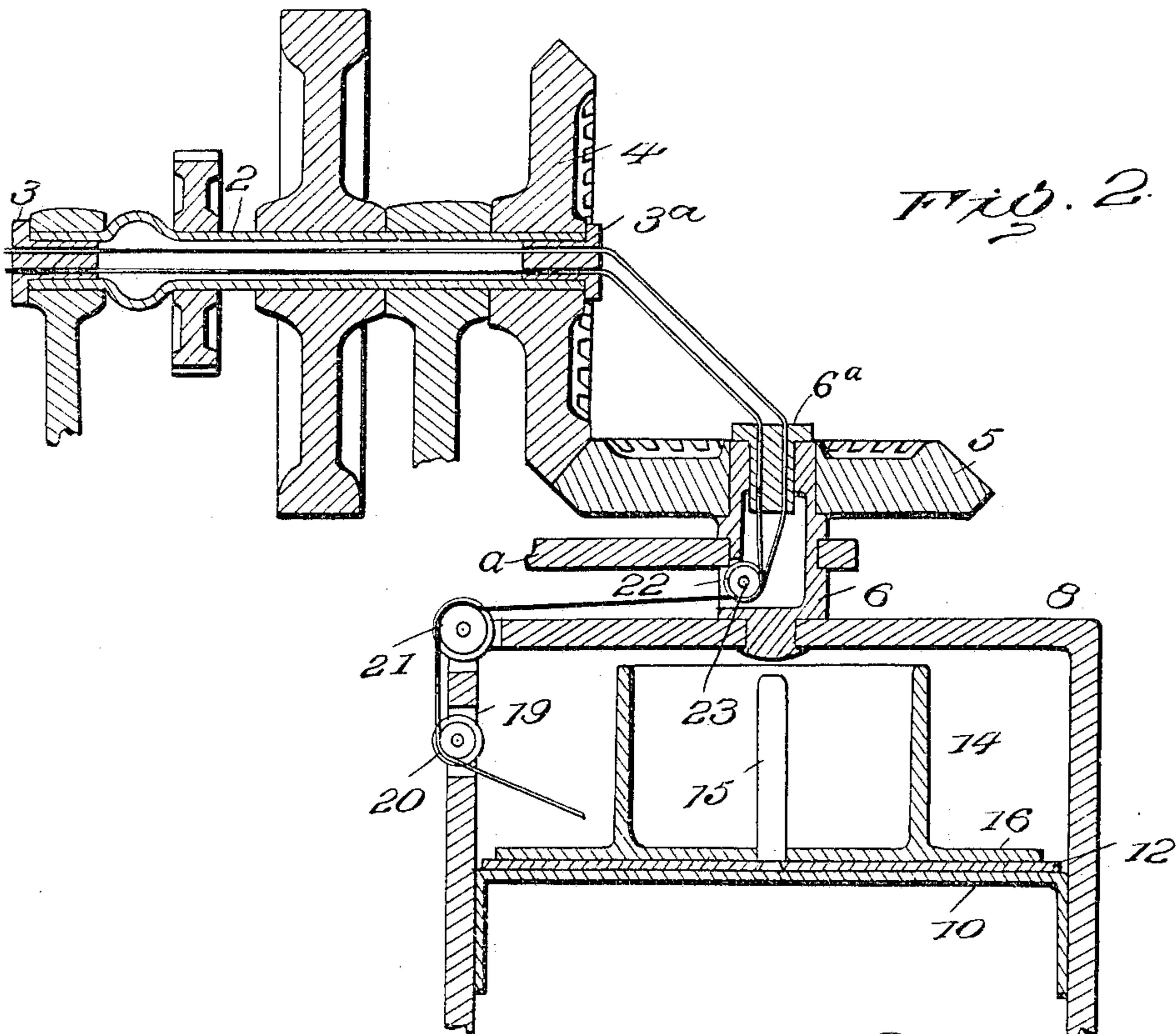
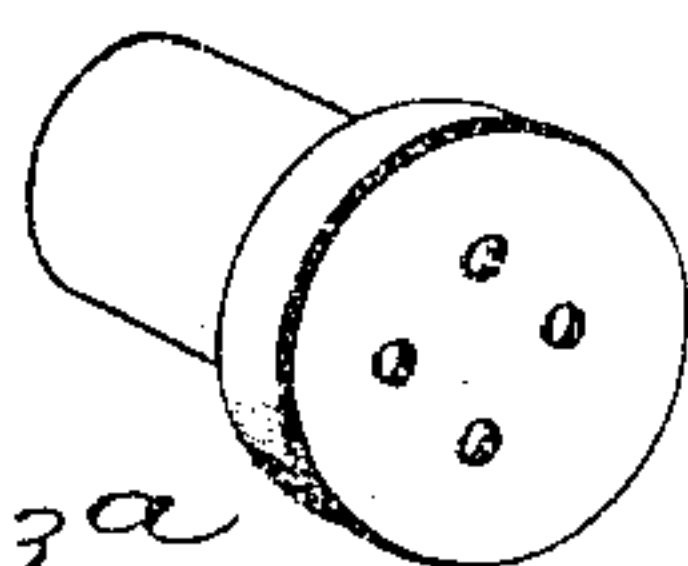


Fig. 5.

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# UNITED STATES PATENT OFFICE.

EDWARD SCHULER, OF ALLENTOWN, PENNSYLVANIA.

## WIRE-FEEDING MACHINE.

No. 801,613.

Specification of Letters Patent.

Patented Oct. 10, 1905.

Application filed September 15, 1904. Serial No. 224,583.

*To all whom it may concern:*

Be it known that I, EDWARD SCHULER, of Allentown, in the county of Lehigh and State of Pennsylvania, have invented certain new and useful Improvements in Wire-Feeding Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

In devices hitherto in use in this art it has been found necessary to employ spools of wire tightly wound and specially prepared for this purpose, and when their supply of wire was exhausted it became necessary to remove them from the machine and have them refilled for use by a special winding device.

The object of this invention is to provide means for feeding wire from loose coils disposed on supports adapted to swing outwardly independently of one another to permit the removal or replacing of a support or spool or to permit the placing of a loose coil on a spool in position, and thereby quickly replenish the supply of wire.

Figure 1 of the accompanying drawings represents a side elevation of the feeding mechanism and the operating means therefor. Fig. 2 represents a vertical section of the feeding mechanism and the upper end of the spool-carrier frame, showing one spool in place and the feeding of the wire from the spool out through the machine. Fig. 3 represents a perspective view of one of the shelves of the spool-carrier frame, showing the spool-supporting plate swung outward on its pivot, with a spool in position thereon to receive a coil of wire or to be removed. Fig. 4 represents a transverse section through the spool-carrier frame. Fig. 5 represents a perspective view of one of the bushings detached. Fig. 6 represents a side elevation of the spool-carrier frame.

The same reference characters represent the same parts in all the figures.

This wire-feeding device is shown in the accompanying drawings as applied to a wire-rope-making machine, comprising a main frame A, having a drum 24 mounted at one end thereof and a horizontally-disposed hollow shaft 2 at the other end. This hollow shaft 2 is supported at one end by an upright

standard B on the main frame and at its other end by a standard C, extending upward from the spool-carrier-supporting frame, hereinafter to be described. This hollow shaft 2 is provided with a driving-pulley 27, with a pinion 29, and with a bevel-gear 4, and it is also provided at its opposite ends with apertured bushings 3 and 3<sup>a</sup>, through which the wire passes on its way to the drum. A counter-shaft 25 is also supported in horizontal position on the main frame A and has a pinion 30 at one end, which meshes with the pinion 29 of the driving-shaft 2, and a bevel-pinion 28 at its other end, which meshes with the bevel-wheel 26 on the drum-shaft and through which motion is imparted to the drum on which the wire rope is wound. Wire-supporting standards 31 and 32 are also mounted on the main frame A and are provided at their upper ends with eyes through which the wire passes.

A spool-carrier-supporting frame 1 is secured to the main frame A at the end opposite the drum 24, preferably in vertical position, and it is provided with laterally-extending upper and lower arms *a* and *b*. A rotary spool-carrier frame 8, preferably of rectangular construction, is provided at its lower end with a shouldered pivot 9, which is mounted to turn in an opening in the lower arm *b* of frame 1 and at its upper end is provided with a hollow stud or shaft 6, journaled in the upper lateral arm *a* of frame 1. A bushing 6<sup>a</sup> is fitted in the outer end of this hollow stud 6 and is provided with apertures corresponding in number with those in the bushings 3 and 3<sup>a</sup>. This shaft or stud 6 is also provided at its outer end with a beveled gear 5, which meshes with the gear 4 on the shaft 2, and thereby imparts motion to the spool-carrier frame 8. In one side of the shaft 6 is an opening 22, having an antifriction-roller 23 mounted therein, over which the wire strands are adapted to pass in their travel from the spools to the rope-making machine.

The frame 8 is provided with a series of spaced shelves 10, disposed one above the other and to which are pivotally attached, as at 13, plates 12, having centrally-projecting pins 15 for receiving the wire-coil supports or spools 14. The plates 12 are notched, as at 18, to permit said plates to swing out-



wardly a sufficient distance to allow the coil-support to be removed or a fresh coil of wire to be placed thereon. The wire supports or spools are adapted to revolve on the pins 5 15 and are preferably cylindrical in shape, with slots 17 for the insertion of one end of the wire therein, and are provided at one end with flanges 16, adapted to rest on the plates 12. In one of the side members of the frame 10 8 is arranged a series of openings 19, disposed out of vertical alinement one with the other and in each of which is mounted an antifriction-roller 20, over which the wires are passed as they are unwound from the spools. This 15 arrangement of the openings out of vertical alinement permits the wires to travel out of contact with each other in their passage from the spools to a long horizontal roller 21, disposed on the upper part of the frame 8, over 20 which they pass to the roller 23 in the hollow stud 6.

In the use of this wire-feeding device the spool-supporting plates 12 are swung outward and the coils of wire placed thereon with one 25 end thereof engaging the slots 17 in the spools 14 to prevent the coil from slipping on the spool. The plates are then swung back into closed position and the free ends of the wires threaded through the slots 19 over the rollers 20, up over roller 21 into the opening 22 30 in the hollow shaft 6, over the roller 23, disposed in said opening, then out through the apertures in the bushing 6<sup>a</sup>, thence into the apertures of bushing 3<sup>a</sup>, through the hollow 35 shaft 2 and out through the bushing 3, through the eyes of the supports 31 and 32 onto the drum 24. Power is then applied to the shaft 2 through a belt passing over the pulley 27, which causes the rotation of said shaft, and 40 through the gear 4, which meshes with gear 5 on the shaft 6, imparts motion to the spool-carrier frame 8 and permits the feeding of the wires through the bushings 6<sup>a</sup> into the bushing 3<sup>a</sup> without any twisting of the wires 45 in their passage between these parts. Motion is also imparted from the shaft 2 through the pinions 29 and 30 to the counter-shaft 25, and from the counter-shaft 25 to the drum 24 through the beveled gears 26 and 28. The 50 drum 24 receives the twisted rope and the winding thereof on said drum causes a pulling action on the wire strands and withdraws them from the spools, as 14, which are rotatably mounted in the spool-carrier.

55 I claim as my invention—

1. The combination of a stationary support, a rotary spool-carrier, and a series of spool-supports disposed in said carrier and pivoted to swing outward independently of one another. 60

2. The combination of a supporting-frame, a rotary spool-carrier having a vertical axis disposed in said frame, and a series of spool-

supports disposed one above another in said carrier and adapted to swing outward independently of one another for removing or replacing a spool. 65

3. A spool-support comprising a base-plate pivoted near its periphery and provided with a notch adjacent to its pivot, and a central 70 stud on said base.

4. The combination of a rotary spool-carrier provided with a shelf, and a spool-support comprising a plate pivoted near its periphery to said shelf, and a central stud 75 attached to said plate.

5. In a wire-feeding machine, the combination with a stationary frame, of a second frame rotatably mounted therein and having a series 80 of spaced-apart shelves, plates pivotally mounted on said shelves and adapted to swing outwardly from said second frame, spools adapted to rotate thereon, means for rotating said second frame, and means for withdrawing the wire. 85

6. In a wire-feeding machine, the combination with a stationary frame, of a second frame rotatably mounted therein and having a series 90 of spaced-apart shelves, plates pivotally mounted on said shelves and adapted to swing outwardly from said second frame, upright pins on said plates, spools adapted to rotate on said pins, means for rotating said second frame, and means for withdrawing the wire. 95

7. In a wire-feeding machine, the combination with a frame having lateral spaced-apart 100 arms, of a second frame rotatably mounted between said arms, shelves secured in said second frame, plates pivotally mounted on said shelves and adapted to swing outwardly, upright pins projecting from said plates, wire- 105 holding spools adapted to rotate on said pins, said spools having flanges at their lower ends, and designed to receive coils of wire when the plates are swung laterally, means for rotating said second frame, and means for withdrawing the wire. 110

8. A wire-feeding device comprising a rotatable frame, a plurality of spaced-apart shelves therein, plates pivotally mounted upon 115 the shelves at one side thereof, and independently-operating spools rotatably mounted on said plates and adapted to be swung outwardly therewith, and means for rotating said frame. 120

9. The combination with a rotary spool-carrier, of a plurality of rotatable spools independently mounted therein one above the other, and means for swinging said spools out of vertical line one with the others. 125

10. The combination with an operating-shaft, a bevel-gear mounted thereon and having a plurality of axial openings, a second bevel-gear meshing with the former and having corresponding axial openings, of a rotary frame designed to be actuated by said gear- 130 ing, a series of spaced-apart shelves mounted

in said frame, pivotally-mounted plates there-  
on, spools rotatably mounted on said plates  
and adapted to be swung outwardly therewith,  
the wires from said spools being designed to  
5 be conducted through said axial openings, sub-  
stantially as specified.

In testimony whereof I have signed this

specification in the presence of two subscrib-  
ing witnesses.

EDWARD SCHULER.

Witnesses:

WILLIAM H. SOWDEW,  
HENRY W. MOHR.