

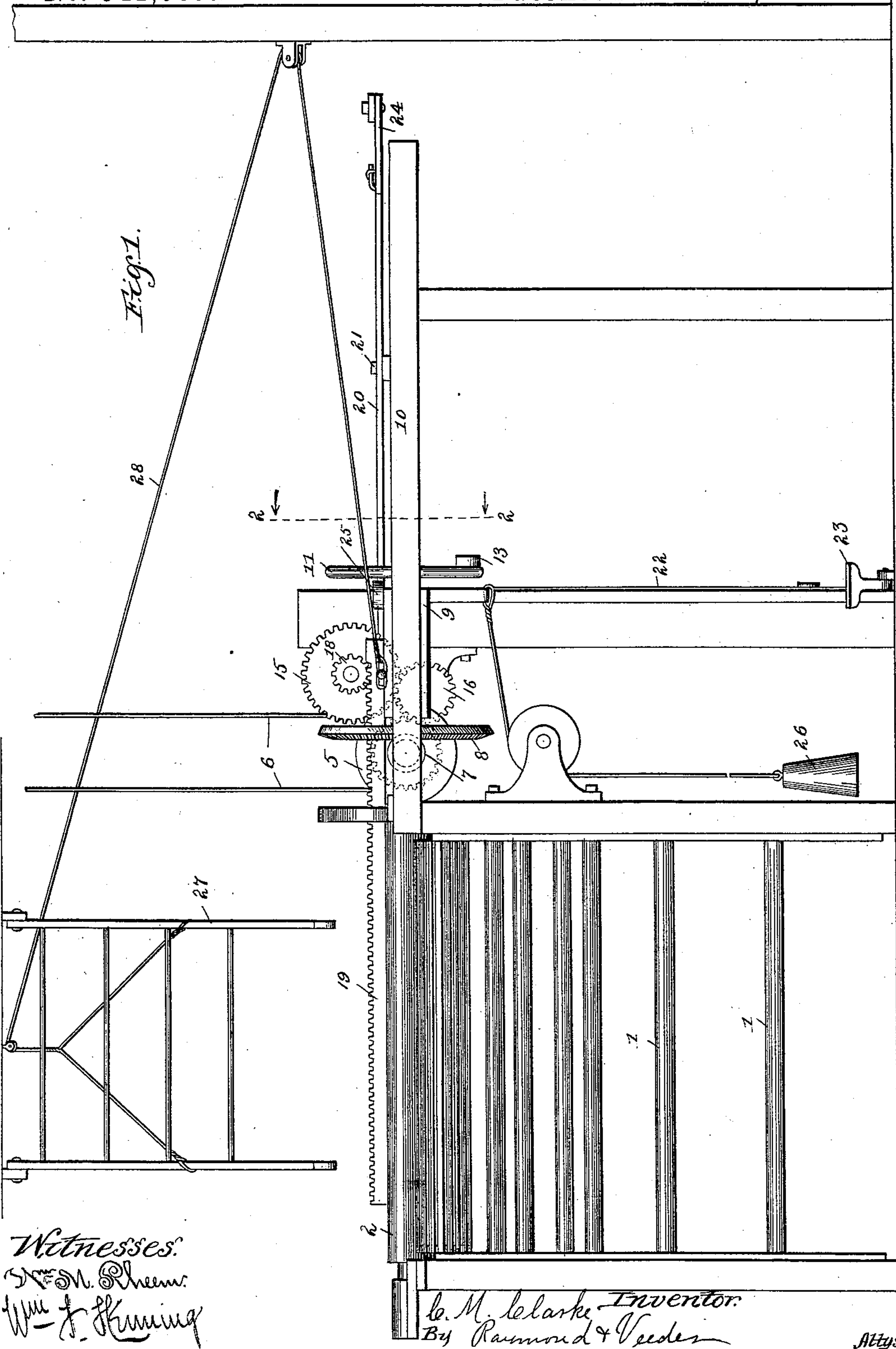
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C. M. CLARKE.  
MACHINE FOR MAKING TUBES.

No. 541,067.

Patented June 18, 1895.



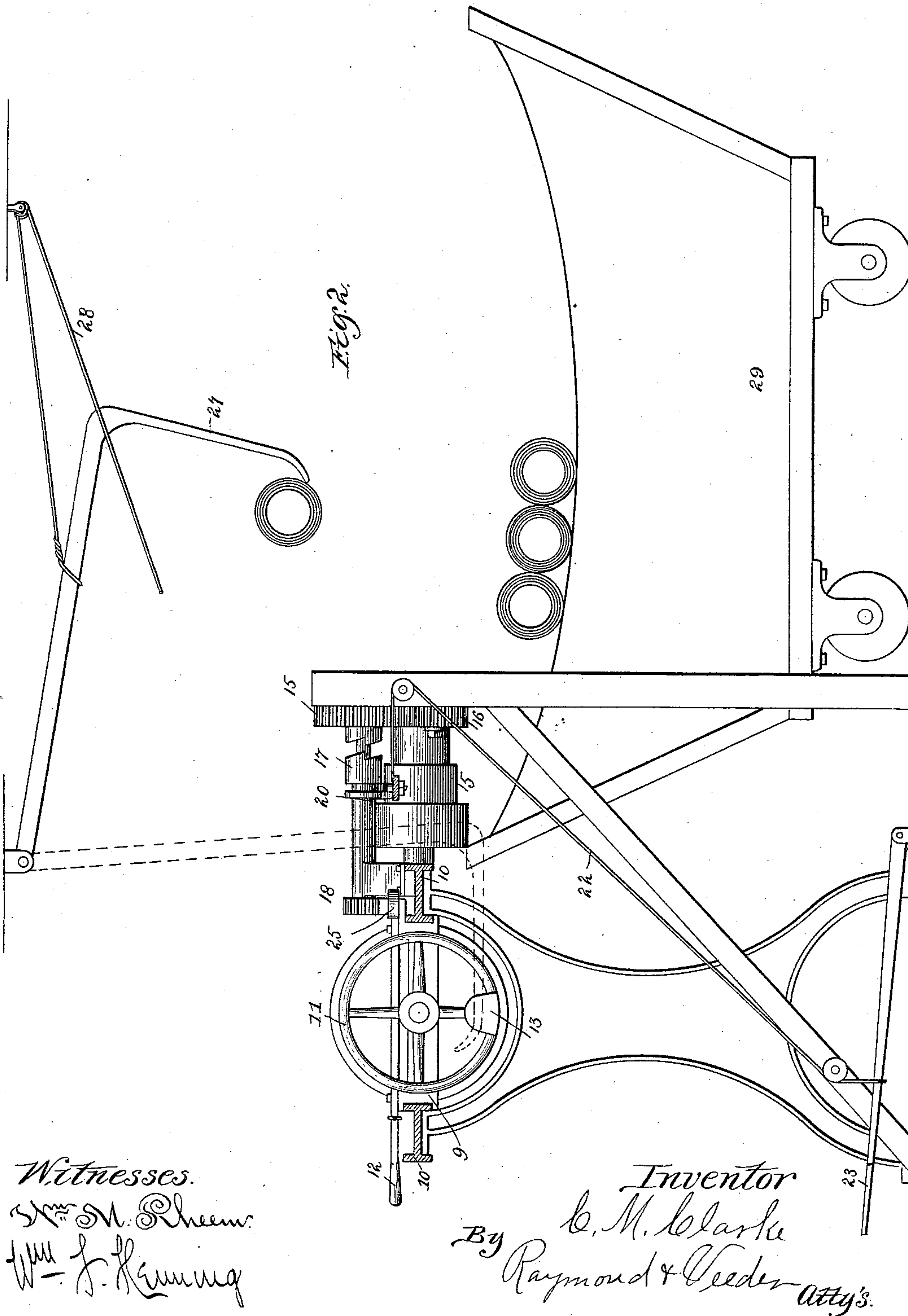
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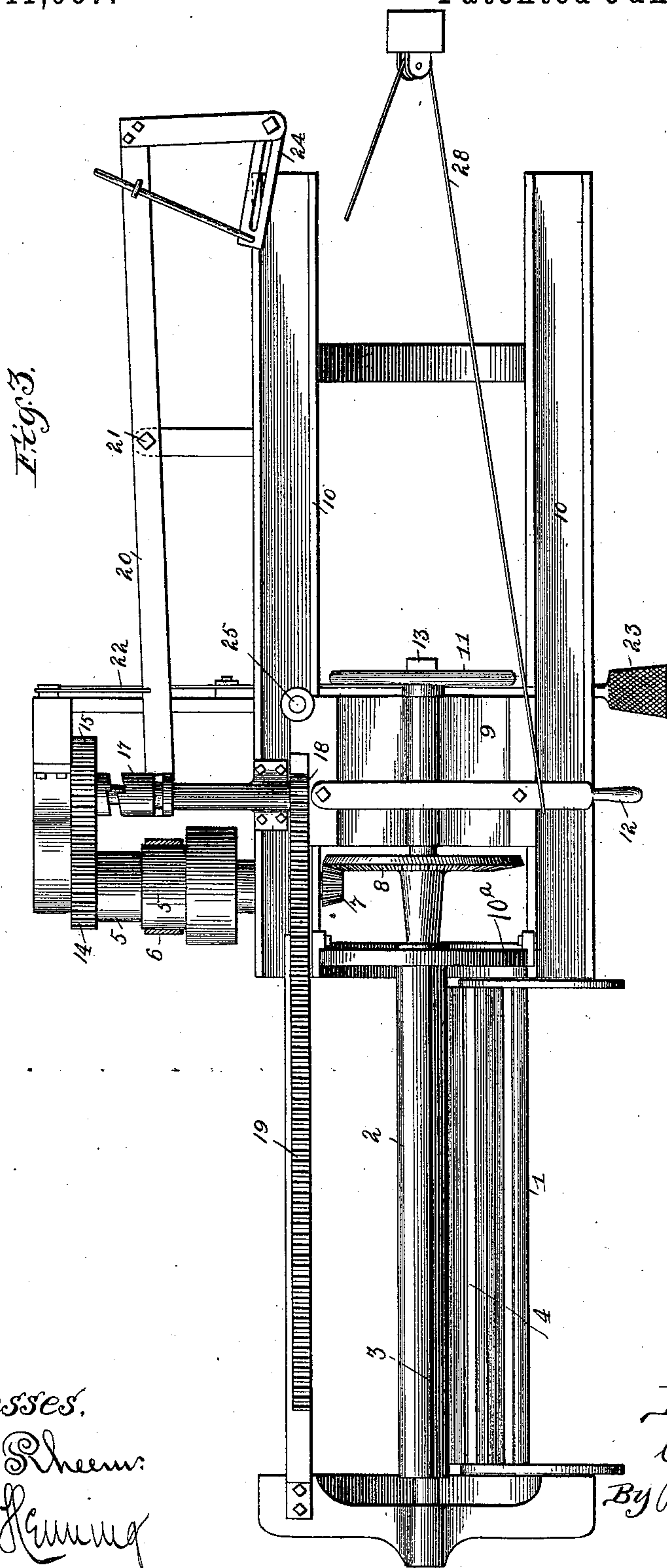
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4 Sheets—Sheet 3.

C. M. CLARKE.  
MACHINE FOR MAKING TUBES.

No. 541,067.

Patented June 18, 1895.



Witnesses.

Wm. M. Rheem  
Wm. J. Leuning

Inventor.  
C. M. Clarke  
By Raymond & Veeders  
Atty's.



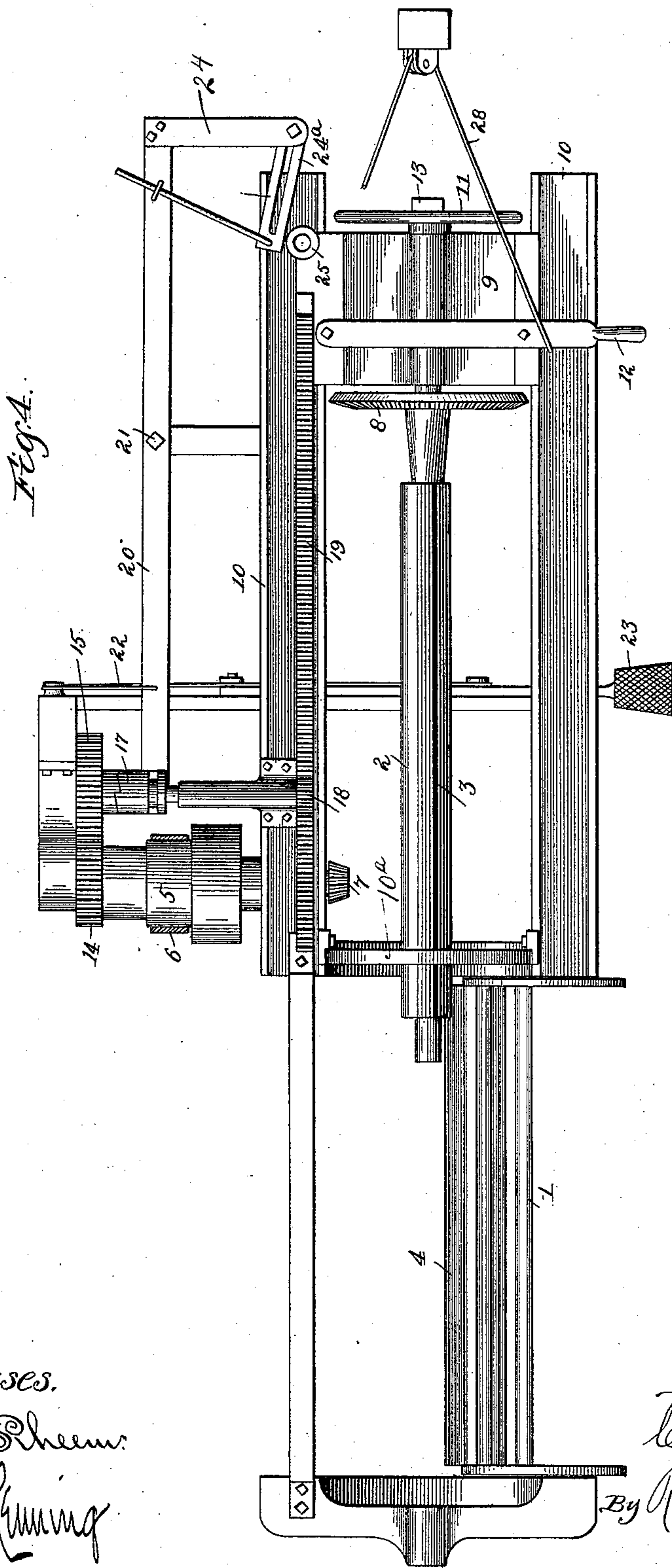
(No Model.)

4 Sheets—Sheet 4.

C. M. CLARKE.  
MACHINE FOR MAKING TUBES.

No. 541,067.

Patented June 18, 1895.



Witnesses.

Ston. Rheum.

W. J. Fleming

Inventor:

C. M. Clarke

By Raymond & Veeder

Attys



# UNITED STATES PATENT OFFICE.

CECIL M. CLARKE, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE H. W. JOHNS MANUFACTURING COMPANY.

## MACHINE FOR MAKING TUBES.

SPECIFICATION forming part of Letters Patent No. 541,067, dated June 18, 1895.

Application filed October 17, 1892. Serial No. 449,053. (No model.)

*To all whom it may concern:*

Be it known that I, CECIL M. CLARKE, of Chicago, Illinois, have invented certain new and useful Improvements in Machines for Making Tubes, whereof the following is a specification.

My invention relates more particularly to machines for rolling sheets of paper and other materials into tubes, and to means for automatically delivering the formed tubes from the machine.

This invention mainly consists in the novel mechanism hereinafter described and more particularly pointed out in the claims.

In the accompanying drawings I have shown my invention in what I consider to be its best form.

Figure 1 is a side elevation of the machine in position to form a tube. Fig. 2 is a cross-section of same, taken at line 2 2 on Fig. 1. Fig. 3 is a plan or top view of the same. Fig. 4 is a similar view showing the mandrel withdrawn nearly to its limit at which the tube is released.

1 are bars, which may support rolls of material to be wound into tubes.

2 is the mandrel on which the tube is wound.

3 is a slot in the surface of the mandrel.

4 is a pressure or tension roll with a slotted surface for convenience in cutting the sheets.

In winding tubes, the operator inserts the edges of as many pieces as he desires into the slot 3 in the mandrel and starts the machine. The mandrel is revolved and winds the sheets into a tube. When the tube is sufficiently thick he stops the mandrel, runs a knife along one of the slots in the roll 4 to cut off the surplus material, and secures the edge of the wound material. It is at this point of the operation of the machine that my invention comes into play.

5 is a cone of pulleys driven by a belt 6 from a countershaft overhead or otherwise.

7 is a bevel pinion on the pulley arbor, meshing with a bevel wheel 8 on the mandrel arbor and thereby rotating the mandrel. The wheel 8, and with it the mandrel, is supported on a carriage 9, which is mounted on suitably located ways 10 so that it can travel back and forth to withdraw the mandrel from a formed tube and return it again to position to form

another said mandrel working through a stripper 10<sup>a</sup> located at the end of the ways 10.

11 is a hand wheel on the arbor of wheel 8, and 12 is a handle on the carriage for convenience.

13 is a weight, placed preferably on hand wheel 11, to insure the mandrel occupying its initial angular position when returned to place after withdrawal from a tube.

14 is a spur pinion attached to the pulleys 5, and giving rotation to a spur wheel 15, either directly or through an idler 16. Wheel 15 is loose upon its shaft, but may be connected to it by a clutch 17.

18 is a pinion, on the inner end of the shaft, engaging a rack 19 attached to carriage 9, so that the rotation of the pinion causes the carriage to travel.

20 is the clutch lever pivoted at 21, and connected by a cord 22 with a treadle 23, so that a pressure on the treadle causes the engagement of the clutch. The farther end 24 of the lever is provided with a link 24<sup>a</sup> rigidly yet adjustably secured to said lever and adapted to rest in the path of a pin 25, whereby the carriage 9, by its continued outer movement, causes said pin to strike the link 24<sup>a</sup> and force the same together with end 24 of the lever in an outwardly direction, thereby forcing the other end of said lever in the opposite direction in order to disengage the clutch and thus release the carriage.

26 is a weight connected to carriage 9 and acting to return it to its inner position.

27 is a carrier pivoted above the machine and held in the position shown in full lines in Fig. 2 by a cord 28 passing over suitably arranged pulleys, and attached to carriage 9. When the carriage moves outward to withdraw the mandrel from a tube, the carrier 27 descends to the position shown in dotted lines, Fig. 2, and the tube falls upon it from the mandrel said tube being removed from the mandrel by the stripper 10<sup>a</sup>. As the carriage 9 returns to position the carrier is pulled up by the cord and the tube falls off of it onto a car 29, or other receptacle.

The operation of the machine is as follows: The operator having formed the tube upon the mandrel, and fastened the edges of the sheets, presses the treadle 23 with his foot,



and thereby throws clutch 17 into engagement. This determines the rotation of pinion 18 and causes the carriage to travel outward and withdraw the mandrel from the formed tube. At the same time carrier 27 comes down under the tube and receives it when the mandrel lets it fall. The carriage on reaching the end of its travel strikes the end 24 of the clutch lever and disengages the clutch, and is drawn back by weight 26 into position to form another tube. Carrier 27 is at the same time swung up again, and discharges the tube on it onto the car. As the carriage comes back to position the counterweight 13 returns the mandrel to its proper angular position.

The foregoing description and drawings are intended to be illustrative merely, as the mechanism may be modified in many ways without departing from the spirit of my invention, and I therefore do not limit myself to the specific instrumentalities set forth.

I claim—

1. In a machine for making tubes, the combination with a frame, of a longitudinally-traveling carriage moving upon said frame and having a rack, a mandrel carried by said carriage, mechanism for revolving said mandrel when held at its forward position, moving said carriage back and forth, and automatically releasing the carriage when its rear

limit is reached, and a vibrating carrier operated by the movement of the carriage, substantially as shown and described.

2. The combination, substantially as set forth, of the mandrel, a longitudinally traveling carriage upon which the mandrel is supported, mechanism for causing the motion of said carriage, and a vibrating carrier operated by the movement of the carriage to receive the released tube and convey it from the machine.

3. The combination, substantially as set forth, of the mandrel on which the tube is formed, a carriage supporting said mandrel, a pinion and rack for causing a movement of the carriage, a clutch for throwing the pinion into action, a device within reach of the operator to cause the engagement of the clutch, and a device acted on by the carriage to automatically disengage the clutch and a carrier connected with and operated by the carriage so that as the mandrel is withdrawn, the tube will drop upon said carrier and be discharged from the machine, substantially as shown and described.

CECIL M. CLARKE.

Witnesses:

IRWIN VEEDER,  
TODD MASON.