

(No Model.)

3 Sheets—Sheet 1.

A. SCHULZE.  
DUPLEX ROLLER BALING PRESS.

No. 584,899.

Patented June 22, 1897.

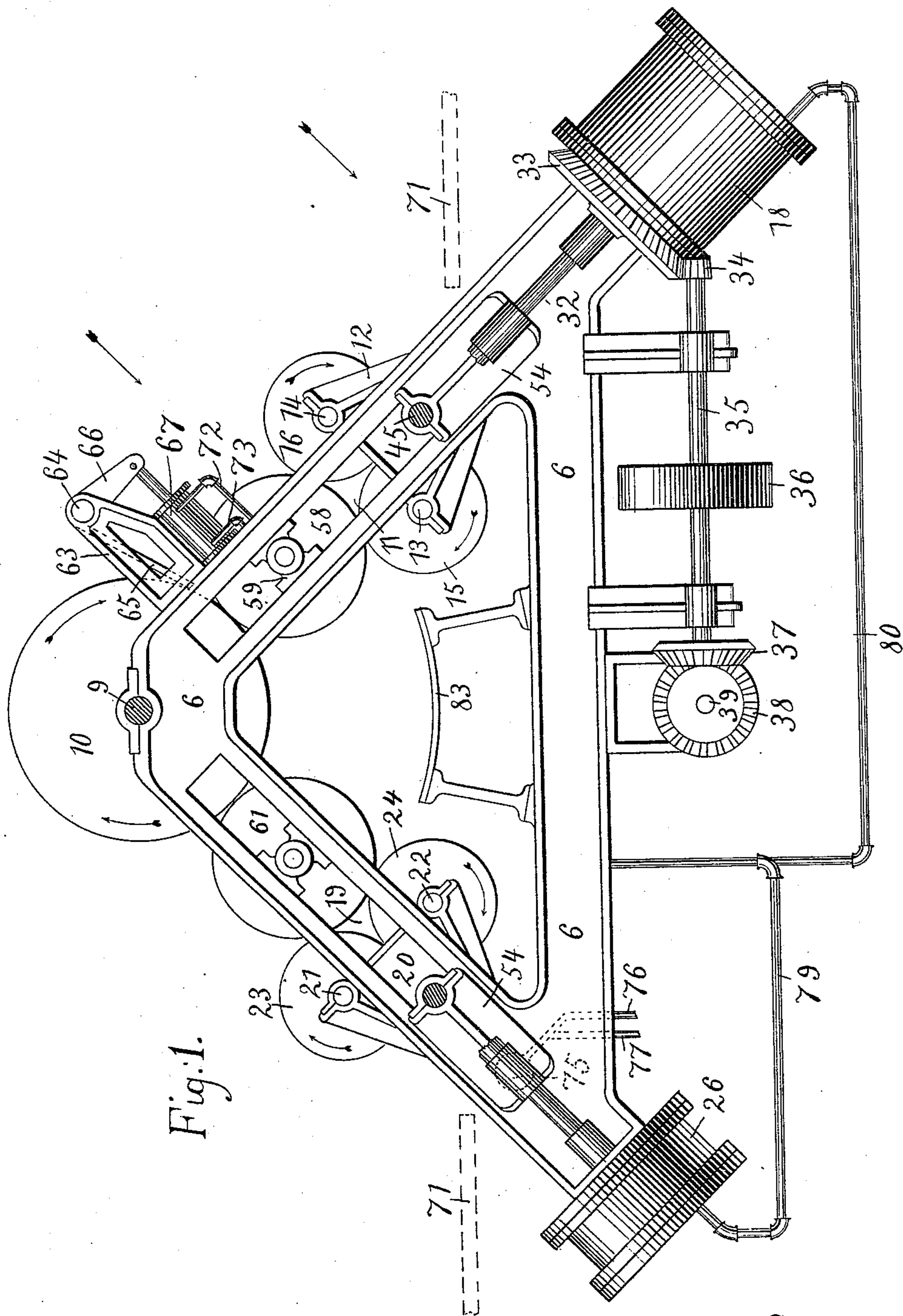


Fig. 1.

Witnesses  
W. A. Alexander.  
E. E. Venable.

Inventor  
Andrew Schulze  
By Attorneys  
Howe & Fowler

(No Model.)

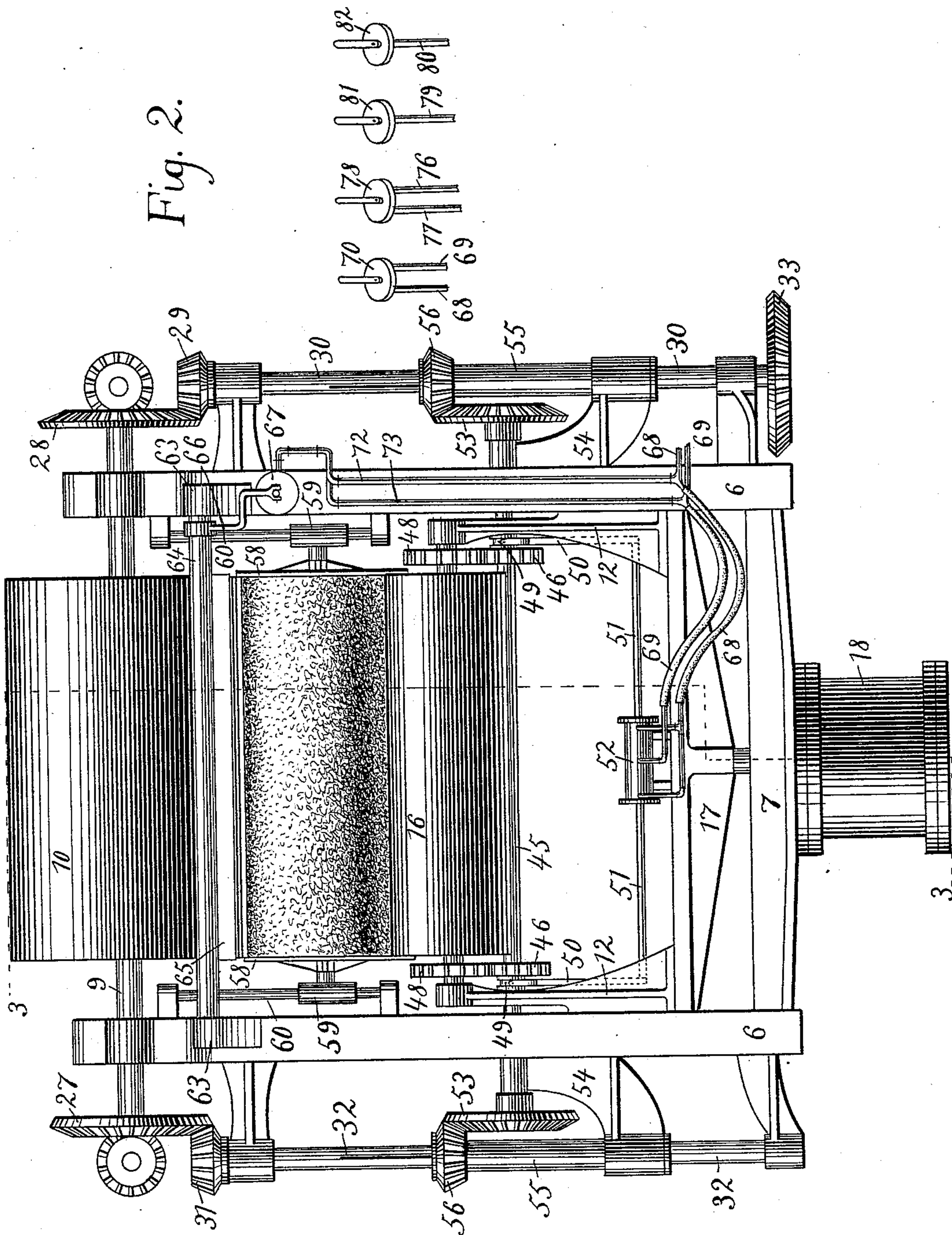
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Fig. 2.



Witnesses  
W. G. Alexander.  
E. E. Verrell.

Inventor  
Andrew Schulze.  
By Attorneys  
Hewes & Fowler



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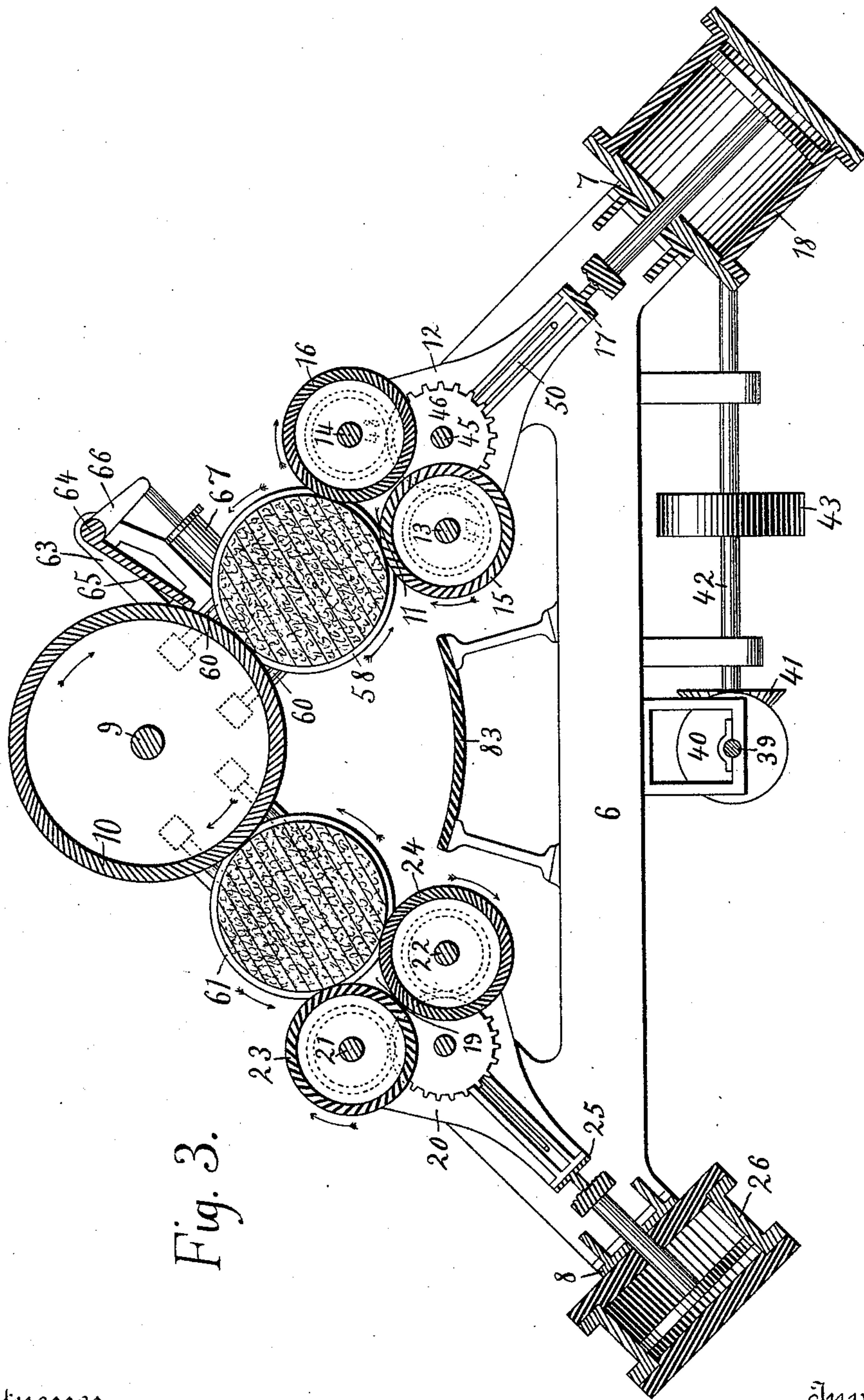


Fig. 3.

Witnesses  
H. G. Alexander  
E. E. Vennell

Inventor  
Andrew Schulze  
By Attorneys  
Hewitt & Fowler



# UNITED STATES PATENT OFFICE.

ANDREW SCHULZE, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE KINGSLAND & DOUGLAS MANUFACTURING COMPANY, OF SAME PLACE.

## DUPLEX-ROLLER BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 584,899, dated June 22, 1897.

Application filed October 28, 1895. Serial No. 567,177. (No model.)

*To all whom it may concern:*

Be it known that I, ANDREW SCHULZE, a citizen of the United States, residing at the city of St. Louis, in the State of Missouri, have  
5 invented certain new and useful Improvements in Duplex-Roller Baling-Presses, of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which it appertains to  
10 make and use the same, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to new and useful improvements in duplex-roller baling-presses,  
15 whereby the process of baling is rendered continuous, application for Letters Patent upon which were filed by me May 14, 1895, Serial No. 549,273.

The objects of my invention are to so construct a press of the class named that the bale is formed without the use of a core and transferred from one set of rollers to another by the action of the rollers themselves.

My invention also has for its object to provide means for severing the bat of cotton and preventing its entrance into the press.

My invention consists in providing a plurality of preferably two movable rollers in each series of several rollers and in providing means for stopping either set of movable  
30 rollers independently of the fixed roller or rollers and in other novel features and details of construction, all of which are fully set forth in the annexed specification and pointed out in the claims herein.

In the accompanying drawings, which illustrate a press made in accordance with my invention, Figure 1 is an end view, part of the gearing being removed. Fig. 2 is a view of  
40 one side of the press, looking in the direction indicated by the arrows in Fig. 1; and Fig. 3 is a section on the line 3 3 of Fig. 2.

Like marks of reference refer to the same parts in the several views of the drawings.

45 6 are two similar triangular end frames which are connected by bars 7 and 8, Figs. 2 and 3. In the end frames 6 is journaled a shaft 9, upon which is mounted a main or rigidly-journaled roller 10. In each of the  
50 end frames 6 is formed a way 11, Figs. 1 and 3, in which slides a triangular frame 12. In

the two frames 12 are journaled two shafts 13 and 14, upon which are mounted rollers 15 and 16. The frames 12 are connected by a yoke 17, Figs. 2 and 3, which is attached to  
55 the piston-rod of a cylinder 18, which is carried by the bar 7. In the end frames 6, at the side of the press opposite the ways 11, are ways 19, in which slide triangular frames 20, similar to the frames 12. In these frames 20  
60 are journaled shafts 21 and 22, on which are mounted rollers 23 and 24. The frames 20 are connected by a yoke 25, Fig. 3, which is attached to the piston-rod of a cylinder 26, which is carried on the bar 8.

The shaft 9 of the rigidly-journaled roller 10 is extended beyond the end frames 6 at each end of the press, and to it is attached bevel gear-wheels 27 and 28, Fig. 2. The bevel gear-wheel 28 meshes with a bevel gear-wheel  
70 29 on a shaft 30, carried by suitable brackets secured to the end frame 6. The bevel gear-wheel 27 meshes with a bevel gear-wheel 31 on a shaft 32, carried in the brackets secured to the end frame 6.

To the lower end of the shaft 30 is secured  
75 a bevel gear-wheel 33, Figs. 1 and 2, which meshes with a bevel gear-wheel 34, Fig. 1, carried on a shaft 35, supported in suitable brackets secured to one of the end frames 6. On  
80 the shaft 35 is mounted a belt-pulley 36, to which the power for driving the press may be applied.

In order to permit the press to be driven from either end thereof, I have provided the  
85 following mechanism: On the shaft 35 at the end opposite from that on which the bevel gear-wheel 34 is mounted is a bevel gear-wheel 37, which meshes with a bevel gear-wheel 38, carried on a shaft 39. The shaft  
90 39 is extended to the opposite end of the press, where a bevel gear-wheel 40, Fig. 3, is mounted on it. The bevel gear-wheel 40 meshes with a bevel gear-wheel 41 on a shaft 42, upon which is mounted a belt-pulley 43, similar to  
95 the pulley 36, whereby the press may be driven from either end.

Journaled in the frames 12 is a shaft 45, upon which at each end thereof is mounted a spur-wheel 46, Figs. 2 and 3, which meshes  
100 with two spur-wheels 47 and 48 on the shafts 13 and 14 of the rollers 15 and 16, respectively.



Mounted on the shaft 45 between the frames 12 and spur-wheels 46 at each end of the press is a clutch 49, by means of which the spur-wheels 46 can be rigidly secured to the shaft 45 or allowed to turn loosely upon it. The shift-levers 50 of the clutches 49 are attached to the piston-rods 51 of a fluid-pressure cylinder 52, which is provided with two pistons. On the shaft 45 at each end of the press is mounted a bevel gear-wheel 53, and on said shaft at each end of the press between the bevel gear-wheels 53 and the end frames 6 is mounted a substantially L-shaped bracket 54, in which is journaled a sleeve 55. The sleeves 55 are keyed to the shafts 30 and 32, so as to allow longitudinal movement of said shafts, and have secured to their upper ends bevel gear-wheels 56, which engage with the bevel gear-wheels 53. The rollers 23 and 24 are provided with gearing for driving and stopping them, like that described for driving and stopping the rollers 15 and 16.

58 are bale-end plates for forming the end of the bale while it is between the first set of rollers 10, 15, and 16. The said bale-end plates are mounted in boxes 59, which slide on rods 60, carried on the end frames 6. 61, Figs. 1 and 3, are bale-end plates for forming the end of the bale while it is between the second set of rollers 10, 23, and 24. They are mounted in the same manner as the plates 58. Secured to near the top of the end frames 6, at the side of the press at which the bat is admitted, are two brackets 63, in which is journaled a shaft 64. On the shaft 64 is carried a plate 65 for cutting the bat and stopping its admission to the press. Secured to the shaft 64 is an arm 66, which is attached to the piston-rod of a cylinder 67, which is mounted on one of the end frames 6.

Leading to the cylinder 52, Fig. 2, are two pipes 68 and 69, which are connected with a three-way valve 70, situated at one end of the press at a convenient distance from floor 71. (Shown in broken lines, Fig. 1.) Connected with the pipes 68 and 69 are two pipes 72 and 73, leading from the cylinder 67, so that when the three-way valve 70 is turned to stop the rollers 15 and 16 the plate 65 is thrown against the roller 10 to cut the bat. The pipes 68 and 69 are formed of flexible tubing for a part of their length to admit of the rising and falling of the cylinder 52 with yoke 17, upon which it is mounted.

Leading from a cylinder 75, (shown in dotted lines, Fig. 1,) which is similar to the cylinder 52 and controls the rotation of the rollers 23 and 24, are two pipes 76 and 77, which are connected with a three-way valve 78, Fig. 2, preferably situated near the valve 70. These pipes 76 and 77, like the pipes 68 and 69, are formed of flexible tubing for a part of their length to admit of the rise and fall of the cylinder 75 with the yoke 25, on which it is carried. Leading from the compressing-cylinders 26 and 18 are pipes 79 and 80, Fig. 1, which are connected with valves 81 and 82,

Fig. 2. The valves 81 and 82 are two-way valves, for the cylinders 26 and 18 require the admission of pressure at but one end, the weight of the attached rollers pressing the pistons downward as soon as the pressure is allowed to escape.

83 is a curved metal plate which is supported by suitable standards secured to the end frames 6. The distance between the plate 83 and the main roller 10 is just sufficient to allow the passage of the completed bale.

The operation of my press is as follows: The bat enters the press over the top of the plate 65 and is wound upon itself by the action of the rollers 10, 15, and 16. After the bale has reached the desired size the valve 70 is turned to stop the rotation of the rollers 15 and 16 and raise the plate 65 against the roller 10. The raising of the plate 65 severs the bat, and as soon as the rollers 15 and 16 stop rotating the movement of the roller 10 rolls the bale over the roller 15, across the bale-supporting plate 83, and into position between the rollers 10, 23, and 24, the rollers 23 and 24 having been previously lowered by operating the valve 81. The rollers 15 and 16 are now started rotating and the plate 65 lowered by turning the valve 70. The cotton which has accumulated between the rollers 10, 15, and 16 forms the nucleus of a new bale. The process of compressing the first bale is completed between the rollers 10, 23, and 24 by applying the bagging to the bale while between the said rollers. The rollers 23 and 24 are now stopped from rotation by turning the valve 78, and the bale with the bagging applied is rolled out of the press by the further rotation of the roller 10.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a baling-press, a rigidly-journaled roller, two sets of movably-journaled rollers each composed of a plurality of rollers, one of said sets of movably-journaled rollers co-operating with said rigidly-journaled roller to form a coreless bale, and the other of said sets co-operating with said rigidly-journaled roller to wind the bagging on said bale, driving mechanism for rotating said rollers, means for raising and lowering said movably-journaled rollers, and devices for stopping their rotation independently of said rigidly-journaled roller.

2. In a baling-press, a rigidly-journaled roller, two sets of movably-journaled rollers each composed of a plurality of rollers, one of said sets co-operating with the said rigidly-journaled roller to form a coreless bale, and the other co-operating therewith to wind the bagging on said bale, movable frames or yokes carrying said movably-journaled rollers, means for exerting pressure upon said frames or yokes, and means for rotating said rollers.

3. In a baling-press, a rigidly-journaled roller, a set of movably-journaled rollers co-operating with said rigidly-journaled roller



to roll a coreless bale, devices for stopping the rotation of said movably-journaled rollers, and means for stopping the feeding of the bat to the space between said rigidly-journaled and movably-journaled rollers simultaneously with the stopping of the rotation of said movably-journaled rollers.

4. In a baling-press, a rigidly-journaled roller, a set of movably-journaled rollers co-operating with said rigidly-journaled roller to roll a coreless bale, a second set of movably-journaled rollers also coöperating with said rigidly-journaled roller to apply the bagging to said bale, means for transferring the bale from one of said sets of movably-journaled rollers to the other, and devices for stopping the admission of the bat to the press, simultaneously with the transference of the bale.

5. In a baling-press, a rigidly-journaled roller, a set of movably-journaled rollers co-operating with said rigidly-journaled roller to roll a coreless bale, suitable clutch mechanism controlling the rotation of said movably-journaled rollers, a fluid-pressure cylinder actuating said clutch mechanism, devices for controlling the admission of the bat to the press, a fluid-pressure cylinder actuating said devices, and pipe connections between said fluid-pressure cylinders, whereby they may be operated simultaneously.

6. In a baling-press, a rigidly-journaled roller, a set of movably-journaled rollers between which and said rigidly-journaled roller a bale may be rolled, an oscillating plate adapted to be thrown against said rigidly-journaled roller to cut the bat and stop its entrance to the press, and a fluid-pressure cylinder for actuating said plate.

7. In a baling-press, a rigidly-journaled roller, a set of movably-journaled rollers between which and the said rigidly-journaled roller a bale may be rolled, a movable frame or yoke carrying said movably-journaled rollers, a driving-shaft for said movably-journaled rollers carried in said movable frame, a spur-wheel carried by said driving-

shaft, a clutch controlling the rotation of said spur-wheel, means for operating said clutch, and spur-wheels carried by said movably-journaled rollers and engaging with said first-mentioned spur-wheel.

8. In a baling-press, a rigidly-journaled roller, a set of movably-journaled rollers co-operating with said rigidly-journaled roller to roll a coreless bale, a driving-shaft, gearing connecting said driving-shaft with said rigidly-journaled roller, a second driving-shaft for said movably-journaled rollers, gearing connecting said driving-shafts, gearing connecting said latter driving-shaft with said movably-journaled rollers, and a clutch controlling said latter gearing.

9. In a baling-press, a rigidly-journaled roller, a set of movably-journaled rollers, a driving-shaft, gearing connecting said driving-shaft with said rigidly-journaled roller, a second driving-shaft for said movably-journaled rollers, a bracket carried by said latter driving-shaft, a gear-wheel rigidly mounted on said latter shaft, a sleeve carried by said bracket and movably keyed to said first-named driving-shaft, and a gear-wheel rigidly mounted on said sleeve and engaging with said former gear-wheel.

10. In a baling-press, a rigidly-journaled roller, movably-journaled rollers coöperating with said rigidly-journaled roller to roll a bale, driving-gear for said rigidly-journaled and movably-journaled rollers, a driving-pulley at one end of the press and connected to said driving-gear, a driving device at the opposite end of the press, and gearing connecting said driving device and pulley, whereby the press may be driven from either end.

In testimony whereof I have hereunto set my hand and affixed my seal in the presence of the two subscribing witnesses.

ANDREW SCHULZE. [L. s.]

Witnesses:

JOHN F. GREEN,  
WILFRID A. ALEXANDER.