

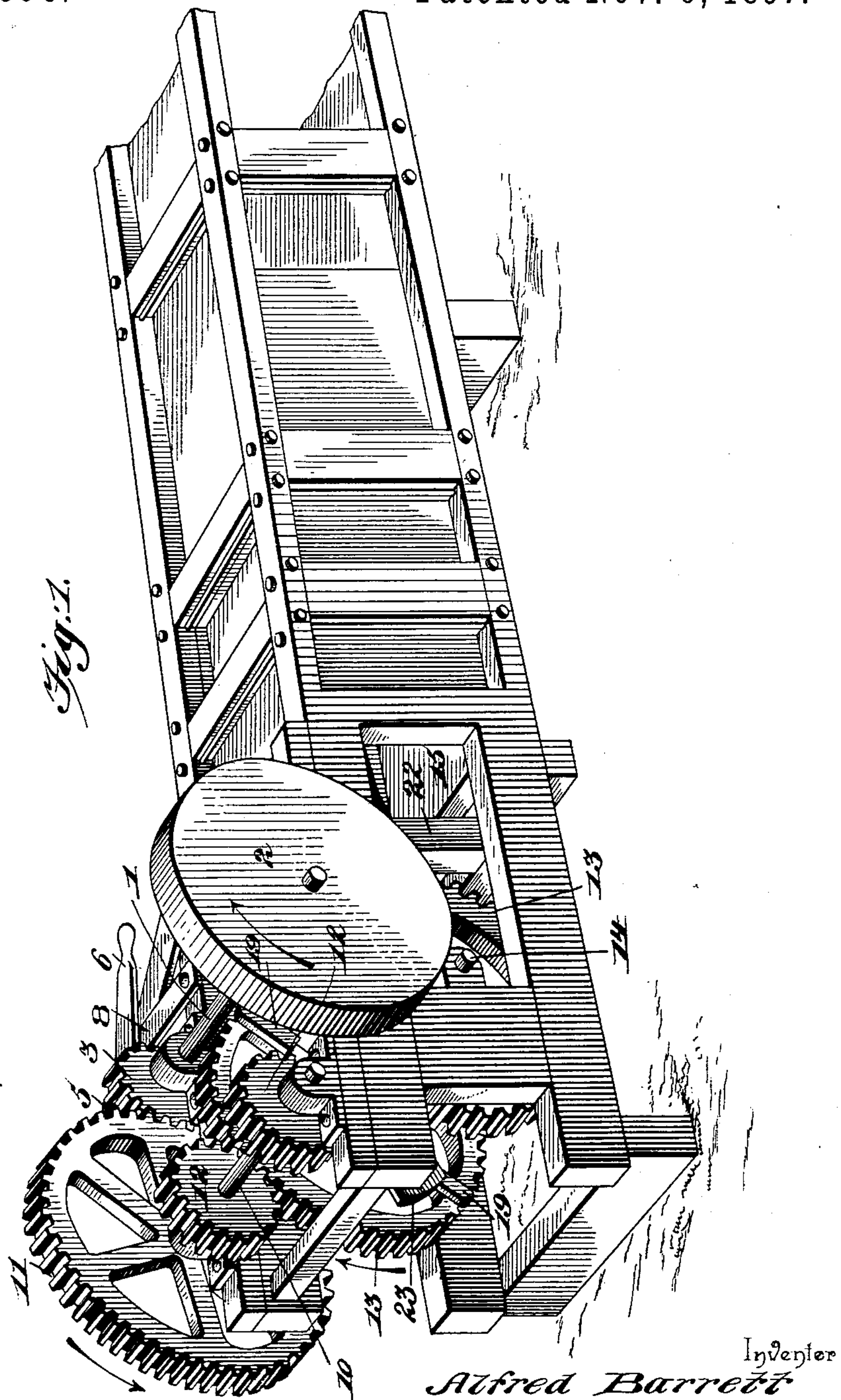
(No Model.)

2 Sheets—Sheet 1.

A. BARRETT.
BALING PRESS.

No. 593,506.

Patented Nov. 9, 1897.



Inventor

Alfred Barrett

Witnesses

H. G. Dieterich By his Attorneys,

[Signature]

Chas. Snow & Co.

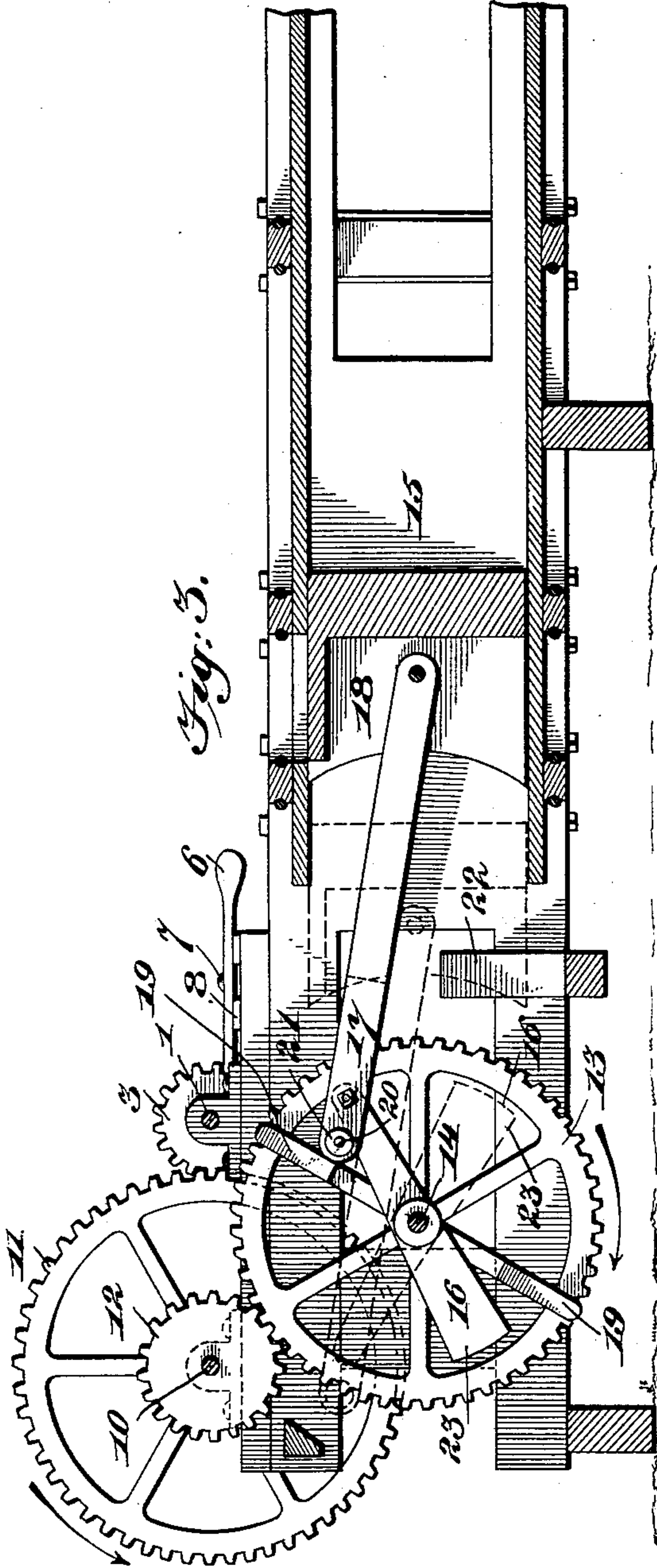
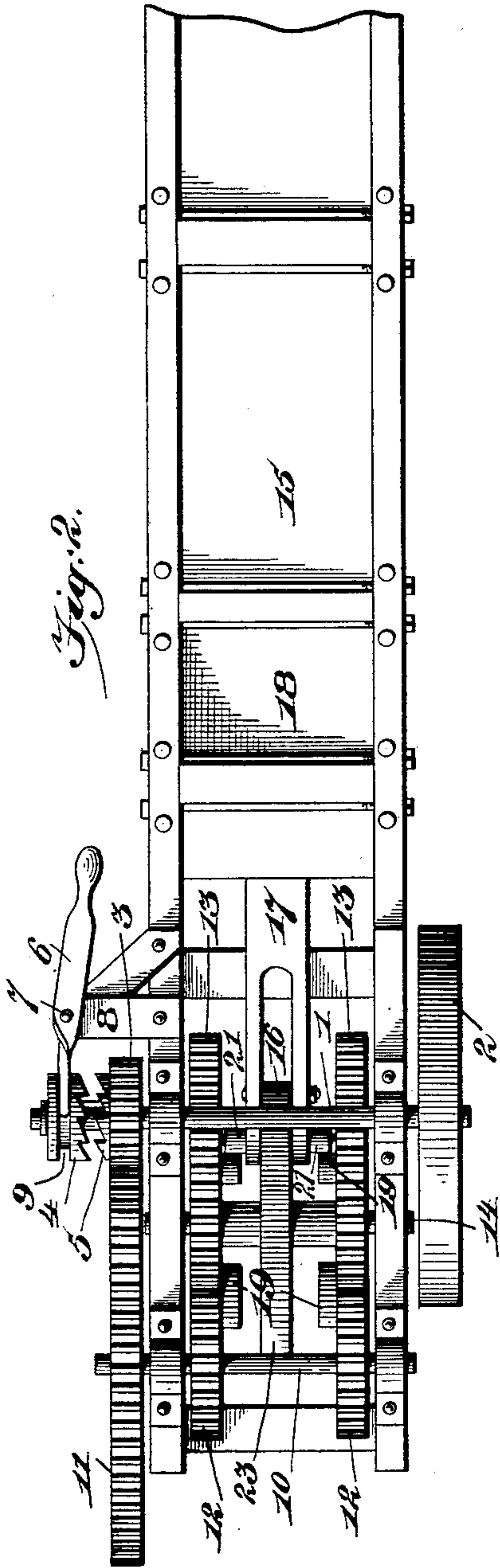
(No Model.)

2 Sheets—Sheet 2.

A. BARRETT.
BALING PRESS.

No. 593,506.

Patented Nov. 9, 1897.



Inventor

Alfred Barrett

Witnesses

H. G. Dieterich
R. E. Kyle

By his Attorneys,

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

ALFRED BARRETT, OF PUYALLUP, WASHINGTON, ASSIGNOR OF ONE-HALF
TO ALBERT BENNETT AND GEORGE EDGERTON, OF SAME PLACE.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 593,506, dated November 9, 1897.

Application filed February 4, 1897. Serial No. 621,986. (No model.)

To all whom it may concern:

Be it known that I, ALFRED BARRETT, a citizen of the United States, residing at Puyallup, in the county of Pierce and State of Washington, have invented a new and useful Baling-Press, of which the following is a specification.

My invention relates to baling-presses, and has for its object to provide a simple and efficient construction and arrangement of parts whereby the rotary motion, as of a pulley actuated through a belt, may be converted into reciprocatory movement, as of a plunger, said plunger being periodically released and allowed to rebound under the expansive force of the baled material.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a perspective view of a baling-press constructed in accordance with my invention. Fig. 2 is a plan view of the same. Fig. 3 is a longitudinal central section thereof.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

Mounted in suitable bearings upon the frame of the baling-press is a driving-shaft 1, which may be provided with a pulley 2 or its equivalent to provide for communicating rotary motion to said shaft. The driving-shaft also carries a loose pinion 3, which is adapted to be locked to the driving-shaft by means of a clutch, of which the movable member 4 is feathered upon the shaft and is adapted to engage the fixed member or clutch-face 5 on the contiguous side of the pinion. I preferably employ a shifting or clutch lever 6, pivoted, as at 7, upon a suitable bracket 8 and terminally engaging an annular groove 9 in the movable clutch member for enabling the operator to shift said clutch member with facility.

Parallel with the driving-shaft is a counter-shaft 10, carrying a gear 11, which meshes with the pinion 3, and also carrying pinions 12, which mesh with the peripheral teeth of coaxial operating-wheels 13, said operating-

wheels being mounted upon a common spindle 14, which is arranged parallel with the driving and counter shafts and respectively upon opposite sides of the longitudinal center of the baling-chamber 15.

It is obvious that different means may be employed for communicating motion from the driving-shaft to the operating-wheels, but I have found in practice that the most economical arrangement of parts is that wherein motion is communicated directly from the counter-shaft to the operating-wheels by means of the above-described pinions 12 or their equivalents meshing with the peripheral teeth of the operating-wheels.

Fulcrumed upon the spindle 14, in the interval between the operating-wheels, is a swinging arm or lever 16, terminally pivoted in a bifurcation of the pitman 17, which is in turn connected with the plunger 18, whereby the rear end of the pitman operates between the planes of the operating-wheels with its side surfaces contiguous to the plane of the inner surfaces of said wheels. The operating-wheels are provided with opposite cams or projections 19, of which one or more may be employed on each wheel according to the diameter of the wheels and the rapidity of stroke desired, and projecting laterally from the sides of the pitman are pins or studs 20, arranged in the paths, respectively, of said cams or projections, and it is by means of the engagement of these cams or projections with the pins or studs 20, which are preferably fitted with antifriction-rolls 21 to facilitate the radial movement of the pins or studs upon the faces of the cams or projections, that motion is communicated from the operating-wheels to the plunger. The cams or projections are preferably disposed with their operating-faces in radial planes, and they extend inwardly from the peripheries of the wheels to a point approximately midway between the peripheries and the axes thereof, whereby the inner portions of the cams are cut away or terminate short of the centers of the wheels. The swinging lever or arm 16 is of less length than a radius of the operating-wheels, and it is pivoted to the pitman at a point in advance of the rear end of said pitman, and hence in advance of the lateral studs

or pins carried by said pitman. The object of this is to cause the studs or pins to project beyond the end of the lever 16 when the parts are in the retracted position illustrated in dotted lines in Fig. 3, thus arranging the pins or studs in the paths of the outermost extremities of the cams or projections 19. As the operating-wheels rotate in the direction indicated by the arrow in said Fig. 3 the pitman and lever gradually approach a relatively right-angular position and then assume a position at an obtuse angle to each other whereby they again approach a position in alignment, an intermediate position being illustrated in full lines in Fig. 3. Obviously this change in the relative positions of the swinging lever and pitman causes the lateral studs or pins on the extreme rear end of the pitman to move inwardly, and hence traverse the surfaces of the cams or projections from points near their outer extremities to their inner extremities. When this relative movement of the swinging lever and pitman has proceeded sufficiently to carry the pins or studs beyond the inner cut-away ends of the cams or projections, the said pins or studs are released, and hence the plunger is free to rebound under the back pressure of the material being baled. The parts then immediately resume the retracted position illustrated in dotted lines. Arranged in the path of the pitman is a stationary stop 22 to prevent the parts from reaching a dead-center with relation to the operating-wheels, and in order to neutralize jar as far as possible and secure a smooth and regular operation of the parts the swinging lever 16 is preferably extended beyond the spindle 14 to form a counterbalancing-arm 23.

From the above description it will be seen that at the beginning of a stroke of the plunger, when the material is loosely disposed in the baling-chamber, the movement of the plunger is rapid by reason of the motion being communicated thereto from points near the perimeters of the operating-wheels, and as the tension of the material increases the point of application of pressure is moved toward the center of the operating-wheels, thus increasing the leverage and power while reducing the speed of operation.

By arranging the operating-wheels and swinging lever upon a common axis the construction of the apparatus is simplified and the free end of the pitman is held from lateral vibration. Furthermore, this arrangement

secures compactness and enables the mechanism to be constructed at a comparatively low cost.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

1. In a baling-press, the combination with a rebounding plunger, of an operating-wheel and means for communicating continuous rotary motion in a uniform direction thereto, a swinging arm mounted coaxially with said wheel, a pitman connecting the plunger with said swinging arm and fulcrumed at an intermediate point to the latter, to form a short rear arm carrying a lateral pin or stud which is adapted to move toward the axis of the arm as the plunger is advanced, and a radially-disposed cam on said wheel for engaging the pin or stud, and terminating at a distance from the axis of the wheel in excess of the distance between said pin and the axis of the wheel when the plunger is in its fully-advanced position, substantially as specified.

2. In a baling-press, the combination with a rebounding plunger, of spaced coaxial operating-wheels and means for communicating continuous motion in a uniform direction thereto, opposite radially-disposed cams on the inner faces of the operating-wheels, said cams terminating at their inner ends at an interval from the axis of said wheels, a counterbalanced lever fulcrumed between and coaxially with the operating-wheels, and a pitman connected at one end to the plunger and fulcrumed at an intermediate point to said lever, whereby it projects rearwardly beyond its fulcrum to form a short arm carrying aligned lateral pins arranged in the paths of said cams, the distance between the axis of the lever and the pins being reduced as the plunger advances, to carry them, at the limit of the forward stroke of the plunger, beyond the inner ends of the cams, and thereby release the plunger, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ALFRED BARRETT.

Witnesses:

ROBERT WILSON,
I. H. BARNARD.