

(No Model.)

3 Sheets—Sheet 1.

J. J. ALLEN.
PAPER FEEDING MACHINE.

No. 540,131.

Patented May 28, 1895.

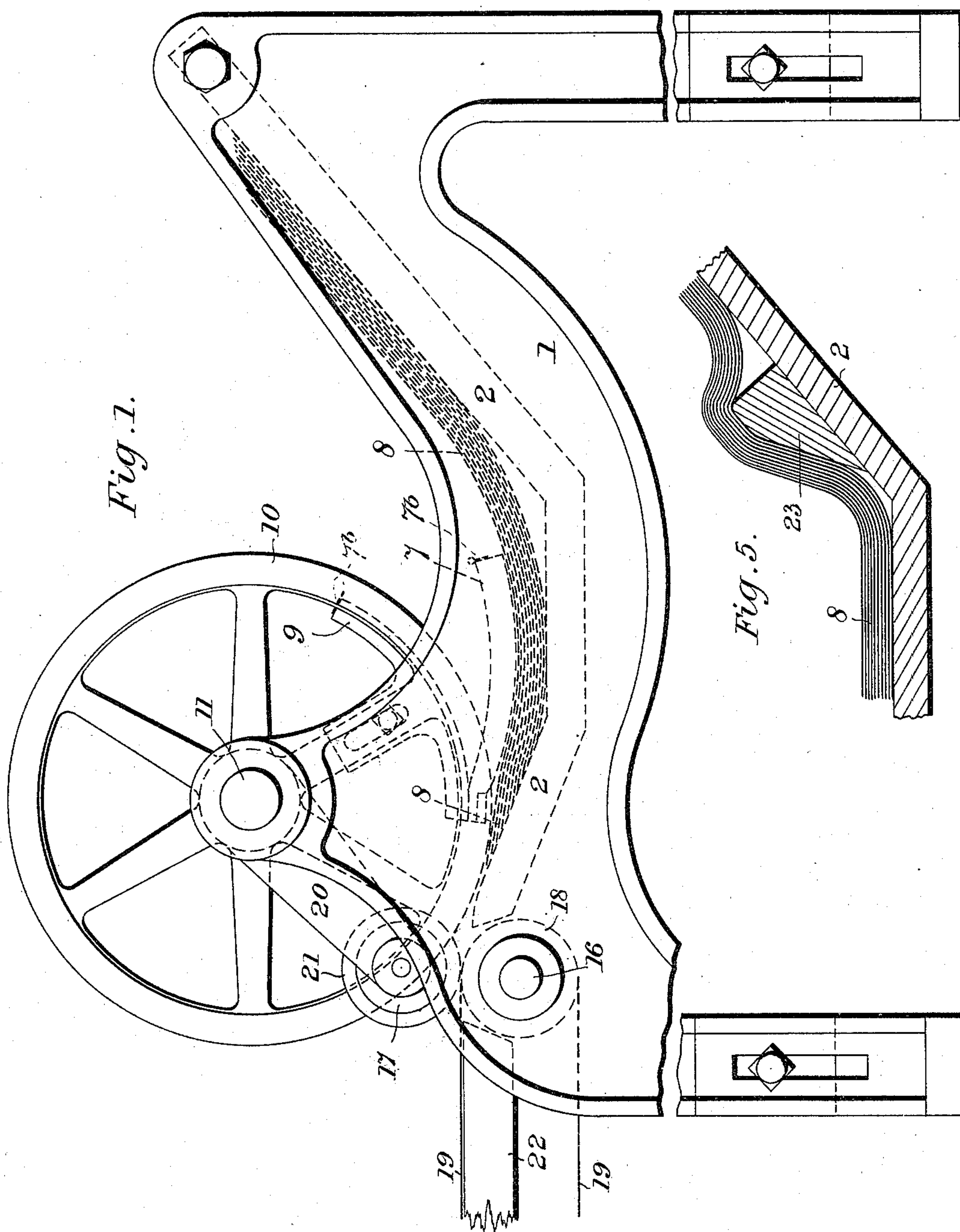


Fig. 1.

Fig. 5.

WITNESSES.

Walter Brierley
Brierley Howard

INVENTOR.

John James Allen

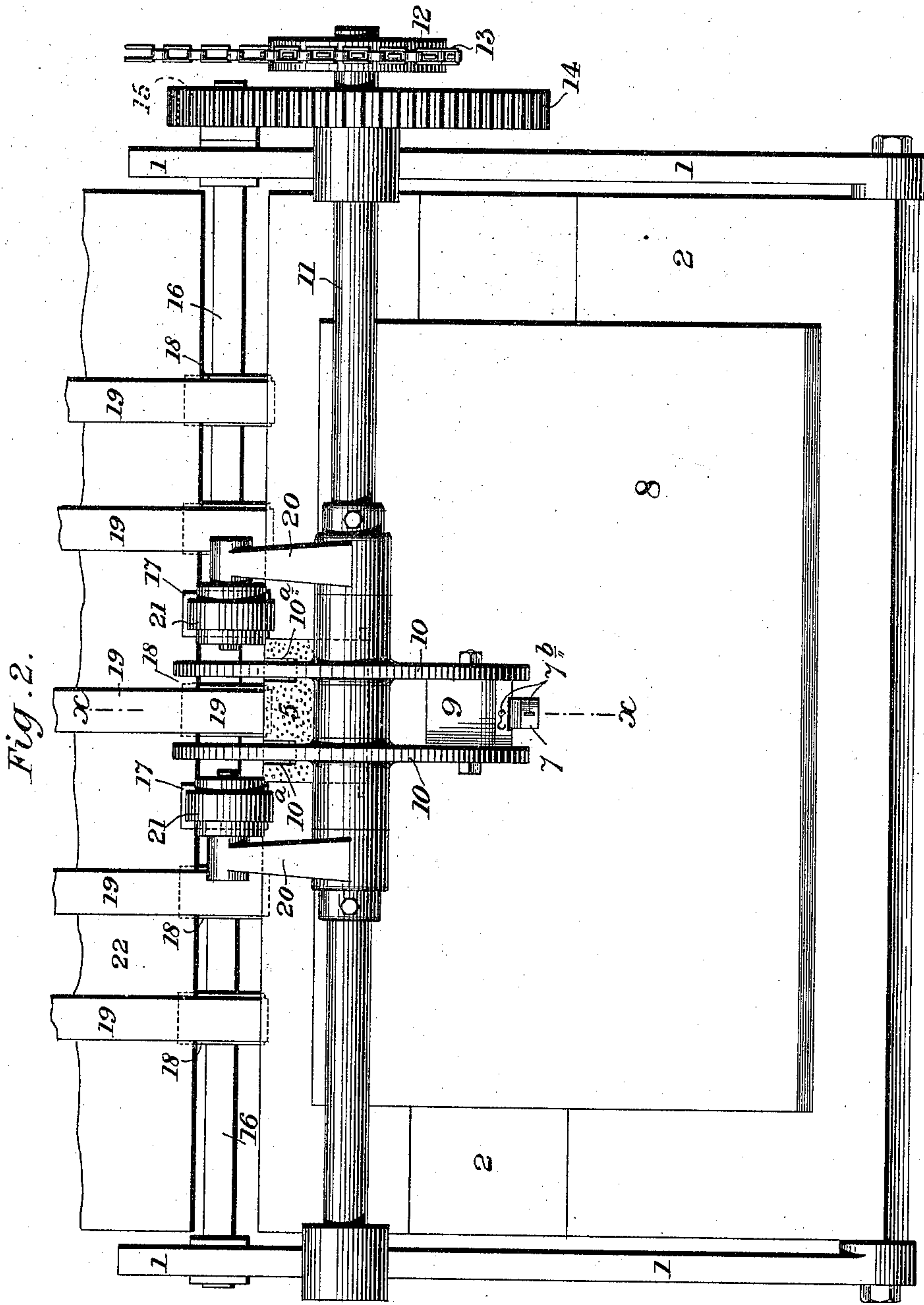
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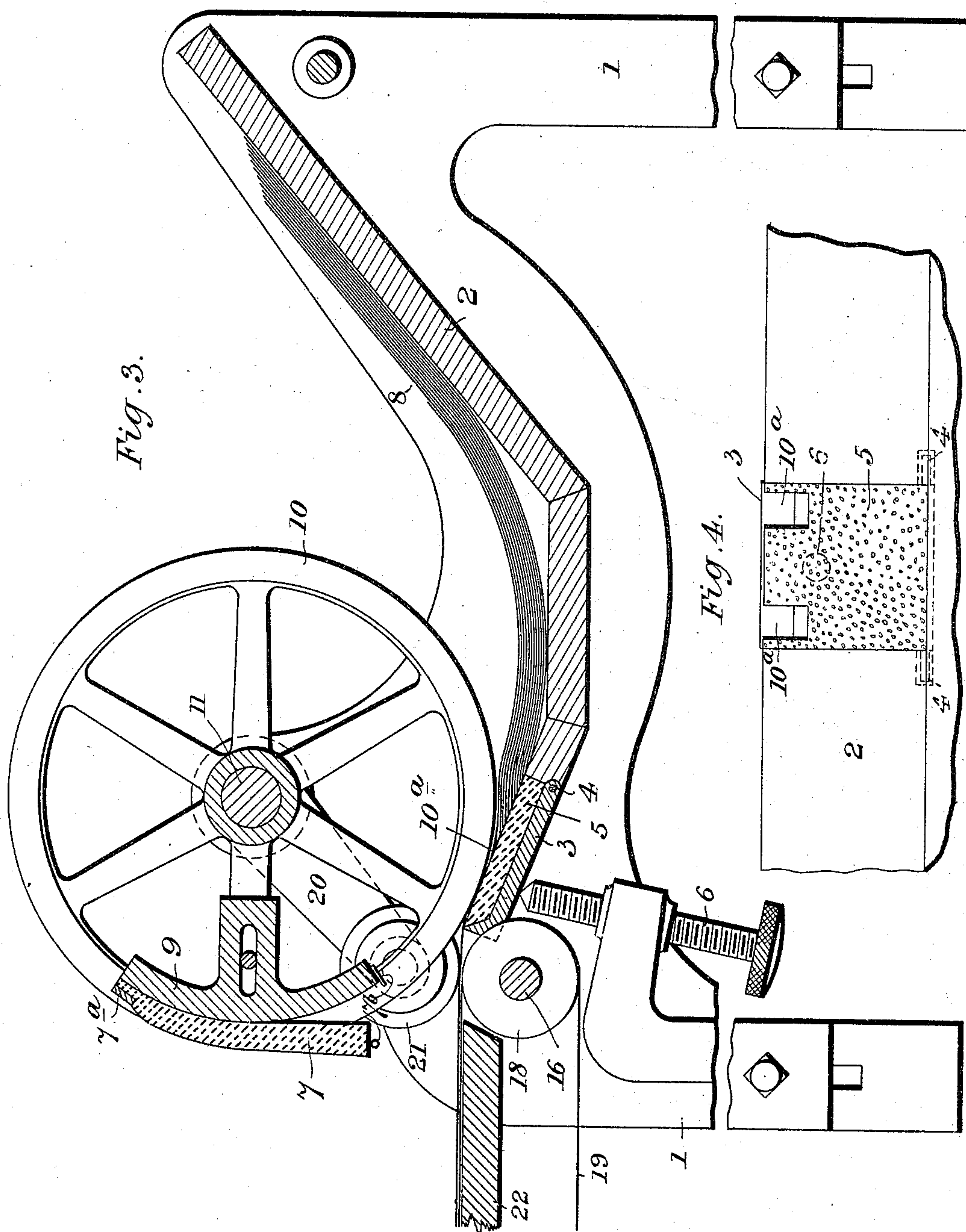
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3 Sheets—Sheet 3.

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UNITED STATES PATENT OFFICE.

JOHN JAMES ALLEN, OF BRADFORD, ENGLAND.

PAPER-FEEDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 540,131, dated May 28, 1895.

Application filed January 14, 1895. Serial No. 534,873. (No model.)

To all whom it may concern:

Be it known that I, JOHN JAMES ALLEN, a subject of Her Majesty the Queen of Great Britain, residing at Bradford, in the county of York, England, have invented certain new and useful Improvements in Apparatus for Separating and Feeding Sheets of Paper and the Like to Printing and Like Presses, of which the following is a specification.

10 My invention relates to improvements in apparatus for automatically separating and feeding or passing from a pile sheets of paper, cardboard and the like to printing, ruling, embossing, folding and like machines the ob-
15 ject being to feed and deliver the sheets or material without creases and in a perfectly smooth condition.

By the employment of an apparatus constructed according to my invention the sheets
20 are not only fed with regularity but at a greatly increased speed as compared with manual feeding while the apparatus is of extreme simplicity of construction compared with some of the automatic feeding appa-
25 ratus at present employed.

One form of apparatus constructed according to my invention is illustrated in the accompanying drawings, in which—

30 Figure 1 is an elevation of the left-hand end of the machine shown in Fig. 2, which is a plan of same on a reduced scale. Fig. 3 is a section of Fig. 2 on the line $x x$, but with the parts in a different position. Fig. 4 is a plan of a portion of the table, and Fig. 5 is a
35 view showing a modification of the table.

The apparatus it will be seen consists of side framework 1, 1 which supports an inclined or concave table 2, in the delivering end of which is a piece 3 hinged at 4, the
40 piece 3 carrying a facing piece 5 of india rubber or suitable material, the piece 3 being capable of a nice adjustment by the screw 6 beneath same. Above this are wheels 10, 10 which carry a flapper or drawing piece 7
45 of india rubber (preferably that known as sponge india rubber) one end of which is attached at 7^a to the block 9 which is bolted between the wheels 10 in such a manner that its position may be adjusted. The flapper has
50 its free end normally thrown outward from the center of the wheels 10, 10, by centrifugal force, and as the said wheels revolve, it

comes down on top of the sheets of paper with a flap, being then, by the continued rotation of the wheels 10, 10, compressed be- 55
tween the block 9, the flanges of the wheels, and the rubber piece 5, where it performs the actual operation of drawing the top sheet of paper from the pile 8.

It will be seen that the pile 8 of paper is 60
feathered, so that the ends of the sheet nearest the delivery end form a tapered or wedge shaped figure between the wheels 10, 10 the india rubber piece 5 being recessed at 10^a 10^a
Fig. 4 opposite each of the wheels 10, 10, so 65
that the rims of the latter are within the rubber and the flapper 7 presses the sheet of paper onto the rubber 5.

For some classes of paper it is advantageous to limit the play of the flapper 7 and this may 70
be effected by the hook and eye 7^b whereby the flap is readily hooked up to the block 9 so as to provide for its coming quietly into contact with the paper notwithstanding the comparative rapidity of rotation of the wheels. 75

The wheels 10, 10 are mounted on a cross shaft 11 driven by means of a chain wheel 12 and chain 13, from any convenient revolving part of the printing machine, the spur wheel 14 on shaft 11 gearing with pinion 15 on shaft 80
16, thereby giving motion to the pulleys 17, 17 and to the pulleys 18, which drive the carrying tapes 19.

On the shaft 11 are two loose arms 20, the outer ends of each, by means of a stud, carry- 85
ing a presser roller 21, which lies upon the rollers 17, and form a nip for the paper as hereinafter described.

At 22 is the ordinary table, on which are the tapes 19 carrying the sheet of paper to the 90
printing cylinder.

The action is as follows: The pile of paper is "feathered" and placed on the table 2. At each rotation of the shaft 11 the india rubber flap 7 is brought down upon the uppermost 95
sheet of the pile and runs the sheet forward under the wheels 10, 10, and by the wheels and india rubber flapper 7, slide the end of the sheet over the rubber 5 and into and between the nip of the rollers 17 and 21 which 100
draw the sheet forward and pass it by means of the tapes 19 to the printing cylinder.

For the purpose of preventing the sheets of paper or material from sliding down and press-

ing too heavily against the wheels 10 particularly where thick material is being fed I may employ a raised portion or block such as 23 secured to the table 2 across the width of same
 5 see Fig. 5 and upon which the sheets partly rest. The arrangement also enables a shorter table to be employed.

It will be evident however that a table having a humped back or a shape to correspond
 15 to the block may be employed so as to answer the same purposes.

What I claim is—

1. In an apparatus for feeding sheets of paper or the like, the combination with an inclined table, and a vertically adjustable rubber-faced piece situated at one end of the said table, wheels mounted above the said adjustable piece, a rubber flapper mounted between and carried by said wheels, means for adjusting the fixed end of said flapper relative to the axis of said wheels and means for rotating the wheels whereby the sheets of paper are drawn by the flapper between the adjustable piece and the said wheels, substantially
 25 as described.

2. In an apparatus for feeding sheets of paper or the like, the combination with a table on which the pile of paper is placed, a vertically adjustable piece situated at one end of the table and having a covering of rubber on its upper face, and a rotary flapper of soft rubber, fast at one end and free at the other and adapted to strike to one side of and to be drawn over said adjustable piece, means for varying
 35 the radius of rotation of said flapper, and means for rotating the said flapper, substantially as described.

3. In an apparatus of the character described, the combination with an inclined table, and an adjustable rubber faced piece situated at one end of the said table, wheels

mounted above the said adjustable piece, a block carried between the said wheels, and radially adjustable thereon, a rubber flapper carried by said block, and means for rotating
 45 the wheels whereby the sheets of paper are drawn by the flapper between the adjustable piece and the wheels, substantially as described.

4. In an apparatus of the character described, the combination with a table and an adjustable rubber faced piece situated at one end of the said table, wheels mounted above the said adjustable piece, a curved block in the approximate form of an arc of a circle
 55 mounted between said wheels and radially adjustable thereon, a rubber flapper also between said wheels and carried by said block, and adapted to be compressed between said adjustable piece and said wheels and said
 60 block, and means for rotating the wheels whereby the sheets of paper are drawn by the flapper between the adjustable piece and the wheels, substantially as described.

5. In an apparatus of the character described, the combination with the paper carrying table, and the adjustable rubber faced piece, of the wheels, 10, the adjustable block 9, and the flapper 7, the shaft 11, the loose
 70 arms 20, carried by the said shaft, the presser rolls 21 carried by the said arms and adapted to bear on the sheet of paper, the pulleys 17 and means for taking off the sheet, substantially as described.

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

JOHN JAMES ALLEN.

Witnesses:

WALTER BRIERLEY,
 J. BRIERLEY HOWARD.