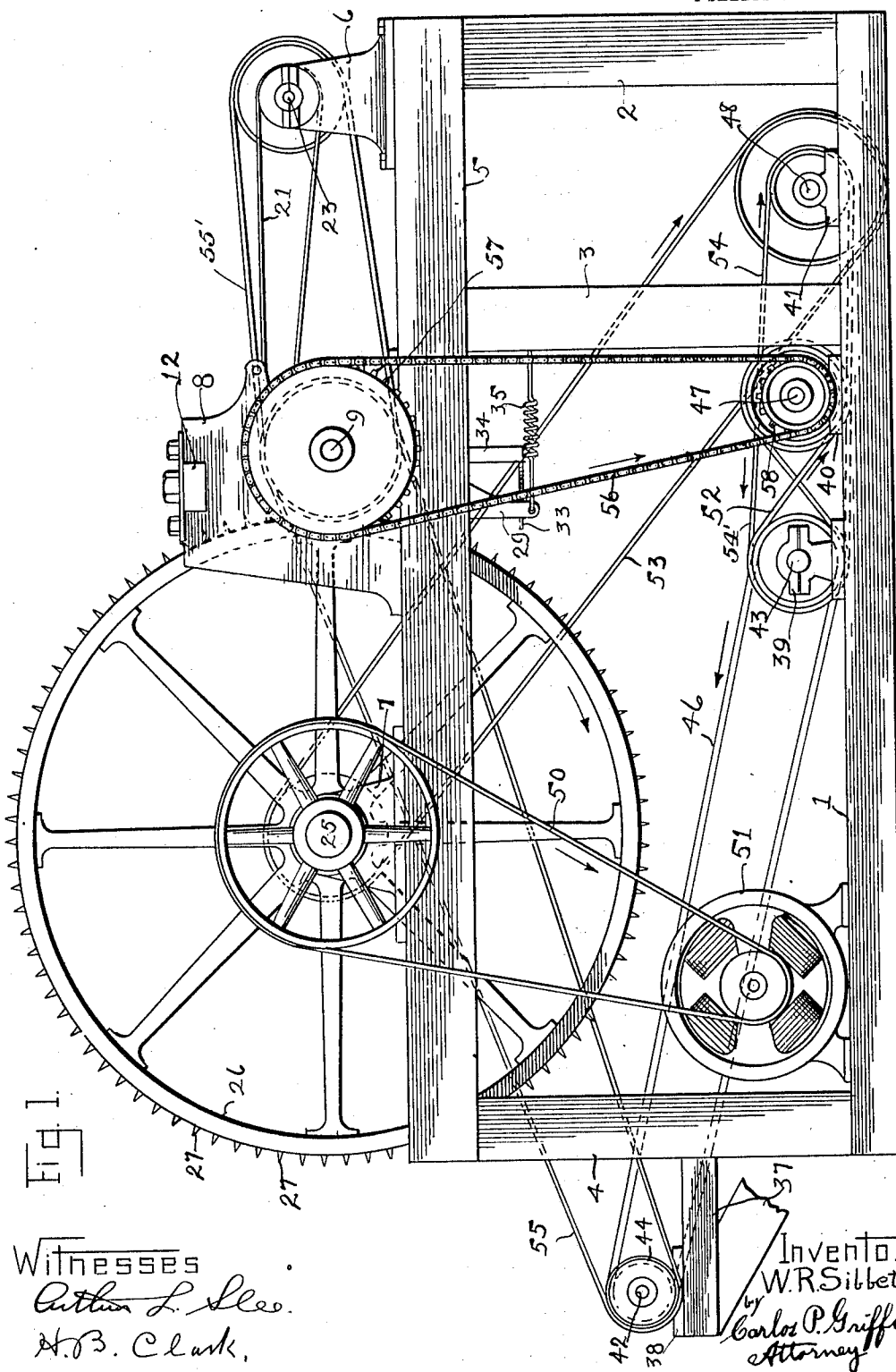


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LONG STAPLE FIBER PULLING MACHINE.
APPLICATION FILED NOV. 2, 1911.

Patented Feb. 18, 1913.

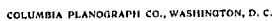
4 SHEETS-SHEET 1.

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4 SHEETS—SHEET 2.

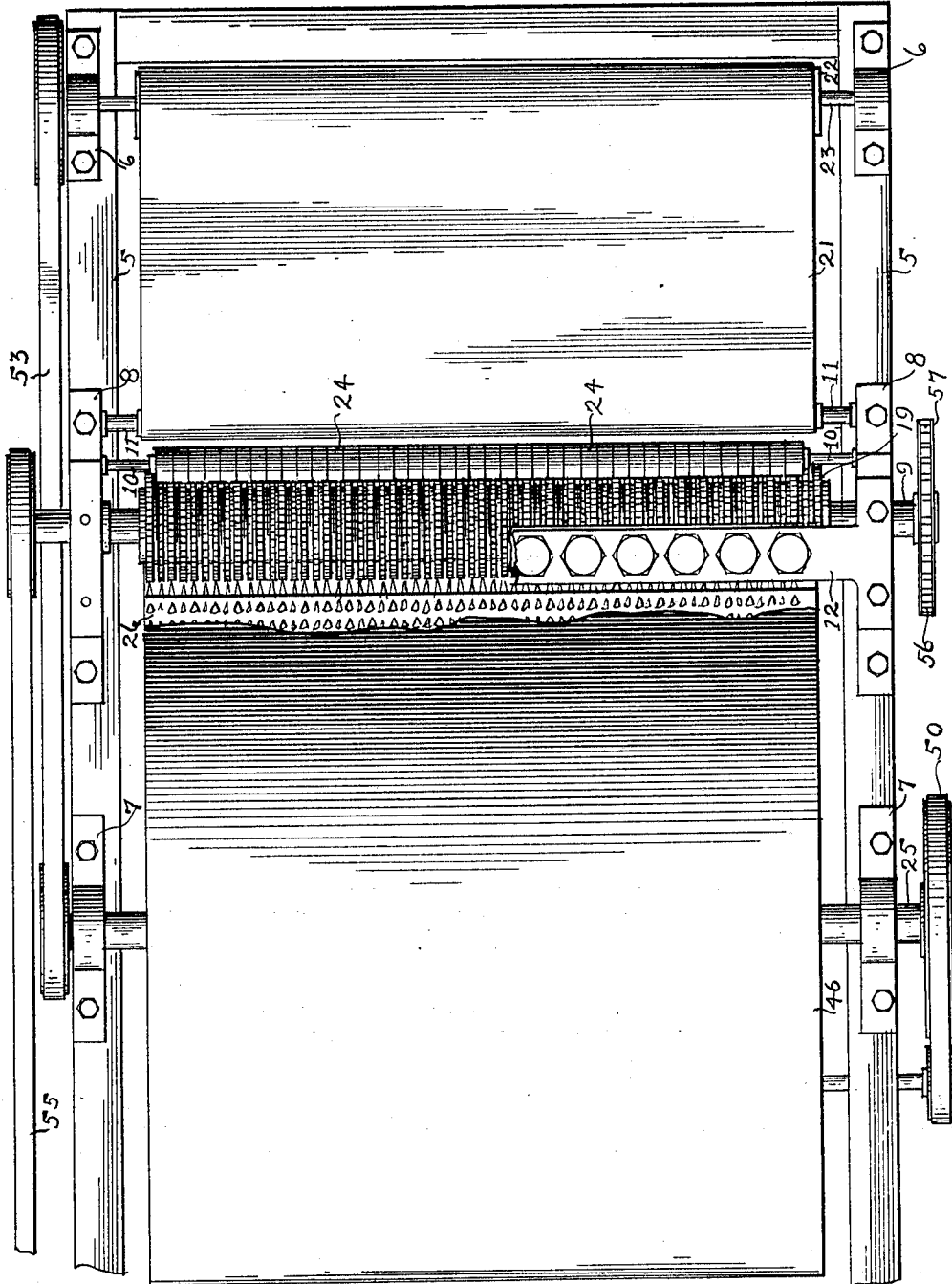


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4 SHEETS—SHEET 3.



Witnesses
 Arthur L. Lee.
 Eugene C. Brown

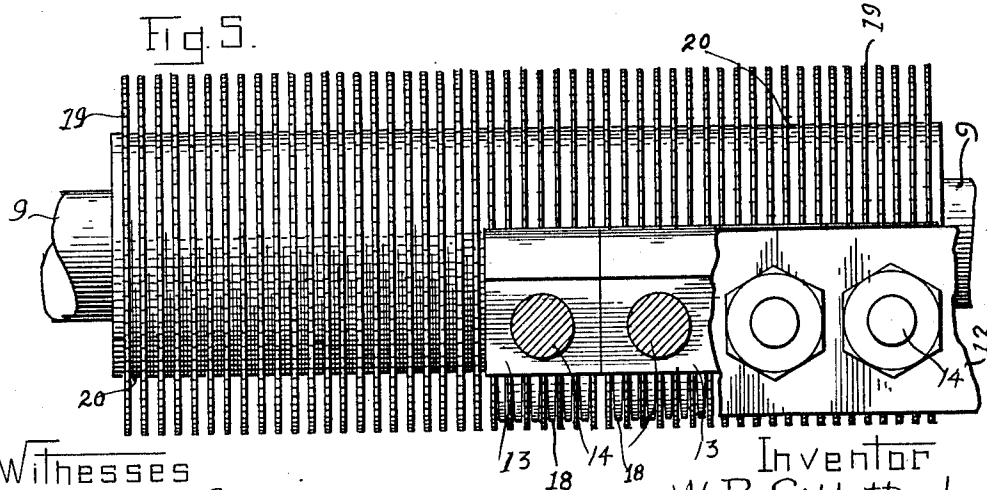
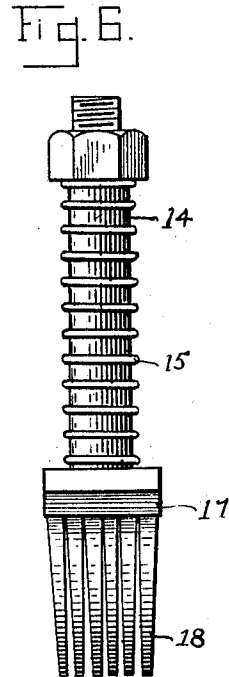
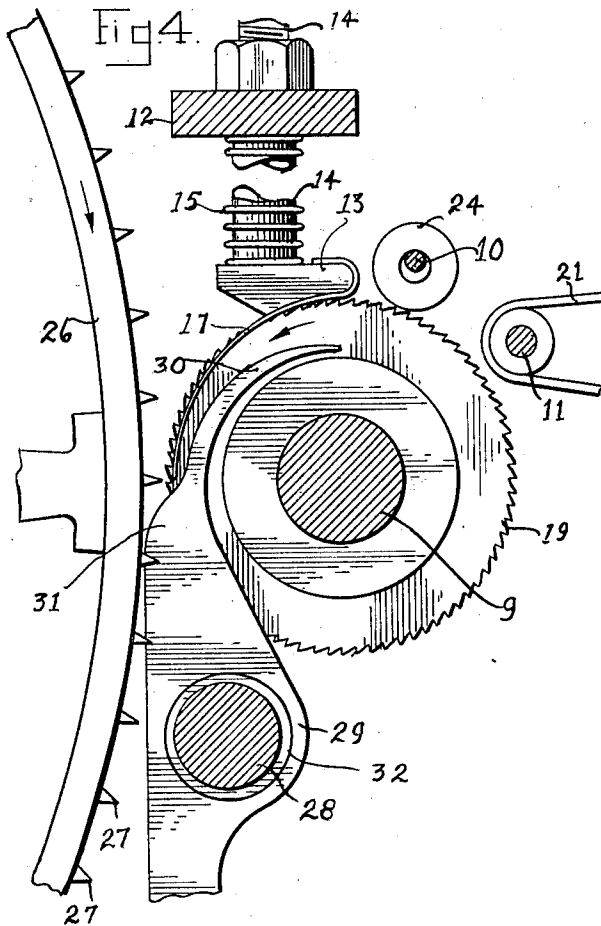
Inventor
 W.R. Sibbett by
 Carlos J. Griffin Atty.

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4 SHEETS—SHEET 4.

1,053,543.



Witnesses
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Attorney

UNITED STATES PATENT OFFICE.

WILLIAM R. SIBBETT, OF OAKLAND, CALIFORNIA.

LONG-STAPLE-FIBER-PULLING MACHINE.

1,053,543.

Specification of Letters Patent.

Patented Feb. 18, 1913.

Application filed November 2, 1911. Serial No. 658,267.

To all whom it may concern:

Be it known that I, WILLIAM RYAN SIBBETT, a citizen of the United States, residing at Seventh and Poplar streets, Oakland, in the county of Alameda and State of California, have invented a new and useful Long-Staple-Fiber-Pulling Machine, of which the following is a specification in such full and clear terms as will enable those skilled in the art to construct and use the same.

This invention relates to a machine for the production of what is known as wiping waste from cloth which is practically worthless.

It will be understood by those skilled in the art that a great deal of wiping waste is used about machines for wiping off oil and dirt. This waste is usually the scraps of all kinds from thread or cloth making establishments and is worth from 4 ¢. to 10 ¢. per pound.

It will be further understood by those skilled in the art that all sorts of clothing manufacturing establishments waste great quantities of material in the shape of small bits, which are too small to be used for anything in connection with the clothing made. These scraps of cloth are usually thrown away or sold for a nominal sum.

The principal advantage sought with this machine is to produce long thread waste from such scraps of material, or at least as long threads as possible, considering the smallness of the scraps used.

A further object of this invention is to produce a machine which will draw the threads from the cloth with as small breakage as possible, this being accomplished by means of a resilient cutting bed, against which the cloth is held while being torn apart.

In the drawings in which the same numeral of reference is applied to the same portion throughout the several views, Figure 1 is a side elevation of the complete machine. Fig. 2 is a sectional view of the complete machine. Fig. 3 is a plan view of the complete machine, and Fig. 4 is a sectional view, on a large scale, of the serrate holding disks, movable cutting bed and shredding drum. Fig. 5 is a plan view partly in section of the feeding mills, and portion of the bar supporting the presser plates thereof and two of said presser plates, and Fig. 6 is a view in elevation of

one of the toothed presser plates, the shank which supports it and the spring which holds it in contact with the feeding mills.

The machine has a base frame 1, uprights 2, 3 and 4, on which uprights are supported rails 5. Mounted upon the rails 5 are journal boxes 6 and 7, there being two of each; the former for supporting one end of the feed apron and the latter for supporting the shaft of the shredding drum. Between the boxes 6 and 7, on the rails 5, are supports 8. The supports 8 have bearings therein for shafts 9, 10 and 11. At the top, the supports 8 support a cross bar 12, which cross bar is suitably bolted thereto and carries a plurality of slidable heads 13, shanks 14 thereon passing through the bar 12. Each shank 14 has a spring 15 surrounding the same and is prevented from moving the bar on shaft 9 more than a fixed distance by means of a nut 16. Each head 13 has a spring 17 secured thereto, said spring being slotted to form a comb at 18. The shaft 9 has mounted thereon a plurality of saws or mills 19 and a plurality of washers 20, the washers spacing the saws a short distance apart.

A feed belt 21 passes over the drum 22 on the shaft 23 journaled in the boxes 6 and over the shaft 11. The saws or mills 19 are so placed as to hold the material fed thereto from moving forward unless said material is thoroughly torn apart. Rolls 24 on shaft 10 assist in feeding the material into the machine. The journal boxes 7 carry a shaft 25, which shaft supports a drum 26, of any suitable material and the drum is provided with a number of teeth 27, said teeth being closely arranged on said drum in order to tear the material fed thereto completely across the machine.

The actual machine has about 220 of the saws or mills 19 in a width of 36" but there is only a small number shown in this drawing for purposes of illustration.

Supported below the saws or mills 19 is a shaft 28, which shaft forms the support for the members 29 which form the resilient cutting bed. The members 29 are thin steel plates, having one end curved in toward the circumference of the washers 20 as shown at 30, while at 31 each member 29 is provided with a projecting hump which tends to force the material fed into the machine outwardly into the path of the teeth on the drum 26.

The members 29 are all placed upon the

shaft 28, washers or separators 32 holding said members 29 the same distance apart as the saws or mills 19 so that there is a member 29 opposite each washer or separator 20.

5 At the lower end of the member 29 there is a plate 33, said plate being suitably secured to a cross bar 34. This plate 33 is slotted so that the lower end of each member 29 works in line with the separators on the
10 shaft 9. Each member 29 is connected by means of a spring 35 to a cross bar 36, extending from the posts 3 entirely across the machine.

At the discharge end of the machine there
15 is a bracket 37 at each side of the machine, each bracket supporting a journal box 38. Each bottom rail of the machine supports journal boxes 39, 40 and 41. The boxes 38 have a shaft 42 therein and the boxes 39
20 have a shaft 43, said shaft supporting suitable cylinders 44 and 45 respectively, over which passes the discharge apron 46. The boxes 40 support a shaft 47 while the boxes 41 support a shaft 48. Each of the shafts
25 42, 43, 47, 38 and 9 are provided with suitable pulleys, while the shaft 25 is provided with two pulleys, the larger of which has a belt 50 passing thereover from a motor 51 on the base of the machine.

30 Any suitable driving mechanism for the several revoluble parts of the machine may be used. In the present instance the motor 51 has a belt 50 passing over its pulley and connected with the driving pulley of the
35 large drum 26. Also connected with the large drum is a belt 53, which belt passes around the pulley on the shaft 48. This shaft has another pulley thereon over which passes a belt 54, said belt also passing over
40 a loose pulley on the shaft 43, from which loose pulley a cross belt 52 passes around a pulley on the shaft 47. This shaft 47 is provided with another pulley and a sprocket wheel 58, which drives the mills or saws by
45 means of a sprocket chain 56, said sprocket chain preventing the saws from being rotated too rapidly.

Extending from one of the pulleys on the shaft 47 is a belt 54', which drives the belt
50 46 in such a direction as to cause the discharge from the machine on a shaft 42. This shaft 42 has another pulley thereon over which passes a belt 55, said belt 55 passing over a loose pulley on the shaft 9
55 and driving the belt 21 from a belt 55'.

The particular driving mechanism, however, forms no part of the invention and is simply inserted for purposes of illustration and any other arrangement of belts
30 may be used, as deemed necessary.

The mill teeth and the teeth on the shredding drum move in the same direction, but the mill teeth move very much slower than the teeth on the drum and hence hold the
65 goods passing therethrough until a great

number of teeth on the shredding drum have passed any given position thereof, thus completely pulling it apart.

The operation of the machine is as follows: The motor is started and the shredding drum moves in the direction indicated by the arrow, whereupon the feed belt 21 moves forward and delivers the small bits of cloth thrown thereupon to the feed rolls 10 and mills 19. It will be observed that the mills 19 have their teeth facing in such a direction as to prevent the cloth from being pulled therefrom by the shredding cylinder. As the cloth is carried under the feed rolls 24 and under the stiff springs 17
70 and combs 18, it is brought into contact with the points of the shredding cylinder. The projections 31 on the members 29 hold the cloth against the teeth of the shredding cylinder. Since the members 29 are only
75 held in place by means of the springs 35, pressure against the bits of small cloth causes said members to move away from the shredding cylinder, thus pulling the cloth apart thread by thread, and not tearing it as
80 would happen if the shredding cylinder operated against a fixed bed.

It is to be understood that the term saws and the term mills, as used in this specification, refers to disks, which are serrated
95 in the manner of the teeth on a hand rip saw, although said serrated disks are not for the purpose of cutting at all but are merely for holding the goods while the shredding drum pulls the threads therefrom.
100

It is to be further observed that while this machine has been especially made for the production of wiping waste that it is possible to produce long staple cotton and wool from cloth cuttings with a machine having a resilient cutting bed properly adjusted and the speed of the shredding drum properly adjusted to the product to be made.
105

It is thus possible to produce from a great assortment of cloth, a product which can
110 be made into yarns for weaving the grades of fabric suited thereto.

Having thus described my invention what I claim as new and desire to secure by Letters Patent of the United States, is as follows:
115

1. In a machine for the production of waste, a plurality of revoluble toothed feeding mills, a feed roller thereover, springs bearing upon said mills to hold materials
120 fed thereto in close contact therewith, a revoluble toothed cylinder and a flexible bed, over which the materials to be torn apart, are fed to said pin cylinder, substantially as described.
125

2. In a machine for the production of long staple fiber, a plurality of revoluble toothed feeding mills, a feed roller thereover, springs bearing upon said mills to hold materials
130 fed thereto in contact therewith, a revolu-

ble toothed cylinder having a line of teeth opposite each mill and a flexible bed comprising a plurality of plates, one lying between each pair of mills, over which the material to be torn apart is fed to the toothed cylinder, substantially as described.

3. In a machine for the production of long staple fiber, a plurality of toothed feeding mills, a shaft upon which said mills are assembled, means to rotate said shaft, a feed roller to hold materials fed to the machine in close contact with the mills, a revoluble pin cylinder having a row of teeth in the plane of each mill, pivoted plates in the planes between the mills, springs to give a certain flexibility to said plates and means to discharge the fiber produced away from the pin cylinder, substantially as described.

4. In a machine for the production of long staple fiber from cloth, revoluble feeding and holding mills, a plurality of feed rolls bearing upon said mills, a plurality of movable heads, springs connected with said heads and bearing upon the mills to hold the materials passing thereover in contact therewith, a pin cylinder revoluble closely

adjacent the mills and a flexible bed against which the materials fed to said machine are pulled apart by said pin cylinder, substantially as described.

5. In a machine for the production of long staple fiber from cloth, a feed belt, a plurality of revoluble toothed feeding mills adjacent said belt, rollers bearing upon said mills, springs bearing upon said mills to hold materials fed thereto in contact therewith, a plurality of curved plates, one of which lies between each pair of mills, springs to hold said curved plates resiliently in a given position, a pin cylinder revoluble adjacent said mills and said curved plates, and means to discharge the materials pulled apart by said pin cylinder from the machine, substantially as described.

In testimony whereof I have hereunto set my hand this 21st day of October A. D. 1911, in the presence of the two subscribed witnesses.

WILLIAM R. SIBBETT.

Witnesses:

C. P. GRIFFIN,

HENRY B. LISTER.