Sheet 1. 3 Sheets.

8191X

R. Daniels.
Shearing Mach.

Patented May 13, 1834

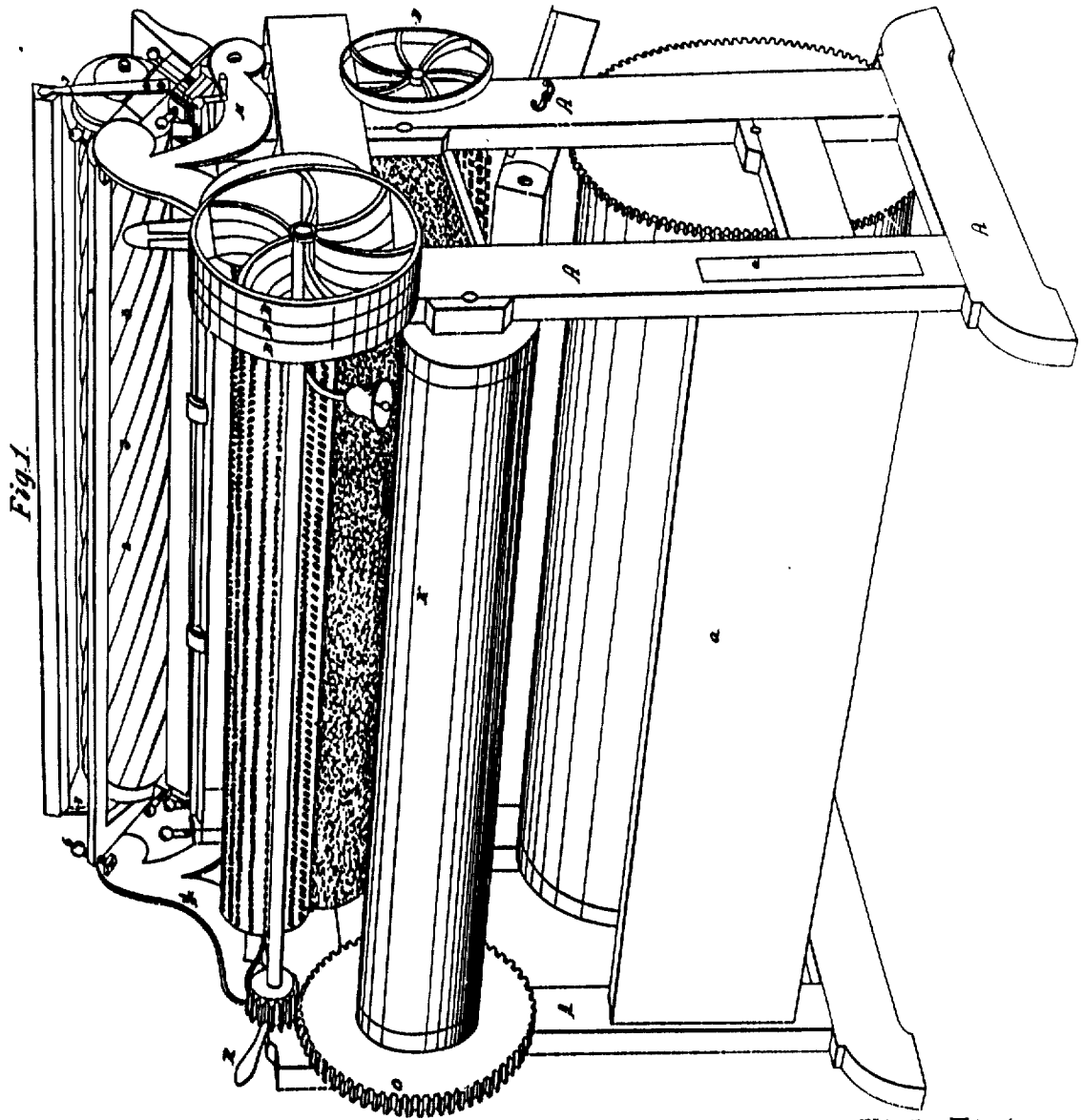


Fig. 1.

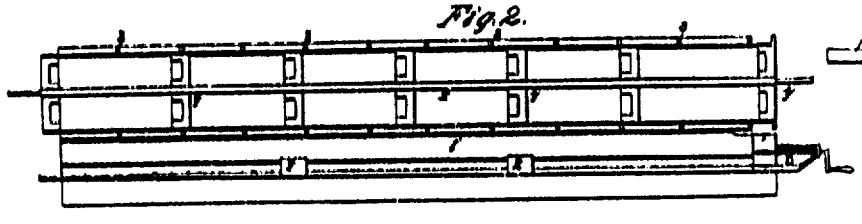


Fig. 2.



Fig. 3. Fig. 4.

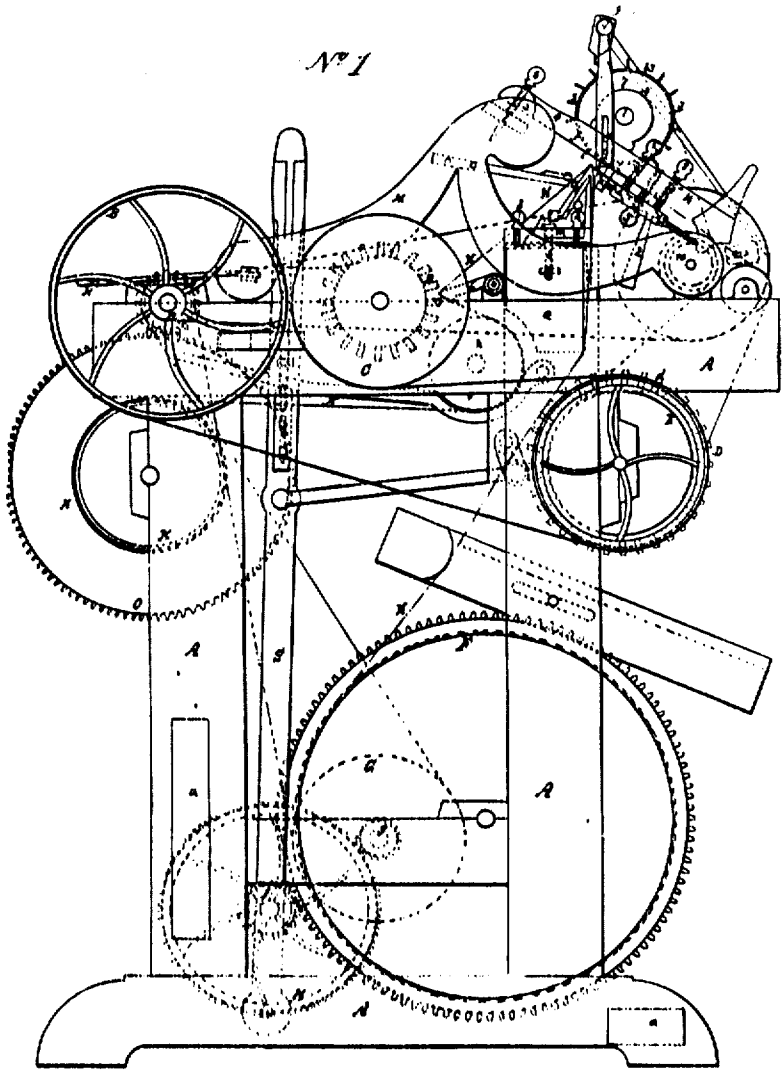
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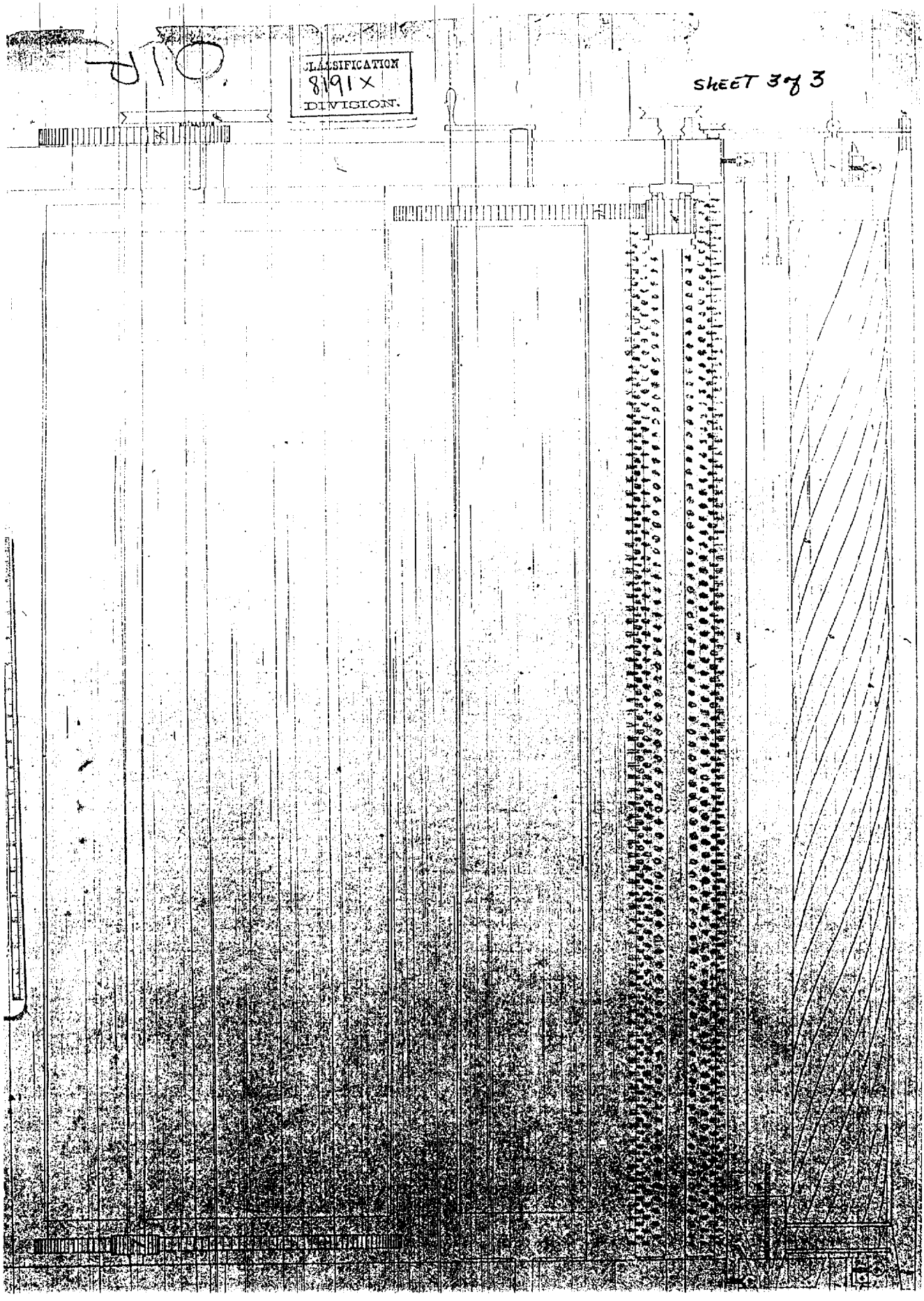
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CLASSIFICATION
8191X
DIVISION.



5/13/1834 8191X

May 13. 1834 92

Reuben Daniels
Letters Patent

The Schedule referred to in these Letters Patent and making part of the same containing a description in the words of the said Reuben Daniels himself of his improvement "in Shearing Machines for Shearing woolen cloths" for which Letters Patent were granted dated the 13th day of May 1834 which Letters Patent being hereby cancelled on account of a defective specification. To all to whom these presents shall come.

Be it known that I Reuben Daniels of Westfield in the County of Windsor and State of Vermont (Machinist) have invented made and applied to use a new and useful improvement in Shearing Machines for shearing woolen & other cloths an unperfect description & specification whereof has been heretofore given a copy whereof is annexed to Letters patent heretofore granted to me bearing date the thirteenth day of May in the year of our Lord one thousand eight hundred and thirty four and now surrendered as inoperative and which invention & improvement I do hereby accurately & perfectly describe. For the better understanding of my said invention & improvement drawings of a Machine wherein my said improvement is made and applied are hereunto annexed numbered 1. 2. 3. as part of this specification. Drawing number one is an end view showing both ends of the Machine. Drawing numbered two is a perspective view of the machine. Drawing number three is a front view of the machine. In Drawing N°1 Fig. 1 represents the bearings on which the reciprocating Cylindrical cutter turns. Fig. 2. is the cast iron standard to which the large brass is screwed as fastener. Figs 3,3,3,3. are represent the spiral cut-

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5/13/1834 8191X

28

ting blades attached to the revolving cylinder Fig 4.4. represent the cast iron frame to which the revolving cylindrical cutter & ledger blade are attached Figs 5.5.5. &c. are screws to elevate or depress the ledger blade so as to bring it to its proper position in relation to the revolving spiral cutting blades. Fig. 6. represents screws to depress or elevate the iron frame 4.4. so as to regulate the closeness of shearing the nap of the cloth. Fig 7. represents stands to support the gudgeons of the roller. Fig. 9. represents the bearings of the roller. Fig 10. represents swivels on which the iron frame which supports the rotary cutter and ledger blade turns. A.A.A.A.A.A. represent the frame of the machine. B. represents the driving pulleys on the main shaft. C. represents the pulley on the brush for raising the nap. D. represents the pulley on the brush for laying the nap. E. represents the pulley which drives the revolving cylindrical cutter. F represents the gear on the cloth drum on the right hand end. G. is a cone pulley connected with the small gear F. at the left hand end to regulate the feed of the cloth through the machine. H. is a gear wheel at the left hand end on the rag shaft which meshes into the small gear G. I. is a shipper to throw the gear F out of the gear H and also to throw the friction band off from the friction wheel K. also to throw the cloth off from the brush for laying the nap while the cloth is running back. K is a cloth roller from which the cloth is drawn off in the process of shearing. L. is a rest to bear the cloth against the brush for raising the nap. M is a screw made of cast iron attached to the upper part of the frame A.A.A.A. — N.N.N.N.N. shows the course of the cloth in passing the shears. O is a gear wheel on the cloth roll at the end on the left hand meshing into the gear wheel F. P. is roll the cloth back

5/13/1834 8191X

back after it has passed the shears. This operation is performed by moving the gear P. by means of the lever R. placed in a groove running around the gear P. at the left hand end which gear P. runs loose on the driving shaft while the cloth is in the process of shearing, & the the whole roll has passed the shears, the bell gives an alarm and the attendant moves the lever R. from right to left and the gear P. connects with the stationary ring on the driving shaft, and the motion of the cloth is reversed and the cloth again wound around the roll in readiness to be sheared a second time. During the process of shearing the motion of the cloth in passing the shears turns the cloth roll and the gear O being meshed into the gear P. the latter gear P. turns like a loose pulley on the driving shaft. a. a. a. are ends of girts that go lengthwise of the frames C. is the brush for raising the nap d. is the brush for laying the nap. b. b. b. are screws to adjust the rests M. & e. k is a roll to tighten the cloth. L. is a flanch on the roll M. to receive the screw b. In drawings numbered N° 3. the same letters & figures represent the same parts as in drawing numbered one. In drawing N° 3 m. n. n. is a support to receive the screw A which passing through the nut p. and being turned by the crank r moves the slide rest e. back and forward, on the other rest m. The several drawings N^os 1 & 3 and fig 1 in N° 2 are upon a scale of three inches to a foot. The machines represented in the drawings are adapted for shearing cloth from end to end but the form, construction, proportions and materials thereof may be some what varied at the discretion of the machinist and the construction and form of machines adapted for shearing from list to list will of course be somewhat different. but com-

formable

formable to those now in use for that purpose except as necessarily varied or altered by my said improvement, but it is not intended particularly or minutely to describe all or any of the machines in which my said improvement is made or may be used or to which it may be applied, further than to shew in what and wherein my said improvement consists and the use and application thereof. That part of my improvement herein after described which consists in the shearing rest for leaving the listing or selvage is of course not to be used in the machines for shearing from list to list. One part of my said improvement consists in the construction & use of the peculiarly constructed rotary cylindrical cutter herein described which is constructed as follows. The axis is a metallic bar of cast steel or other metal about one inch in diameter of sufficient hardness for bearings and of a length proportional to the length of the shears or rotary cutter proposed to be made. It is represented by y. in fig. N°2. in drawing N° 2. to said metallic wheels or heads of the diameter of the inside of the cylinder to be formed are to be prepared with holes in the centres through which the metallic bar aforesaid is to be fixed, which holes are to be made so as closely to fit to the bar and which wheels are delivered or fastened in their proper places to the said bar and said wheels or heads should be about one fourth of an inch in thickness and should have journals or bushes at the centre of sufficient strength to support them, and at the circumference should have flanches about one fourth of an inch thick and about three fourths of an inch broad. These wheels may be of brass or other metal but brass is deemed best. They are represented by y. y. y. in fig 2. in drawing N° 2. Spiders with arms may be used instead of those solid wheels, but the solid

wheels

wheels are preferred on account of their superior firmness and stiffness in proportion to their weight. The number of these metallic heads, wheels or spiders ought to be such as that they may be about ten or twelve inches apart from each other and of course must be more or less according to the length of the cylinder to be formed.

The number however may be somewhat varied at discretion having regard to the firmness of the cylinder to be formed. One of these heads, wheels or spiders is to be placed at each end of the cylinder and before the metallic sheets hereinafter mentioned are united to form the periphery of the cylinder one of these heads, wheels or spiders should be first placed where the sheets are united. On these heads, wheels or spiders a periphery made from sheets of tin copper or other suitable metal bent & made into the form of a cylinder with edges lapping over each other firmly soldered or fastened together so that the inner surface may conform exactly to the periphery of said heads wheels or to the rims of the spiders, is to be soldered or fastened firmly. Small strips of tin or other suitable metallic plate of about one half an inch in width having one of their edges bent up at right angles to the rest of about one eighth of an inch are to be firmly soldered or fastened by the widest part around the periphery of the cylinder thus formed, specially like the blades of the rotary cutter now in use. The number of these strips is to be equal to the number of the cutting blades to be used, which may be from ten to twenty according to the diameter of the cylinder. The diameter of the cylinder may be from three to five inches or more. The back or even side of the cutting blades are to be soldered to the outside of the bent or upright edges of the strips of tin or other metal soldered or fastened

5/13/1834 B191X

tenge to the cylinder as aforesaid, and the bottom or lower part of the front or steel side is to be soldered to the cylinder, a small body of solder being left in front to brace the blade of the cutter. Rotary cylindrical cutters constructed in this manner may be used for all purposes of shearing cloth for which the rotary cutter now in use is used. The cutting blades are similar to those now in the rotary cutter commonly used. another part of my improvement and which is used only in shearing cloth from end to end consists in a double metallic rest or support, the upper part whereof is moveable in the plane of the metallic support or rest now commonly used under near the longer blade to hold the cloth firmly in contact with the rotary cutters longer blade during the process of shearing. The under part of the metallic support or rest is made nearly like that now in use excepting pieces of iron or other metal screwed on to keep the moveable rest in its proper place marked x. x. in Fig. 2. of Drawing N° 2. Above this is a moveable rest of cast iron brass or other suitable metal marked i. in said last mentioned figure adapted and fitted to the rest or support beneath so that by turning a screw marked O. in the last named figure or by a lever or gearing the sliding rest may be made to move or slide upon the rest or support beneath it backwards or forwards so as to be accommodated to the width of the cloth in such manner as to permit the listing or selvage at one end of the rest to drop down from under the blades of the rotary cutter without being sheared, at the other end the listing or selvage is prevented by being allowed to pass beyond the blades of the rotary cutter. The moveable rest may be made in pieces of heavy metal so as to save the listing of cloths varying in width by moving

ing the sliding rest from right to left & left to right as occasion may require. The form of the moveable rest is also shown by an end view in figures 3 & 4 in Drawing numbered two. In the construction of the rotary cutter instead of a metallic sheet or sheets, a hollow cylinder may be cast from brass or other suitable metal & such strips of tin or other metal may be soldered thereon as aforesaid, and the blades may be sharpened thereto as aforesaid but the metallic plate or plates is deemed preferable.

The sliding rest laps over the under rest at the top as represented in Figs 3 & 4 in Drawing N° 2. so as to present an uniform surface for the cloth to slide & run. Although I have described the machinery and apparatus of the whole of a shearing machine, yet it is to be understood that what I claim, and although I claim as new & as my invention & improvement is the construction of the rotary cutter with heads wheels or spindles and a metallic sheet or sheets as aforesaid, or of cast metal as aforesaid, with the blades soldered thereto as aforesaid, and the use of rotary cutters so constructed & made in machines for the purpose of shearing woolen and other cloths either from end to end or from side to side, and the construction & use of the sliding rest aforesaid, lapping over as aforesaid, in the machines for shearing cloth from end to end for the purpose of causing the cutting or shearing

Witness
Charles Evans
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Drawing

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