

(No Model.)

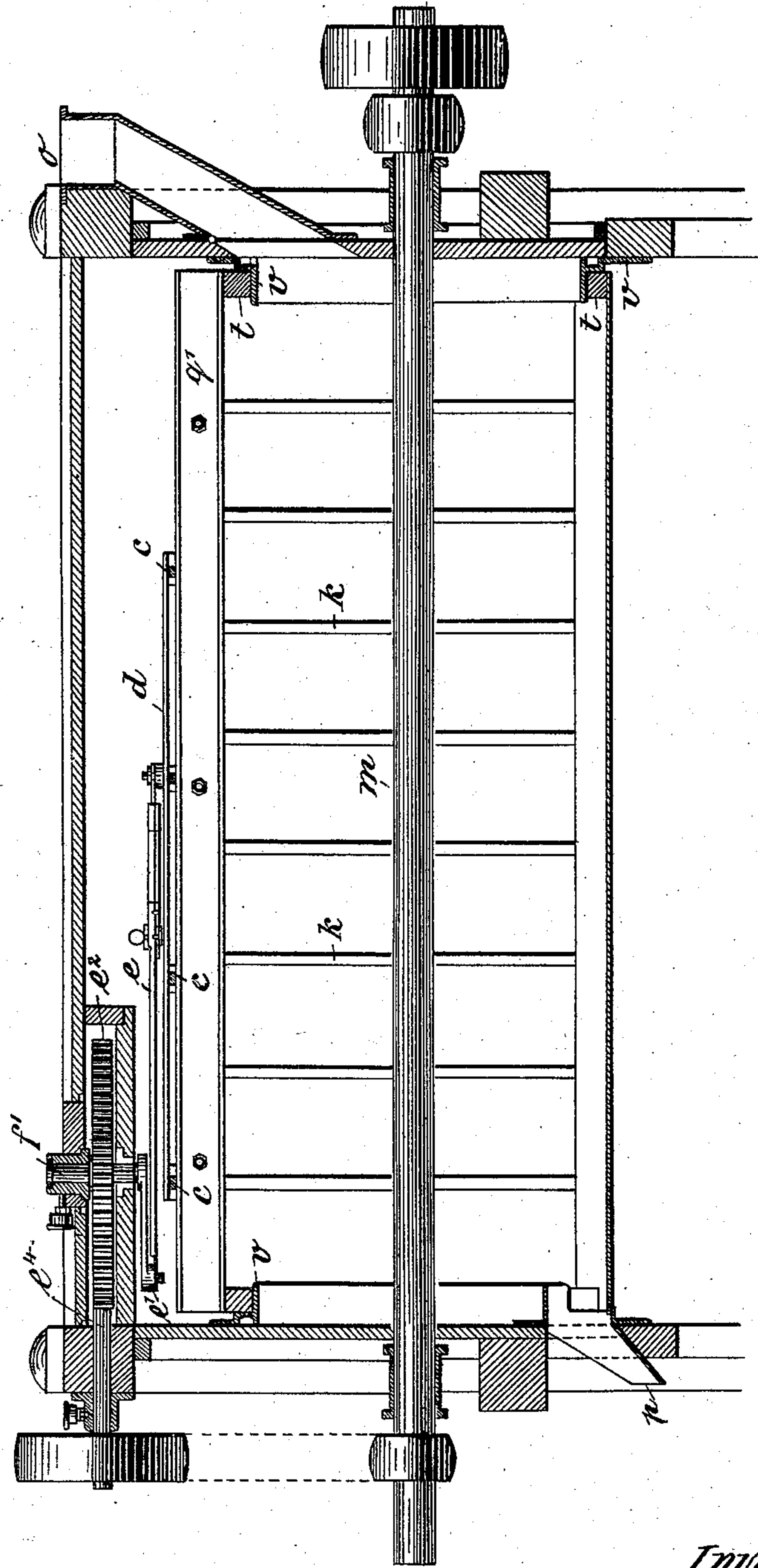
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H. SECK.  
BOLTING MACHINE.

No. 575,992.

Patented Jan. 26, 1897.

Fig. 1.



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Fig. 2.

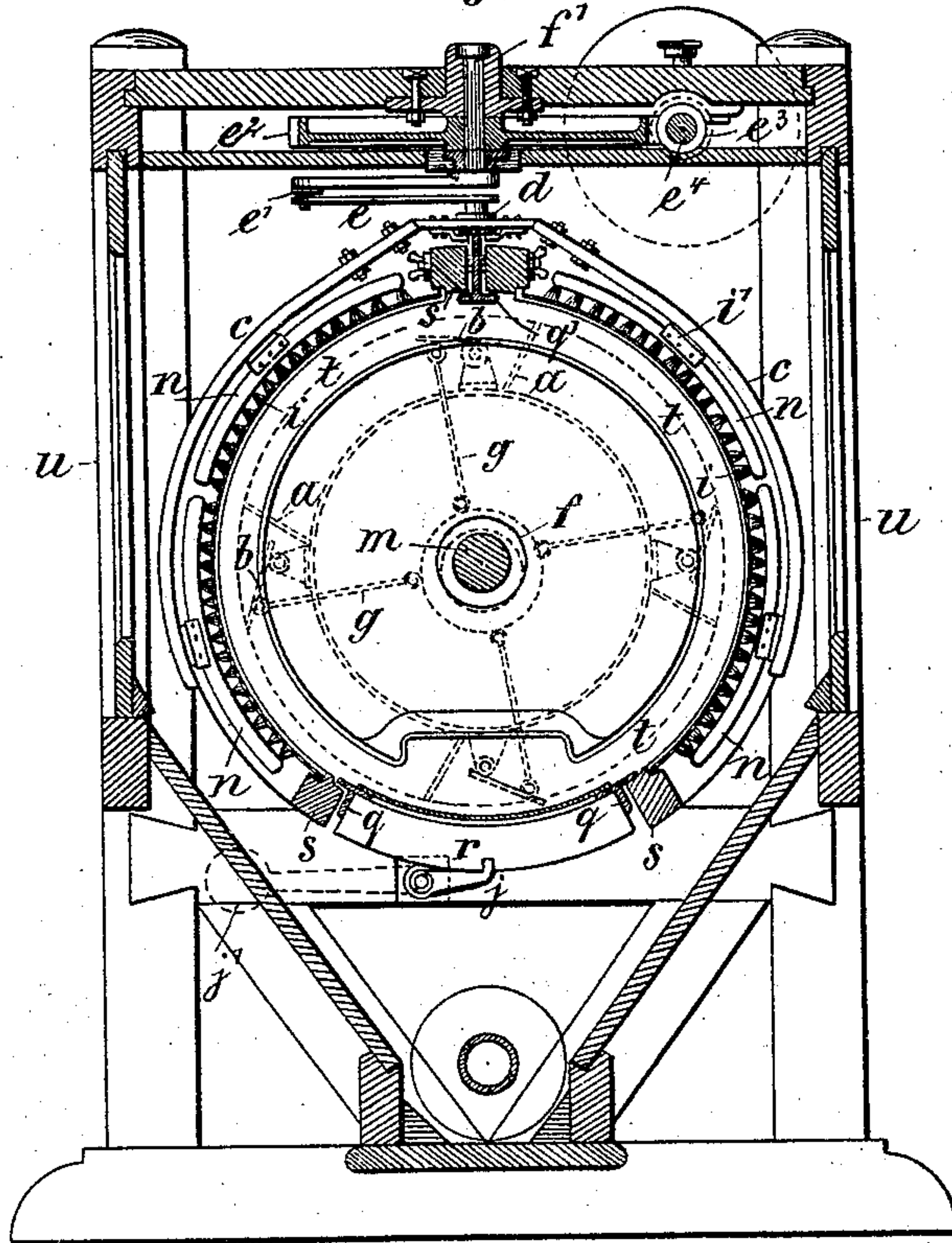
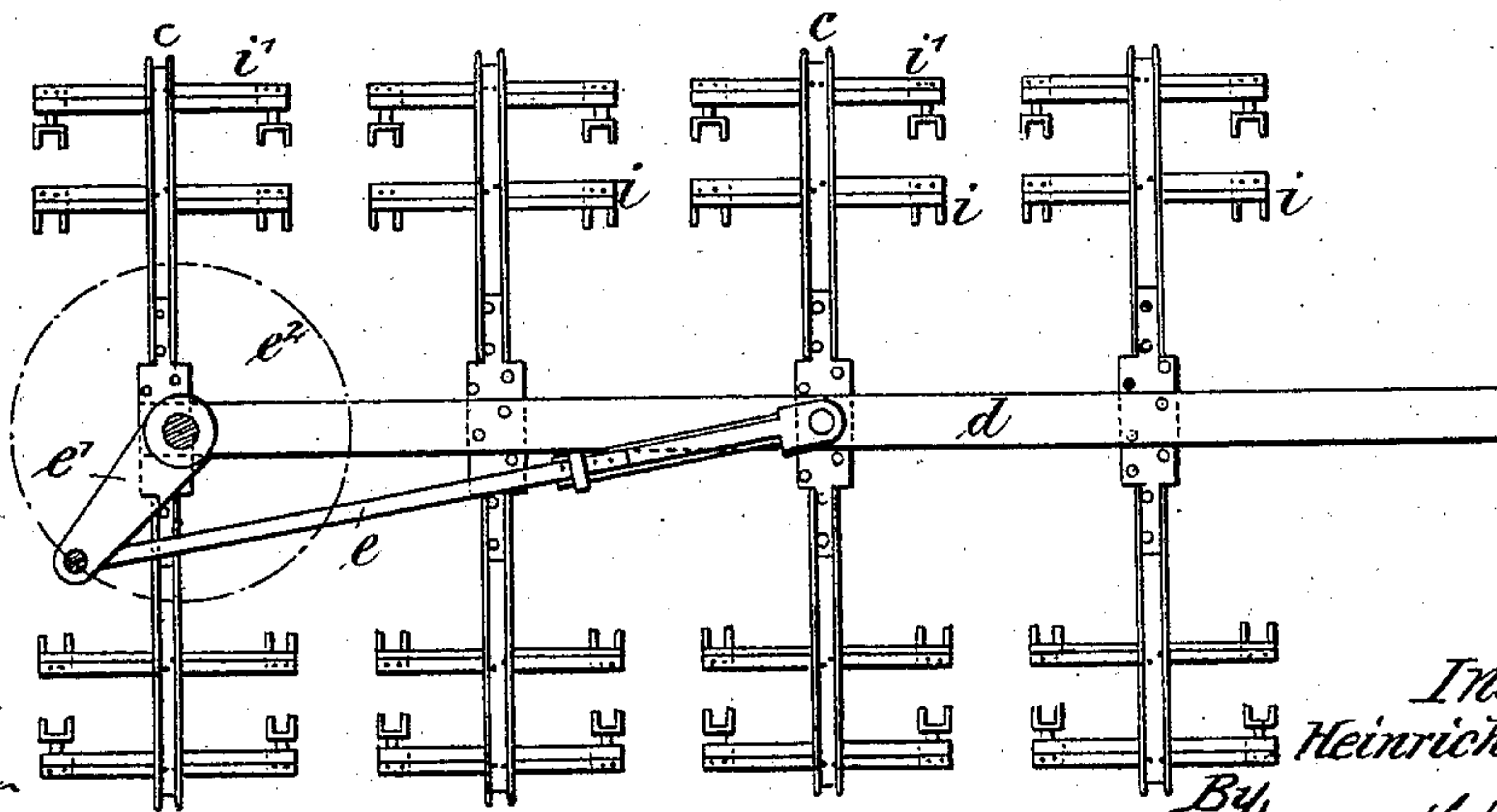


Fig. 3.



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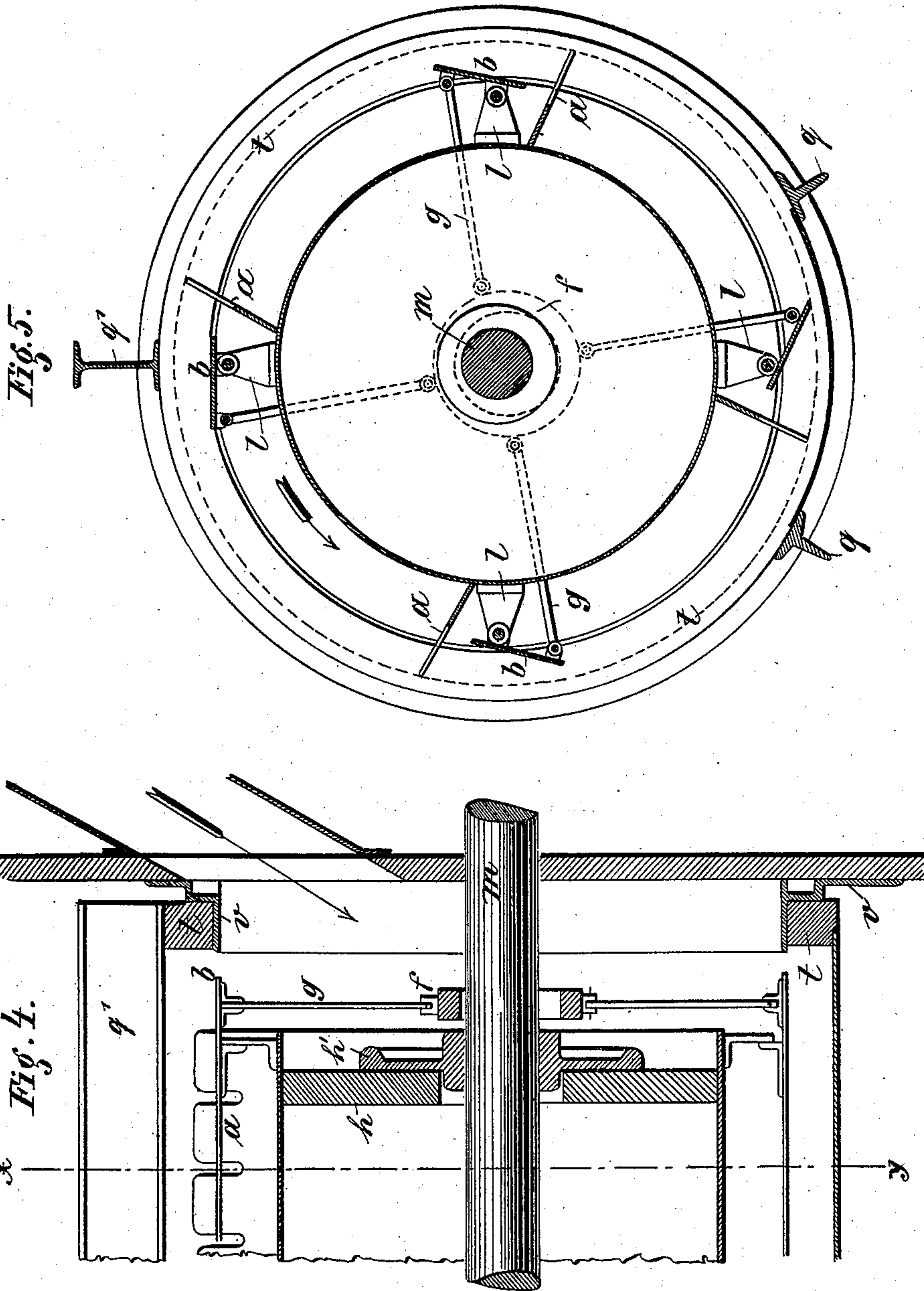
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# UNITED STATES PATENT OFFICE.

HEINRICH SECK, OF DRESDEN, GERMANY.

## BOLTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 575,992, dated January 26, 1897.

Application filed June 25, 1896. Serial No. 596,915. (No model.)

*To all whom it may concern:*

Be it known that I, HEINRICH SECK, of Dresden, in the Kingdom of Saxony and German Empire, have invented a certain new and useful Improvement in Bolting-Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to bolting-machines, and more especially to bolting-machines of that particular class having a stationary frame spanned with bolting-cloth and a rotatable frame mounted therein and provided with elevating-wings, which act to elevate the material to be bolted, and with propelling-wings, which act to throw the said material against the inner sides of the bolting-cloth.

In some of the bolting-machines as heretofore generally constructed the use of a stationary frame (although generally preferable by reason of the greater facility of keeping the meshes of the bolting-cloth free from obstructions) presented this objection that a comparatively-limited portion only of the surface of the bolting-cloth would come into proper action, because it would be always the same portion thereof which would receive the impact of the greater part of the material to be sifted, while the other portions of the surface of the bolting-cloth would to a great extent remain out of contact with the said material.

One object of my invention is to provide an improved construction of machine wherein all portions of the sifting-cloth, although the latter and the frame spanned therewith remain stationary when the machine is in operation, will be properly and evenly acted upon, and other objects are to provide improved means for cleaning the bolting-cloth or keeping the same free from obstructions, as well as for rendering all portions of the bolting-cloth and its frame easily accessible even in such cases where the location of the machine presents difficulties in this respect.

My invention therefore consists in the details of construction and combination of parts more fully hereinafter described, and illus-

trated in the accompanying drawings, in which—

Figure 1 is a central vertical longitudinal section of a bolting-machine embodying my improvements, the interior rotary frame and the bottom portion of the machine being omitted. Fig. 2 is a vertical transverse section on the line  $x y$  of Fig. 1, showing the parts omitted above. Fig. 3 is a plan view of the brushing mechanism for keeping the bolting-cloth clean, the brushes themselves, however, being omitted. Fig. 4 is a central vertical longitudinal section of the feed end portion of the machine, drawn to a larger scale than Fig. 1 and showing parts of the interior rotary frame with its wings. Fig. 5 is a section on the line  $y z$  of Fig. 4 as seen when looking to the right in that figure.

Within the usual outer casing is mounted a cylindrical frame consisting of the annular head portions  $t$ , the longitudinal portions  $q q'$ , and the peripheral arms  $k$ , extending between the said longitudinal portions and supporting the usual bolting-cloth, which thus forms an approximately cylindrical surface or web around the entire frame. Journaled in suitable bearings provided in the end portions of the outer casing is the shaft  $m$ . Rigidly mounted on this shaft within the stationary outer frame above described and concentrically thereto is the rotatable inner frame, the same consisting substantially of suitable head portions, such as  $h$ , secured on the shaft  $m$  by means of the hubs  $h'$  or otherwise near the ends of the outer frame, Fig. 4, and of suitable longitudinal connections between the said two head portions. Extending either spirally or longitudinally on the outer periphery of the said rotatable frame are the propelling-wings or beaters  $a$ , which upon the inner frame being rotated act in conjunction with the centrifugal force to throw the material to be bolted against the inner surface of the bolting-cloth in a well-known manner. The said propelling-wings or beaters are rigid on the rotary frame, and each of them may either be formed with a continuous surface or be slotted at suitable intervals, as indicated in Fig. 4. Movably journaled with their axes in standards  $l$ , provided on the periphery of the rotary frame in close



proximity to the said propelling-wings *a*, are the elevating-wings *b*. (Best shown in Fig. 5.) The said elevating-wings are pivotally connected near the ends of the rotary frame with the outer ends of the rods *g*, the latter being with their inner ends pivotally connected with an annular strap or ring *f*, loosely surrounding the shaft *m* and resting thereon in the position shown in Fig. 5. The entire mechanism is thus eccentrically supported on and with relation to the shaft *m*, the lowermost of the elevating-wings being in the position shown in Fig. 5 inclined so as to approach with its outer edge as near as possible the inner periphery of the stationary frame, while the uppermost one of the wings lies approximately horizontally, and the other two wings on the right and left occupy intermediate positions. It will thus be seen that when the rotatable frame is set in motion by the rotation of the shaft *m* the said wings and connections, as well as the annular strap *f*, will be rotated likewise, and since the said annular strap, by reason of its weight and of the weight of its connected parts, will in rotating remain in its eccentric position each of the elevating-wings *b* will consecutively assume the different positions shown in Fig. 5, thereby alternately changing their position relatively to the surface of the bolting-cloth, so that in the lowermost position each of the wings will most efficiently seize and lift the material, (fed into the machine as indicated by the arrow in Fig. 4,) whereas the nearer each wing will approach the uppermost position the more readily and efficiently it will release the material lifted to the required respective height.

The material sliding down along the inner surfaces of the elevating-wings, after having been seized and while being lifted by the latter, will be seized by the propelling-wings *a* and thrown by them against the inner surface of the bolting-cloth on the outer frame. The elevating-wings *b*, at the same time acting during the rotary movement to displace the air from within the space contained between themselves and the said propelling-wings *a*, will produce within such space a certain rarefaction of air, thereby causing a current of air which will convey the material to the elevating-wings *b*. The latter will at the same time produce a pressure current of air moving in a radially outward direction, and the material will thus be thoroughly and evenly distributed over the entire surface of the bolting-cloth, this effect being materially assisted by the reciprocating or swinging movements of the elevating-wings, as described.

That portion of my invention the object of which is to provide for keeping the meshes of the bolting-cloth clean consists, essentially, in a system of peripheral arms extending parallel to the surface of the bolting-cloth on the outside thereof and having secured thereto, by means of springs or by other equivalent

means, a number of brushes, which are thus made to bear with an elastic pressure against the outer surface of the bolting-cloth. The entire system of brushes is reciprocated lengthwise of the stationary frame by means of a crank and connecting-rod mechanism acting upon a bar to which the said peripheral arms are secured. *d* designates the said bar, and *c* the peripheral arms, secured transversely thereto and extending around the greater portion of the outer periphery of the bolting-cloth of the stationary frame. *i* and *i'* are transverse arms attached, at suitable distances apart, to the said peripheral arms and having secured thereto at or near their two ends the brushes *n*, as shown in Fig. 2. The said brushes are curved inwardly, so as to make them conform to the surface of the bolting-cloth. *e* is a connecting-rod pivotally connected with its one end to the bar *d*, while its other end is pivotally connected with a crank-arm *e'*, extending horizontally from the shaft *f'*, journaled in the top portion of the outer casing of the machine and carrying the worm-wheel *e<sup>2</sup>*, rotated through a worm *e<sup>3</sup>* on the shaft *e<sup>4</sup>*. The said shaft *e<sup>4</sup>* may have rotary movement imparted to it by means of a belt from the main shaft *m*, as indicated in Fig. 1. It will thus be seen that by the rotation of the worm-wheel *e<sup>2</sup>* the bar *d*, and with it the entire system of brushes, is reciprocated over the outer surface of the bolting-cloth, the result being that the brushes will remove from the meshes of the bolting-cloth any particles of material that may have settled therein, and the bolting-cloth will thus be kept clean while the machine is in operation.

That part of my invention the object of which is to render all portions of the frame spanned with the bolting-cloth more readily accessible than heretofore is best shown in Figs. 1, 2, and 4. *v v* are annular flanges, preferably of cast-iron and secured to the opposite inner sides of the standards of the outer casing of the machine, and these flanges are surrounded by the annular end portions *t* of the frame, the said annular portions, with their longitudinal connections *q* and *q'*, being capable of turning or sliding on the said annular flanges. Since these parts, together with the longitudinal bars *s* and the peripheral arms *l*, secured to the parts *q* and *q'*, form the outer frame, it will be seen that the latter may thus be swung around on the said flanges *v*, so that in such cases where, by reason of the machine being unfavorably located, the one or the other side of the said frame is obstructed by other machines or the like, and thus not readily accessible for repairing purposes, the respective side, portion of the frame may be swung or turned around to the other unobstructed side, where it will then be readily accessible. Of course when the machine is at work the said frame will remain stationary, and as a means for normally holding it in position I may provide a



lever *j*, having at its outer end a counter-weight *j'* and formed at its inner end with a hook which enters a corresponding notch in a peripheral part *r* of the frame. When it is  
5 desired to turn the frame on the annular flanges, the hooked end of the lever *j* will first have to be lifted out of the said notch and the mechanism for reciprocating the said cleaning-brushes disconnected from its actuating  
10 mechanism, as will be readily understood from the drawings. This done, the entire frame may be swung around as described.

Having thus fully described my invention, what I desire to claim and secure by Letters  
15 Patent is—

1. In a bolting-machine, the combination with a stationary outer frame and its bolting-cloth covering, of an inner rotatable frame provided with oscillatory elevating-wings *b*  
20 and rigidly-attached propelling-wings *a*, the said elevating-wings being adapted to approach the bolting-cloth and seize the mate-

rial to be bolted and then deliver it to the propelling-wings that throw said material against the bolting-cloth, substantially as de- 25 scribed.

2. In a bolting-machine, the combination with a stationary outer frame having a bolting-cloth covering and normally held locked in a stationary position, of means for unlocking  
30 and swinging around the said frame, a reciprocating brush in contact with the outer surface of the bolting-cloth on the said normally stationary frame, and a rotatable inner frame provided with elevating-wings and propel- 35 ling wings, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HEINRICH SECK.

Witnesses:

O. DERSCHOW,  
HERMANN FRÜHE.