(No Model.) 4 Sheets—Sheet 1.

W. BACHNICK.

INTESTINE CLEANER.

No. 407,505. Patented July 23, 1889.

Fig I.

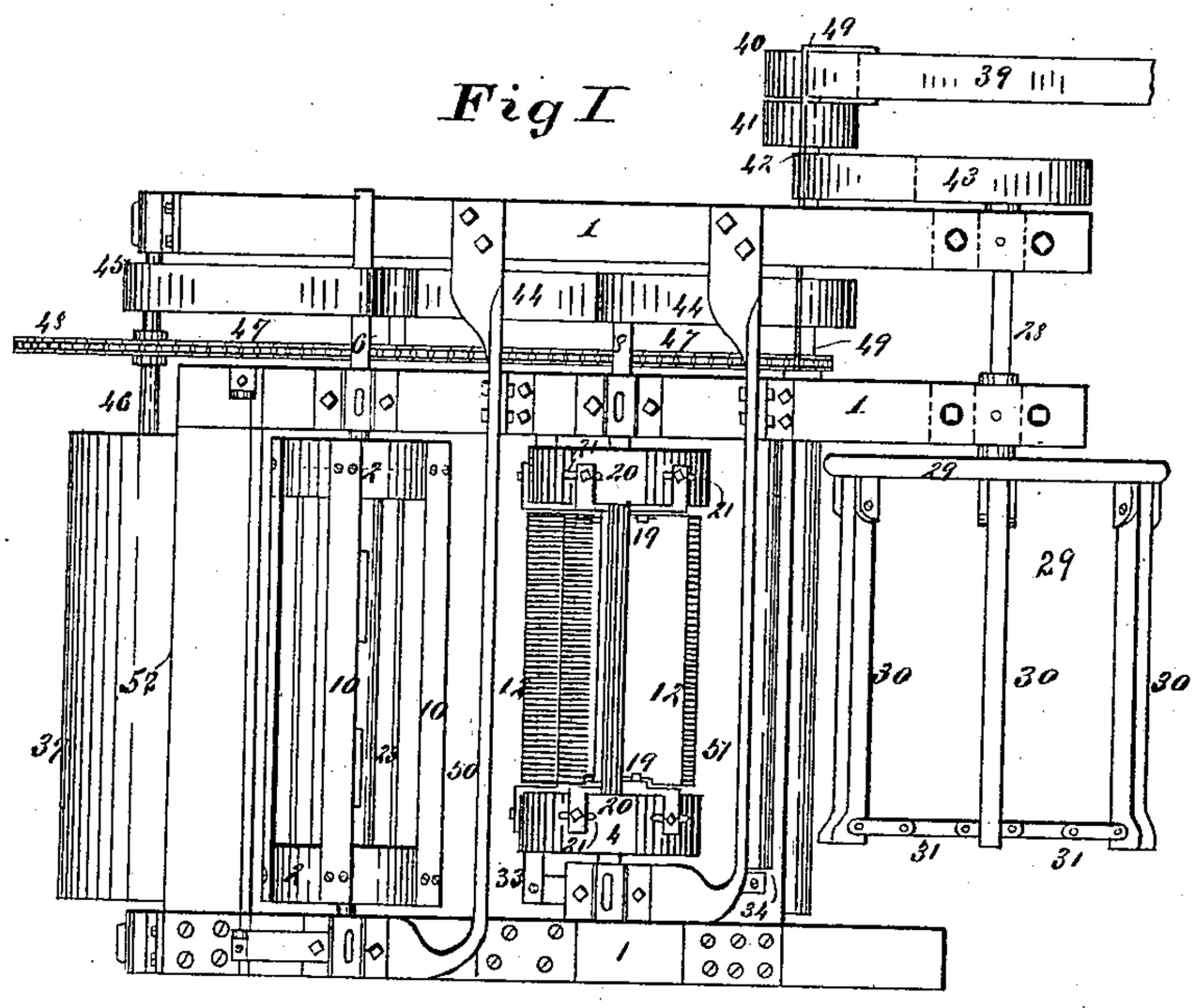

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FIG-II

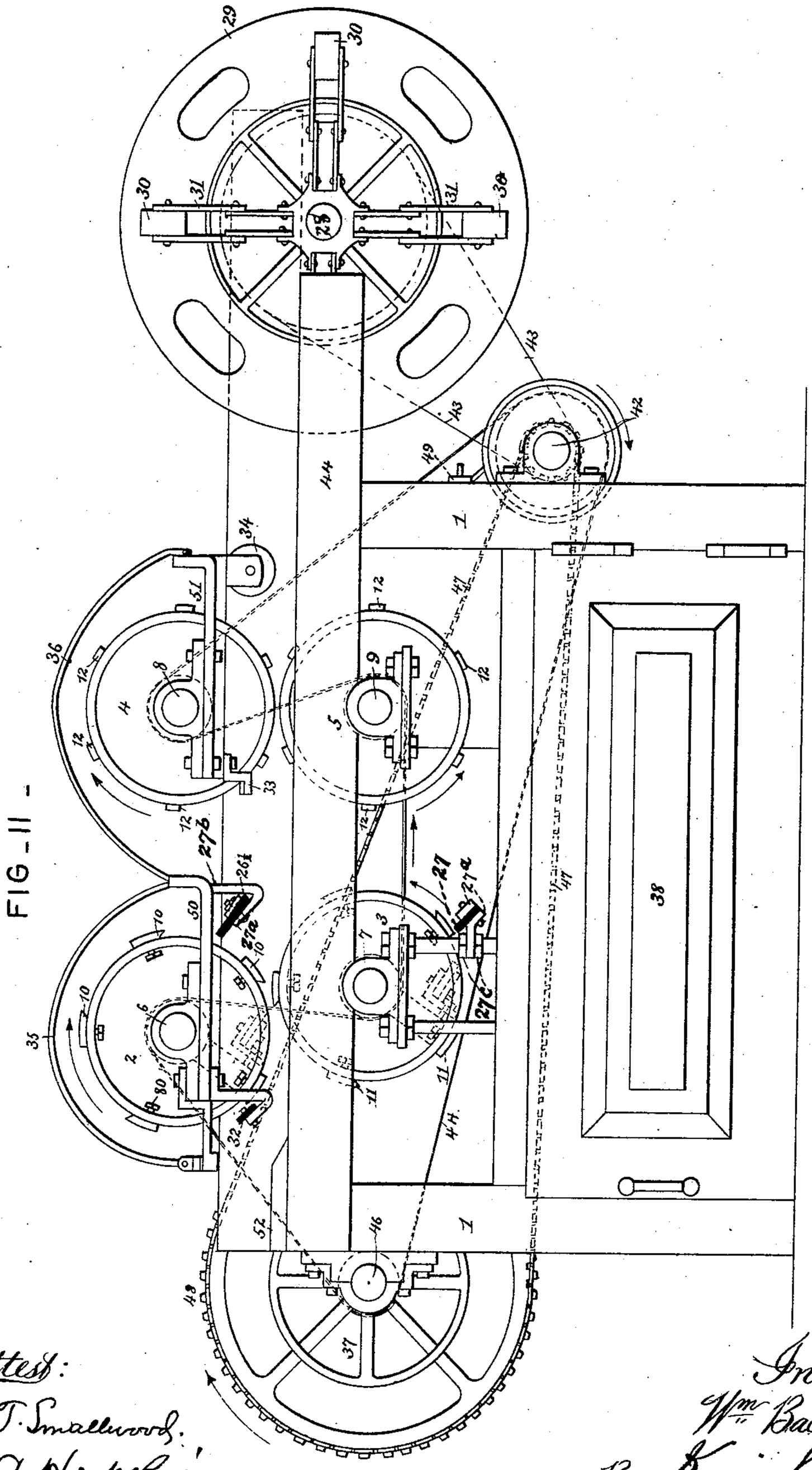

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Fig. III

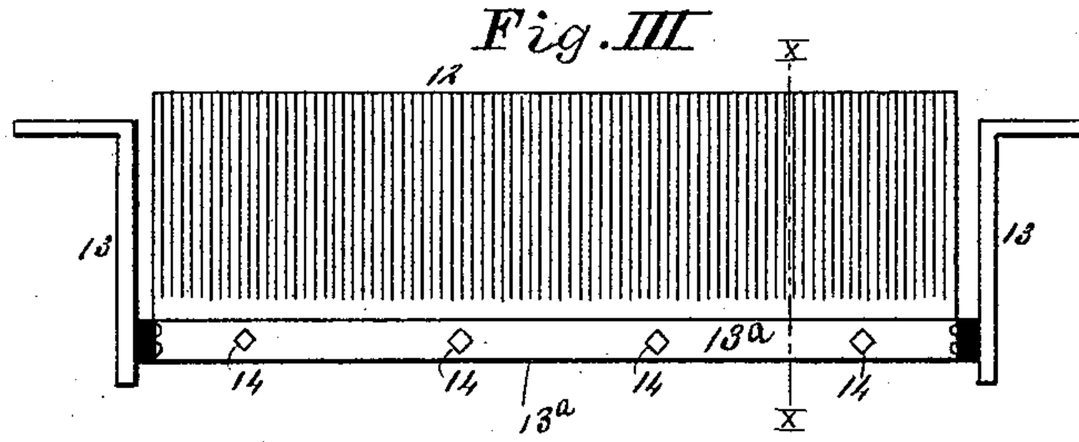

Fig. X

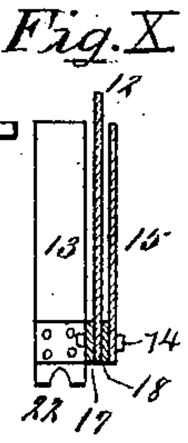

Fig. IV

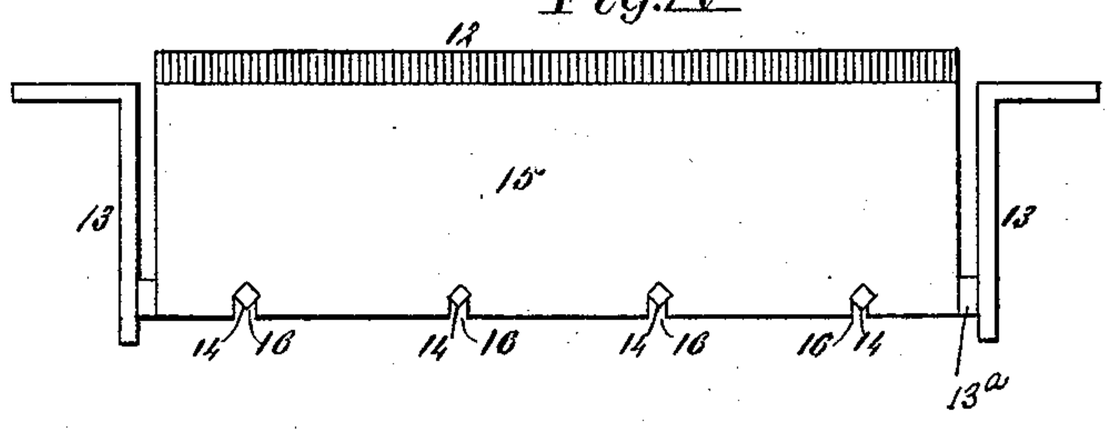

Fig. V

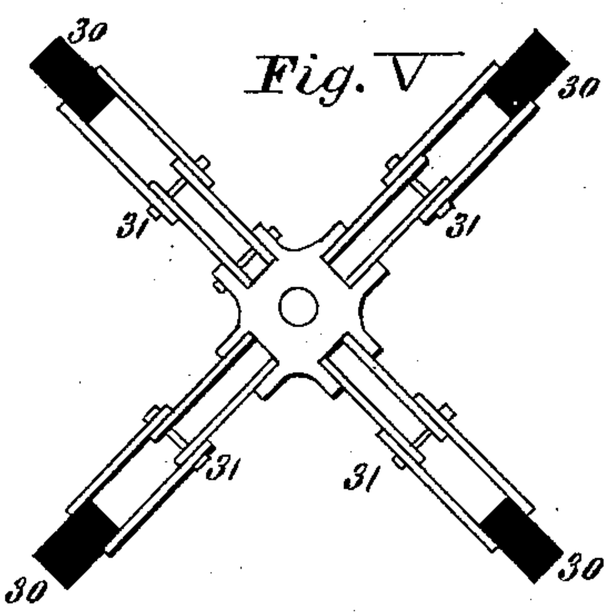

Fig. VI

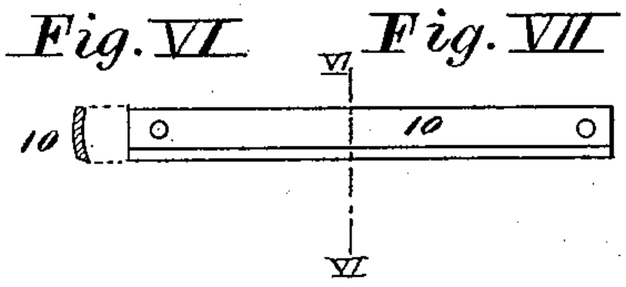

Fig. VII

Fig. IX

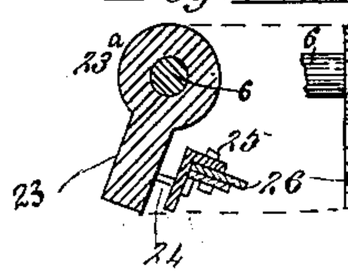

Fig. VIII

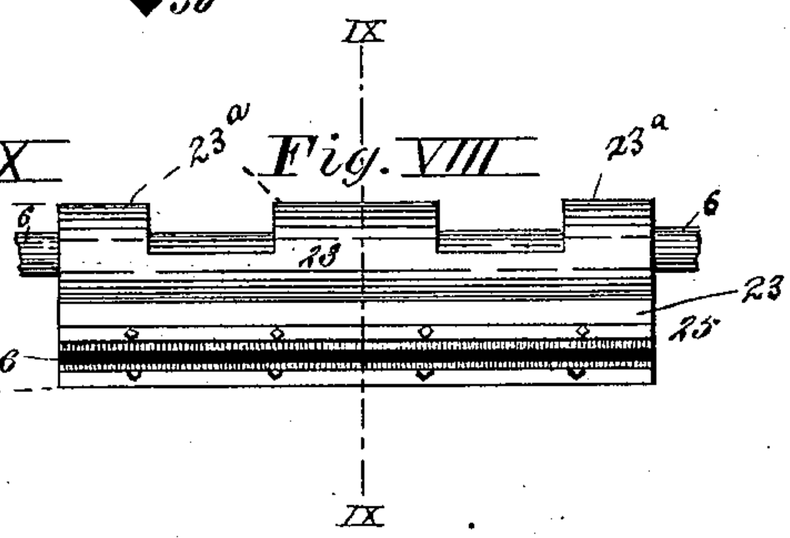

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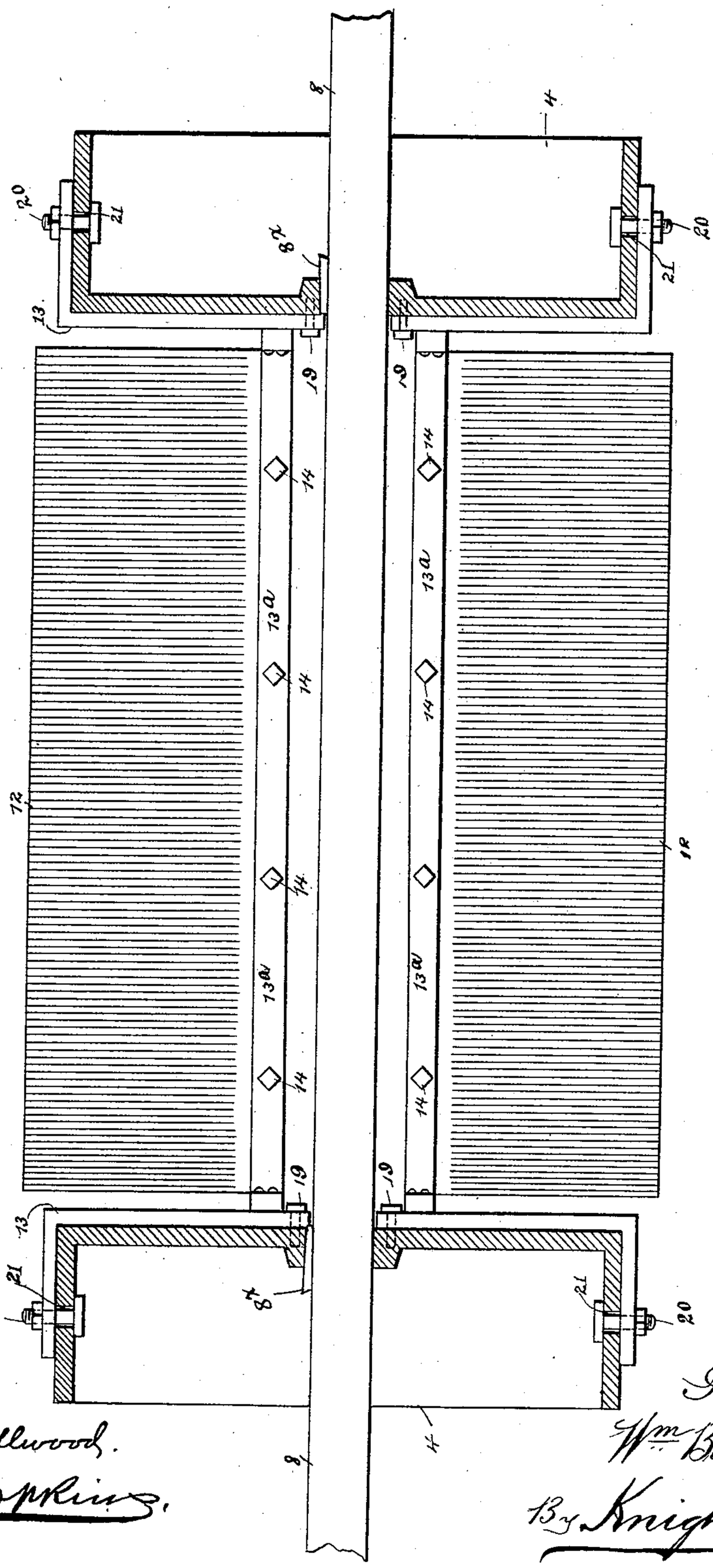
FIG - XI -



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Inventor:
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UNITED STATES PATENT OFFICE.

WILLIAM BACHNICK, OF KANSAS CITY, KANSAS.

INTESTINE-CLEANER.

SPECIFICATION forming part of Letters Patent No. 407,505, dated July 23, 1889.

Application filed August 8, 1888. Serial No. 282,208. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM BACHNICK, of Kansas City, in the county of Wyandotte and State of Kansas, have invented a certain new and useful Improvement in Intestine-Cleaners, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure I is a top view of my machine. Fig. II is a side view. Fig. III is a front view of one of the cleaning-brushes. Fig. IV is a rear view of one of the cleaning-brushes, also showing the protecting-shield. Fig. V is an end view of the reel. Fig. VI is a section taken in line VI VI, Fig. VII. Fig. VII is a top view of one of the cleaning-knives. Fig. VIII is a front view of one of the knife-cleaners. Fig. IX is a section taken on line IX IX, Fig. VIII. Fig. X is a section taken on line X X, Fig. III. Fig. XI is an enlarged longitudinal section of one of the cylinders 4 5.

My invention relates to a device for cleaning the tallow from beef middle casings or entrails; and my invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Referring to the drawings, 1 represents the frame, to which the various parts of the machine are attached.

2 3 4 5 represent cylinders, which are supported on shafts 6 7 8 9. To each of the cylinders 2 and 3 are attached a series of knives 10 11. (See Figs. I, II, VI, and VII.)

The brushing device carried by the shaft 8 is an exact duplicate of that carried by the lower shaft 9, and therefore a description of one will suffice. As seen at Fig. XI, the cylinders 4 are arranged one at each end of the shafts 8 and they are headed or closed at their inner ends. The shaft passes through their centers and is keyed to each by means of a key $8^{\times}$ in the usual manner. These cylinders are provided at suitable intervals with peripheral slots 21, by means of which and the bolts 29, that pass through them, the frame 13 is adjustably secured to the cylinders. Each of these frames consists of two right-angle brackets, (see Figs. III and IV,) which have downward projections provided with notches 22, (see Fig. X,) and a bar or strip 13^{a}, at opposite ends of which the said brackets are secured, or the said brackets and bar may of course be formed integral. As shown in Fig. XI these brackets are arranged radially on the inner ends of the cylinders 4 with their outer arms, through which the bolts 20 pass, lying upon the peripheries of the cylinders, while their inner arms lie flat against the inner ends of the cylinders and are held in place by means of set-screws 19, resting in the notches 22 and screwing into the ends of the cylinders. To the bar 13^{a} of each of these brackets are secured metallic brushes 12, which project approximately radially from the shaft 8, and arranged behind each of these brushes is a metallic shield 15, which prevents the brush being bent back too far, as in so doing it is liable to break. Arranged between the bar 13^{a} and the brush and between the brush and the shield 15 are narrow strips 17 18, of pasteboard or other like material, which permit deflection of the brushes to a certain degree, and thereby render them less harsh and less liable to breakage. These brushes and the shields 15, as well as the pasteboard strips, are secured together and to the bars 13^{a} by means of bolts 14, which pass through them and the bars; but the shields are provided with slots 16, through which the bolts pass in order to permit radial adjustment of the shields.

It will be seen that when the nuts on the bolts 20 are loosened the frames 13 may be turned on the set-screws 19, and thus adjust the brushes 12 to the desired angle of inclination to the casing passing through the machine.

To each of the shafts 6 7 is suspended a metal bar 23, which is provided with perforated bosses 23^{a}, through which the shaft passes and in which it is capable of revolving without causing the bar 23 to revolve with it. (See Figs. VIII and IX.) To one side of each of these bars 23 is secured by means of set-screws or bolts 24 a clamp 25, which may by the manipulation of the set-screws 24 be adjusted at various distances from said bar.

26 is a rubber strip held in the clamp 25 and projecting slightly therefrom, so that as the knives 10 (or 11) on the cylinder 6 (or 7) go around with the cylinder and pass the rub-

ber the latter will brush them on their inner sides, and thus remove any particles that may adhere thereto.

The cylinders 2 are identical with the cylinders 4 and are similarly arranged on their shafts, and the cylinders 2 3 and the parts carried by them are identical in every respect. These bars 23, therefore, are located on the shaft 6 7 between the ends of each of the cylinders 2 3, and hang downward, as before described, in order to bring the rubber brush 26 in contact with the sides of the knives.

26½ 27 are metal strips, which are held in clamps 27ª and which extend across the machine in juxtaposition to and parallel with the cylinders 2 3 just outside of the paths of the knives 10 11, so that as the knives revolve with the cylinders and graze these strips the latter will scrape from them any particles of tallow, &c., which may adhere to the knives, and thus the outsides of the latter are always kept clean. The upper clamps 27ª are appended to the main frame by hangers 27ᵇ, while the lower ones are secured to one of the supporting-posts of the journal-box of the shaft 7 by means of nuts 27ᶜ, as shown.

To the rear of the machine is a shaft 28. To the inner end of the shaft 28 is secured a reel 29, (see Figs. I and V,) on which the casings are wound after they have passed through the cleaning-cylinders. The arms 30 of the reel are supported at their inner ends by means of links 31. These links are hinged together and to the arms and hub of the reel, (see Fig. V,) so that when it is desired to remove the casings the inner ends of the arms are closed in toward the center of the reel, and thus permit the casings to be removed readily.

32 33 are strips placed across the machine for the purpose of supporting the casings.

34 is a roller for supporting the casings as they are being wound on the reel.

35 36 are shields, which fit over the top cylinders.

37 is a roller, over which the casings pass on their way to the knives.

38 is a door, through which the tallow is removed after it has been cleaned from the casings.

39 is the drive-belt.

40 is a loose pulley, and 41 is a tight pulley, secured to the driving-shaft 42.

43 is a short belt, which connects the driving-shaft 42 with the shaft 28, to which the reel 29 is attached.

44 is a belt, which connects the driving-shaft with pulleys on the cylinders and causes them to revolve in the direction shown by the arrows in Fig. II. This belt also passes over a loose pulley 45 on the shaft 46, that supports the feeding-roller 37.

47 is a drive-chain connecting the drive-shaft with the feed-roller shaft, the drive-chain passing over a large sprocket-wheel 48, attached to the shaft 46, thus giving a positive but slow motion to the feed-roller.

49 is a rod by which the driving-belt can be thrown from the loose pulley to the tight one, and vice versa.

50 51 are braces which support the inner ends of the shafts on which the cylinders revolve.

52 is a plate which supports the casings as they leave the feed-roller.

The operation is as follows: A casing or entrail is passed over the roller 37, supporting-plate 55, and guide 32; thence between the cylinders 2 3, whose knives, as they revolve with the cylinders, cut the tallow from opposite sides of the casing; thence over the guide 33; thence between the cylinders 4 5, whose fine metallic brushes remove the finer particles of tallow that may have escaped the knives of the cylinders 2 3. It then passes over the roller 34, and it is attached to the reel 29, whereon it is wound. As the casing passes through, the knives and brushes remove all the tallow from it, and the tallow falls into an interior receptacle, from which it may be removed *via* the door 38.

I am aware that machines have been invented for removing tallow from small casings or entrails; but they are not adapted to remove the tallow from middle casings or large entrails, for which my machine is especially adapted.

The cylinders 2 and 3 are provided with set-screws 80, which jam against the backs of the knives 10 and 11, and by which the knives may be adjusted on the cylinders.

I claim as my invention—

1. In a casing-cleaning machine, the combination of a pair of cylinders having knives mounted thereon, a pair of cylinders having brushes mounted thereon, and means for revolving the cylinders, substantially as and for the purpose set forth.

2. In a casing-cleaning machine, the combination of a pair of cylinders, knives mounted on the cylinders, a bar within each cylinder having a rubber strip attached thereto for cleaning the inside of the knives, and bars secured outside of the cylinders for the purpose of cleaning the outside of the knives, substantially as and for the purpose set forth.

3. In a casing-cleaning machine, the combination of a feed-roller, a pair of cylinders having knives attached thereto, a pair of cylinders having brushes attached thereto, said brushes being made adjustable, a winding-reel situated to the rear of the cylinders, and suitable means for driving said reel, cylinders, and feed-roller, substantially as and for the purpose set forth.

4. In a casing-cleaning machine, the combination of the supporting-frame 1, feed-roller 37, cylinders 2 3, knives 10 11, cleaners 26, 26½, and 27, supports 32, 33, and 34,

cylinders 4 5, brushes 12, shield 15, and reel 29, substantially as and for the purpose set forth.

5. In a casing-cleaning machine, the combination of the cylinder provided with cleaning-brushes, guards 15 behind the brushes, and strips between said guards and brushes, substantially as and for the purpose set forth.

6. In a casing-cleaning machine, the combination of the cylinders, brushes 12, guards 15, frame 13, and strips 17 18, substantially as and for the purpose set forth.

WILLIAM BACHNICK.

In presence of—
JAS. E. KNIGHT,
C. T. KIMMEL.