

(No Model.)

2 Sheets—Sheet 1.

F. E. DAVIS.
Machine for Cleaning Intestines.

No. 230,927.

Patented Aug. 10, 1880.

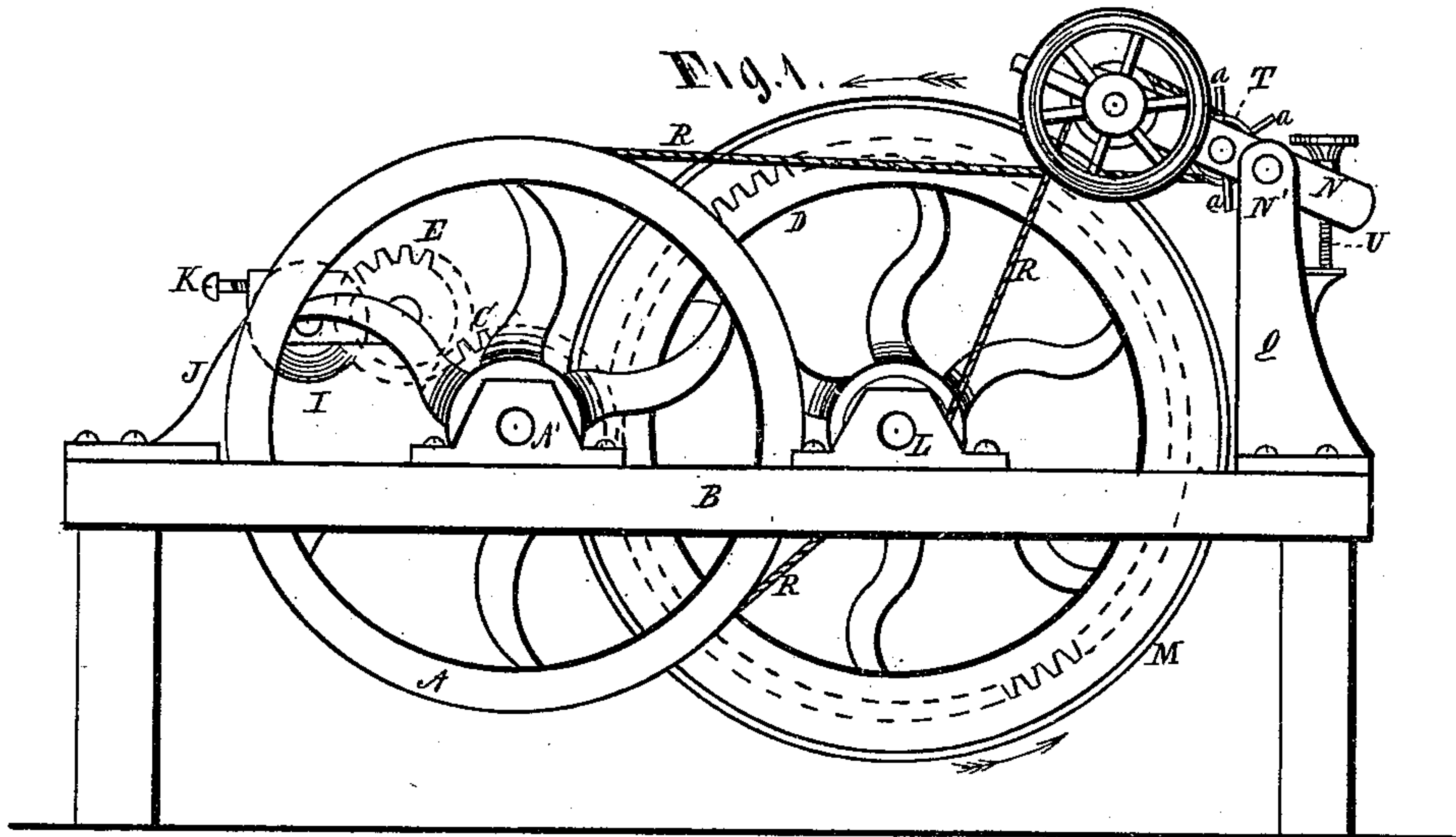
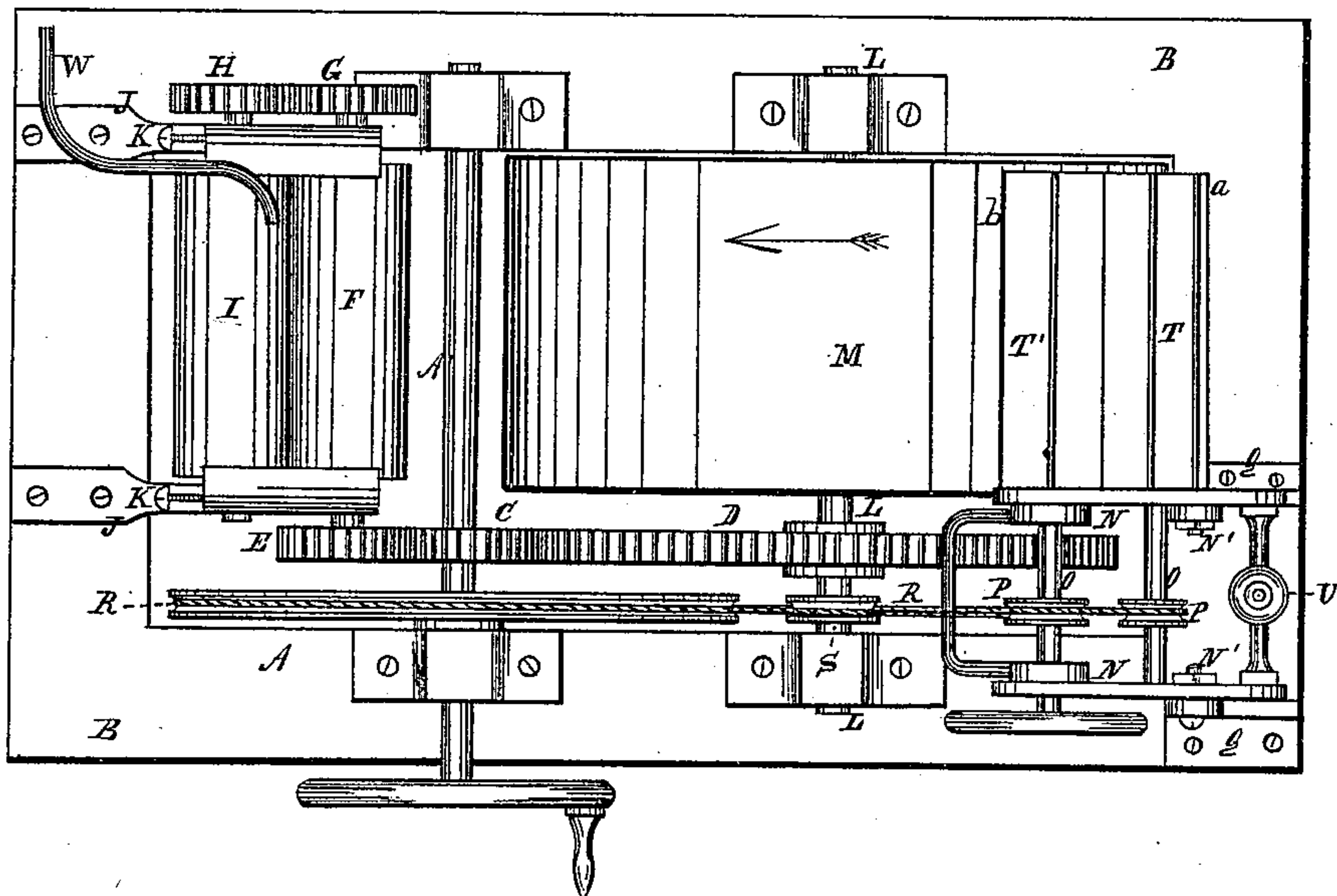


Fig. 2.



Witnesses.
S. H. Mather
J. T. Edson

Inventor.
F. E. Davis
per W. H. Barnidge
Att'y.

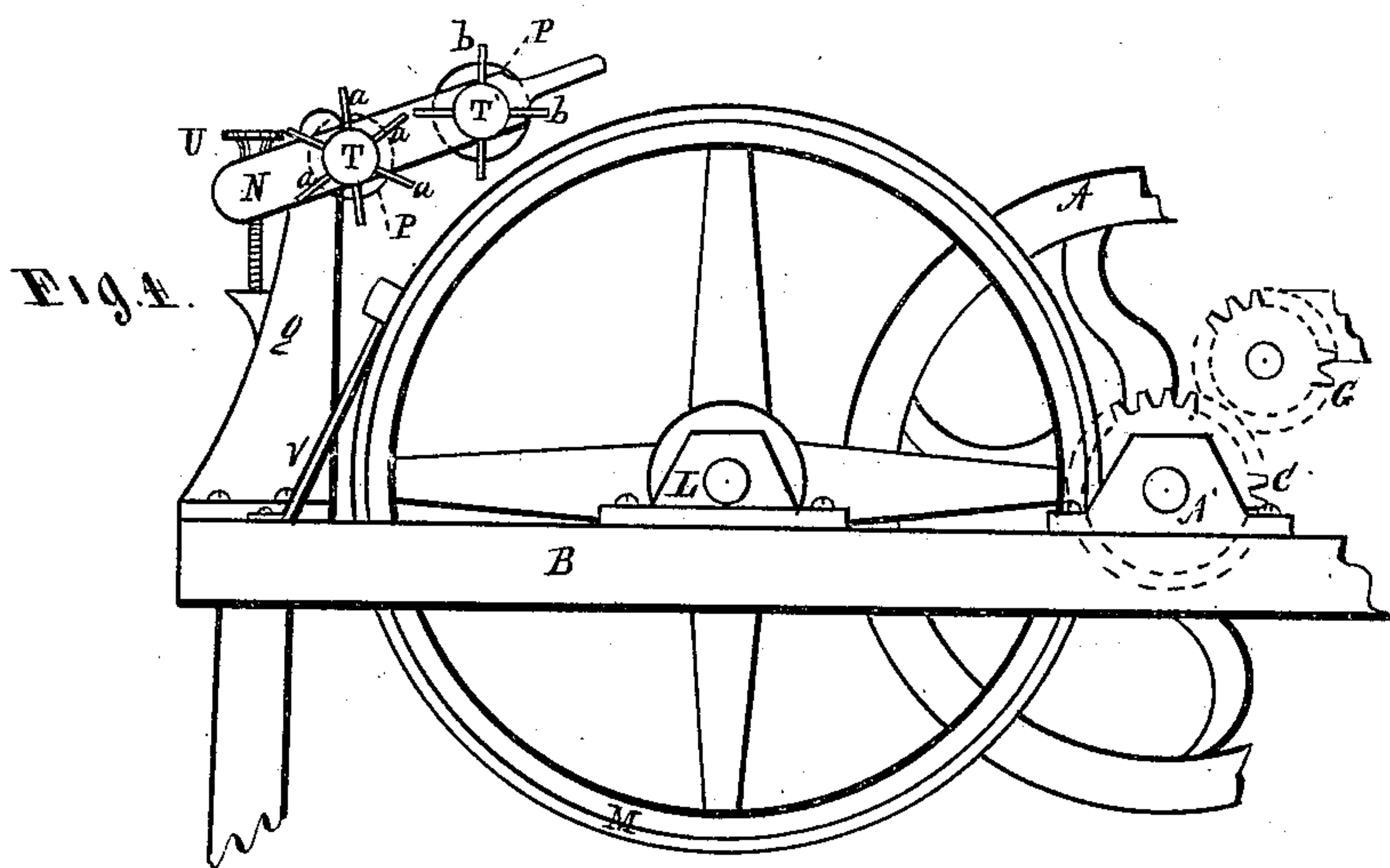
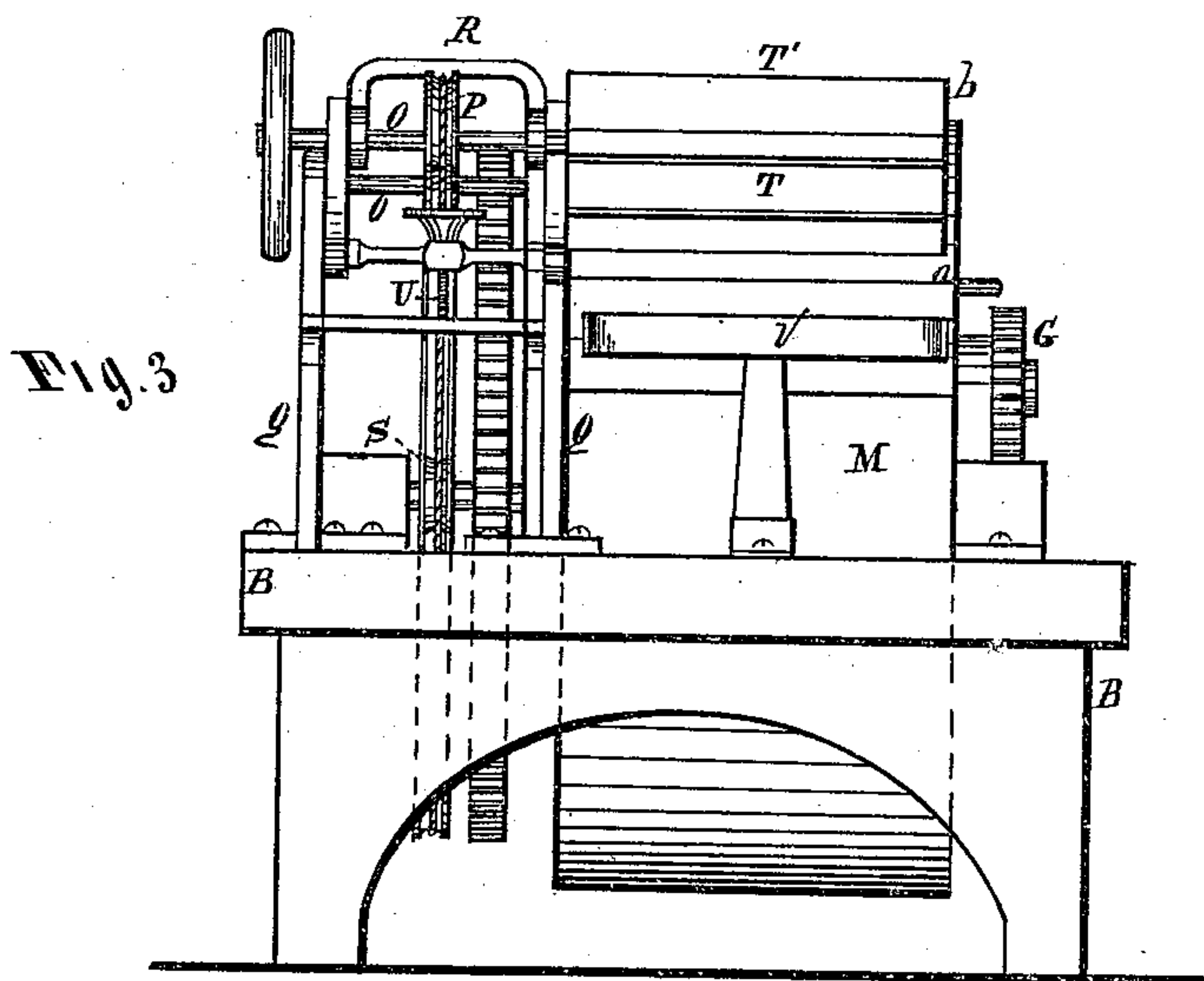
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Witnesses.
S. H. Mather
J. T. Edson

Inventor.
F. E. Davis
per *W. H. Burridge*
Atty.

UNITED STATES PATENT OFFICE.

FERDINAND E. DAVIS, OF CLEVELAND, OHIO.

MACHINE FOR CLEANING INTESTINES.

SPECIFICATION forming part of Letters Patent No. 230,927, dated August 10, 1880.

Application filed June 1, 1880. (No model.)

To all whom it may concern:

Be it known that I, FERDINAND E. DAVIS, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and Improved Machine for Cleaning Intestines; and I do hereby declare that the following is a full, clear, and complete description thereof.

The invention relates to a machine for cleaning intestines for what is known as "cases" for sausages, &c.; and the nature thereof relates to a pair of double rotary scrapers arranged in relation to a revolving cylinder which may be so adjusted as to clean the entrails. It also prevents the coiling up of a tissue around the scrapers, which is found associated with the intestines.

Operating in connection with the said mechanism is a pair of elastic rollers, between which the intestine passes from the cylinder, and by which the remaining unclean deposits are entirely removed.

To enable others to understand the construction and operation of the said machine, I will proceed to give a full and detailed description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a side view; Fig. 2, a plan view; Fig. 3, an end view; Fig. 4, a sectional view.

Like letters of reference refer to like parts in the several views.

A general view of the machine is seen in Figs. 1 and 2, in which—

A is the driving-wheel mounted upon the driving-shaft A', journaled in boxes secured to the frame B. Upon the shaft is secured a gear-wheel, C, which meshes into the wheel D, and also the pinion E. This pinion is upon the shaft of the elastic roller F, Fig. 2. At the outer end of the shaft is keyed the gear G, which meshes into the gear H, hung upon the shaft to which the roller I is attached. The shafts of the rollers have their bearings in adjustable boxes supported by the arms J J to the frame.

The boxes are moved and set, and the rollers F I are adjusted correspondingly by means of the set-screws K, which screw into the arms and connect with the boxes.

The gear-wheel D is attached to the shaft L, which is journaled in boxes secured to the frame, as seen in the drawings. The cylinder

M is also secured to the said shaft L, the cylinder receiving its motion from the driving-wheel by means of the gearing C D, one of which is upon the driving-shaft A' and the other upon the cylinder-shaft L, Fig. 2.

To the front end of the machine are attached two standards, Q Q, at the upper ends of which is pivoted the frame N at N', Figs. 1 and 2. In this frame are journaled the shafts O O, and upon each shaft is secured a pulley, P, as seen in Figs. 2 and 3. Around these pulleys passes a belt, R, which extends under the loose pulley S on the shaft L, thence around the driving-wheel A. By this belting of the pulleys P with the driving-wheel motion is conveyed to the shafts O O, and also to the revolving scrapers T T', which are secured to and supported by the shafts O O.

The scrapers are provided with a series of wings, a b, for a purpose hereinafter shown.

By the construction and arrangement of the several described parts the working mechanism operates conjointly by connection with the driving-wheel.

In cleaning the intestines by this machine, (they first being prepared in the usual way,) one or more is singly fed in between the cylinder M and the rotary scraper T'. The cylinder revolves in the direction of the arrow and the scraper T' reversely to it, and as the entrail is carried along by the cylinder to the elastic rollers F I, the scraper T' scrapes or sweeps out the feculent deposit and matter from the interior, and also scrapes off the integument which covers the exterior of the entrail.

By means of the auxiliary revolving scraper T the exterior membrane is prevented from coiling around the scraper T'. As this membrane is light and elastic it readily coils or folds about the scraper T', and is readily taken up by the wings b of the scraper and wrapped around them, rendering the scraper T' less efficient in acting upon the intestines. To prevent this membrane from coiling around and entangling the scraper is the purpose of the auxiliary scraper T. As the membrane is removed by the scraper T', the tendency in removing it is to carry it up around the wings b. To avoid this the scraper T is provided with a larger number of wings than the scraper T',

and is arranged to admit of the wings *a* running closely to but not in contact with the wings *b* of the scraper *T'*. The rotation of the scraper *T* is in such direction and revolves so much faster than that of the scraper *T'* that the said membrane, as it is taken off and carried up in the direction of its rotation, is met by the wings *a*, and scraped or swept off from the wings *b*. Hence the scraper *T'* is freed from any entanglement of the membrane by the action of the scraper *T*. These scrapers may be adjusted to or from the face of the cylinder by means of the gage-screw *U*, which so engages the cross-bar of the frame *N* with a pivotal connection at its lower end that by turning the screw the frame, which is pivoted to standards *Q Q*, will vibrate or move upon its pivots to or from the cylinder carrying the scrapers correspondingly. Thus the scrapers may be brought more or less close to the face of the cylinder, as the nature of the case may require.

In front of the cylinder is placed a guard, *V*, Figs. 3 and 4, to prevent the entrails from being displaced or thrown up and entangled by the cylinder.

The entrails are received from the cylinder between the two elastic rollers *F I*, Fig. 2, the pressure of them upon the intestines being such as to effectually force out all the fecal sediment or dregs which may not have been removed by the scraper.

More or less pressure may be given to the rollers by means of the adjusting-screws *K K* acting upon the movable boxes of the roller-shaft.

By the action of the elastic rollers the in-

testines are drawn over the cylinder between the scrapers, so that no feeding or guiding is required after the intestines are taken up by said rollers. A jet of water is thrown upon the rollers by means of a pipe, *W*, or by equivalent means, which prevents the intestines from sticking to the rollers in passing through between them.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In machines for cleaning intestines, an improvement consisting of an auxiliary rotary scraper arranged in relation to the scraper *T'*, each journaled in a pivotal frame and operating conjointly in connection with the cylinder *M*, substantially as and for the purpose described.

2. The frame *N*, having a pivotal adjustment and carrying the rotary scrapers, with their pulleys and shafts, in combination with the cylinder *M*, arranged to co-operate with the elastic rollers, substantially as described, and for the purpose specified.

3. The rotating winged scrapers, arranged to revolve conjointly and in different velocities to each other, in combination with the pivoted frame *N*, adjusting-screw *U*, and revolving cylinder, constructed and arranged in the manner and for the purpose substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FERDINAND E. DAVIS.

Witnesses:

J. H. BURRIDGE,
C. PLOCHER.

1,600