

No. 709,997.

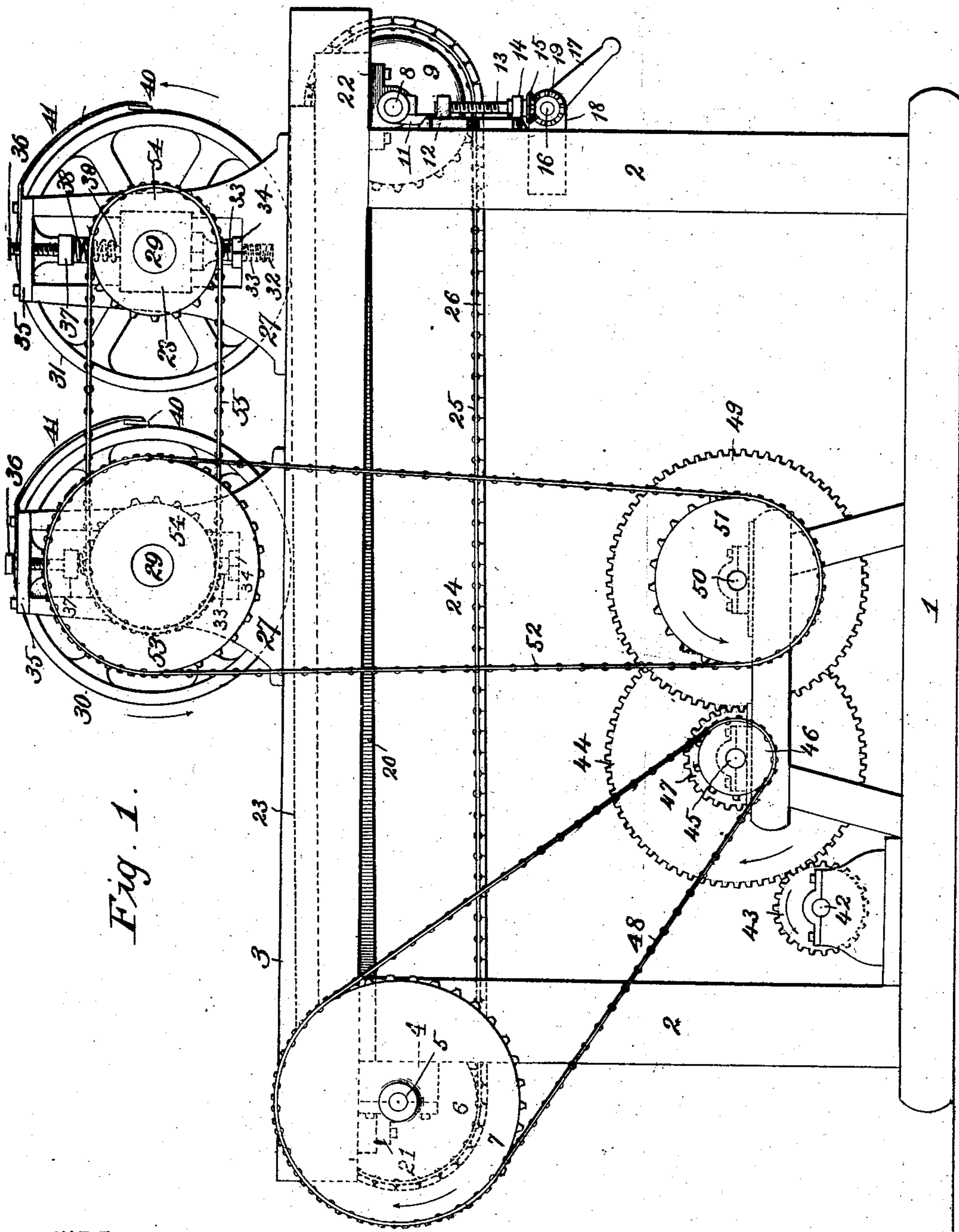
Patented Sept. 30, 1902.

J. McCLEAN & L. E. PHIPPS.
HOG BELLY ROLLING MACHINE.

(Application filed Dec. 17, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:

Arthur M. Arthur
H. C. Rodgers

Inventors.

James McClean and Leslie E. Phipps

By Fischer & Thorpe
Attys.

No. 709,997.

Patented Sept. 30, 1902.

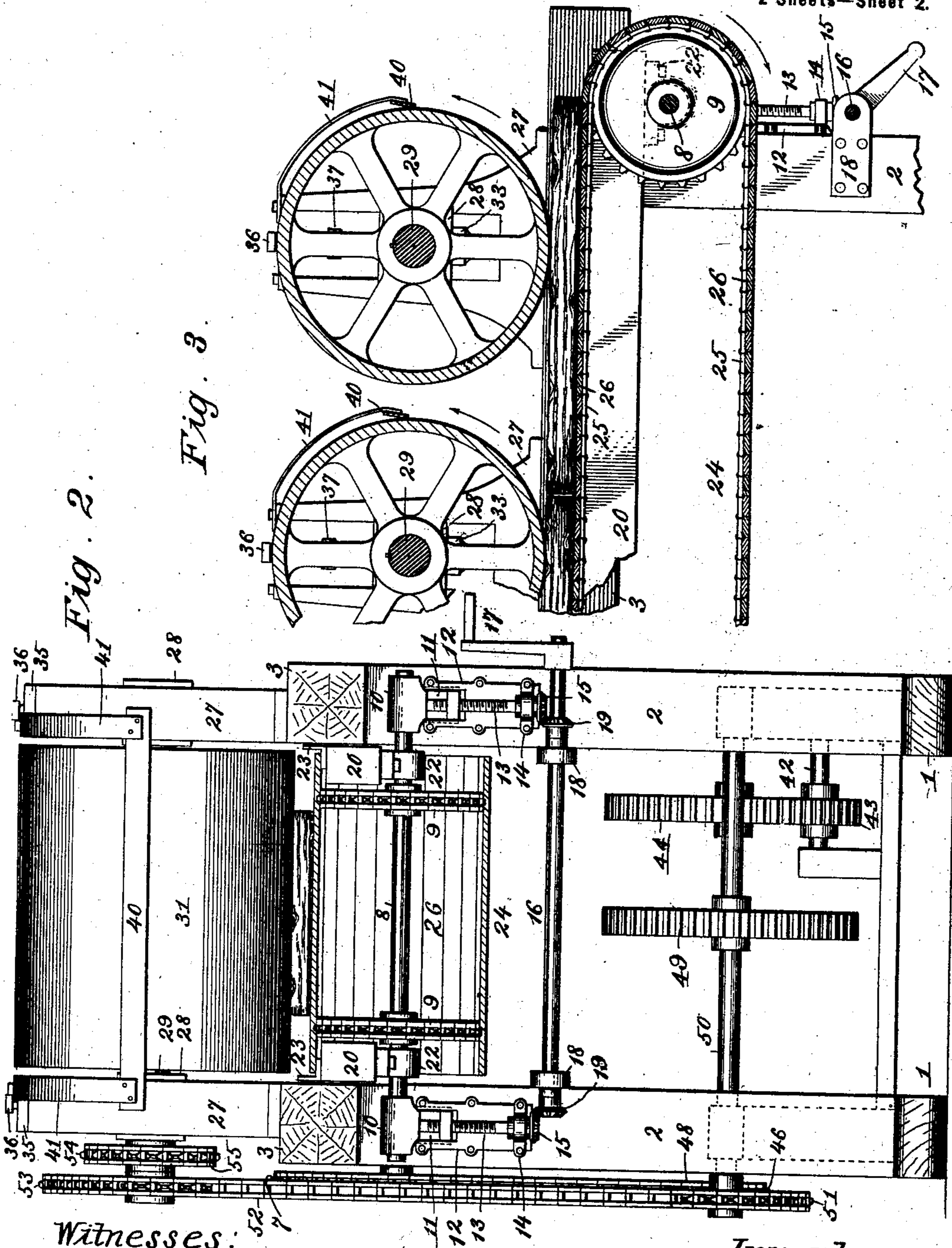
J. McCLEAN & L. E. PHIPPS.

HOG BELLY ROLLING MACHINE.

(Application filed Dec. 17, 1901.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses:

Arthur M. Arthur
H. C. Rodgers.

Inventors:

James M. Clean and Leslie E. Phipps
By Fischer & Thayer
Attys.

UNITED STATES PATENT OFFICE.

JAMES McCLEAN AND LESLIE E. PHIPPS, OF KANSAS CITY, KANSAS.

HOG-BELLY-ROLLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 709,997, dated September 30, 1902.

Application filed December 17, 1901. Serial No. 86,267. (No model.)

To all whom it may concern:

Be it known that we, JAMES McCLEAN and LESLIE E. PHIPPS, citizens of the United States, residing at Kansas City, in the county of Wyandotte and State of Kansas, have invented certain new and useful Improvements in Hog-Belly-Rolling Machines, of which the following is a specification.

Our invention relates to hog-belly-rolling machines, and has for its object the provision of a machine for quickly, easily, and cheaply transforming hog-belly strips into flat slabs of uniform thickness.

It is the practice of packing-houses to cut the lower or belly portion of each hog into two strips, each having a tendency to curl and much thicker at one side than at the other. The variable thickness of the meat, as well as its tendency to curl, is objectionable, because it requires more space in packing than an equal amount of flat meat and is less attractive in appearance than the latter to purchasers. To overcome these objectionable features, heretofore a bed with a vertically-moving pounder has been provided, the attendant shifting the meat back and forth upon the bed until the pounder has eventually pounded it into a flat slab of approximately uniform thickness. This pounder in its operation, especially if located above the ground-floor, keeps up an incessant din and shakes the whole building, and, furthermore, the capacity of output of the pounder method is very limited. For these reasons we have produced a machine for effecting the same result which operates noiselessly and has an output limited only by the speed with which the curled and unflattened belly-pieces can be fed to it by a boy or other unskilled laborer.

Other objects of the invention hereinafter appear, and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1 is a side elevation of a hog-belly-rolling machine embodying our invention. Fig. 2 is an end view of the same. Fig. 3 is a central vertical section of the upper part of the same.

Referring now to the drawings, where like reference-numerals designate corresponding parts, 1 designates floor-sills, 2 vertical standards, and 3 upper sills, of the machine-frame-

work, said sills extending parallel with each other.

4 designates bearing-boxes secured to the machine at the front and upper ends of front standards 2, and 5 a transverse shaft journaled in said boxes and provided between them with a pair of sprocket-wheels 6 and at one side of the machine with a large sprocket-wheel 7. At the opposite end of the machine is a similar shaft 8, equipped with similar sprocket-wheels 9 and journaled in bearing-boxes 10, having depending angle-arms 11, slidably mounted in brackets 12, bolted to the rear standards 2. Vertical screws 13, engaging the horizontal portions of said angle-arms, are journaled in end bars 14 of said brackets and provided at their ends with bevel-gears 15.

16 designates a transverse shaft provided at one end with a crank-handle 17 and journaled in bearing-plates 18, secured to the rear standards 2, and said shaft is provided with bevel-gears 19, meshing with gears 15 for the purpose of imparting movement in one direction or the other to the screws.

20 designates a pair of parallel bars fitting snugly within the upper sills 3 of the frame and provided at their front ends with journal-boxes 21, mounted on shaft 5, and at their rear ends with journal-boxes 22, mounted on shaft 8, and secured upon said bars are parallel angle-irons 23, which form at once a support and guide for the upper strand of an endless conveyer 24, said conveyer consisting of a pair of parallel chains 25, connecting sprocket-wheels 6 and 9, and cross-slats 26, arranged closely together and sliding with the minimum of friction on the angle-iron tracks 23 when acting as a part of the upper strand of the conveyer.

Secured rigidly upon sills 3 are vertically-bifurcated standards 27, and slidingly mounted therein are bearing-boxes 28, forming journals for shafts 29 of rollers 30 and 31, the former being located about midway the length and the latter near the rear end of the machine. To limit the downward movement of the boxes, each standard is provided with threaded holes 32, wherein are secured headed bolts 33, carrying lock-nuts 34 to prevent change of adjustment from the vibration of the machine or other cause. To hold the boxes

yieldingly depressed, cross-bars 35 bridge the bifurcated standards and carry adjustable screws 36, having caps 37 at their lower ends to receive the upper ends of expansive coil-
 5 springs 38, the lower ends of said springs pressing down upon the bearing-boxes and being retained in proper relation thereto by the upwardly-projecting pins 39. At the rear sides of the rollers and diverging upwardly
 10 therefrom are scrapers 40, secured to the lower ends of spring-arms 41, bolted to the bridge-bars of the standards.

Referring now to the mechanism for operating the machine, 42 designates a shaft
 15 driven by motor or other suitable power (not shown) and provided with a small pinion 43, meshing with a large gear 44 of a train of gearing for imparting uniform speed to the conveyer and the rollers. Gear 44 is mounted
 20 on a shaft 45, suitably journaled and equipped with a sprocket-wheel 46 and a gear-pinion 47, the former being connected by sprocket-chain 48 with sprocket-wheel 7 of the conveyer mechanism. Pinion 47 meshes with a
 25 large gear-wheel 49 on a shaft 50, suitably journaled, and said shaft carries sprocket-wheel 51, connected by chain 52 with a large sprocket-wheel 53 on shaft 29 of roller 30, motion being transmitted from one of said
 30 rollers to the other through the medium of sprocket-wheels 54 and sprocket-chain 55.

Preliminary to the operation of the machine crank-shaft 16 is operated to adjust the rear end of the conveyer to accommodate belly-
 35 pieces of minimum thickness. The machine is then set in operation and a boy or unskilled laborer stationed at the front end of the machine to place the belly-pieces upon the conveyer as rapidly as possible, the movement of
 40 the conveyer carrying them successively under rollers 30 and 31, the first roller flattening them out to approximately the required size and thickness and the second roller compressing and solidifying them still more, be-
 45 cause, as will be observed in Fig. 1, the rear end of the conveyer is nearer roller 31 than roller 30. It will be apparent that the fat, salt, &c., which sticks to the rollers will be removed therefrom by scrapers 40 and will
 50 drop back upon the meat, that which drops upon the meat immediately after it passes roller 30 being embedded therein as it passes under roller 31, to which roller it will not cling to the same extent. It will thus be seen
 55 that use of this machine will be more economical than where the pounders are employed, as with the latter more or less fat or grease is wasted. After passing between the

rollers the now flat and solid slabs of meat are removed by other attendants or discharged 60 upon a second conveyer. (Not shown.)

By the mechanism shown the high speed of the motor or driving agent is reduced to the degree (in the movement of the conveyer and roller) corresponding to that with which a
 65 boy can place the belly-pieces upon the conveyer. The yielding pressure with which the rollers are held down to the work is sufficient to reduce the average belly-pieces to uniform thickness; but the springs will yield slightly
 70 to permit pieces of extra thickness to pass and be properly operated upon.

It will be understood, of course, that the special type of gearing described and illustrated in this application are not essential
 75 and that the invention is obviously susceptible of modification in various other particulars without departing from the principle of construction involved. As noiseless operation is greatly to be desired, we contemplate
 80 driving the machine by the motor with a rawhide pinion. The output of the machine will be approximately three thousand bellies per hour, and they will be of uniform thickness and require less labor to trim than by the
 85 methods now in common use.

Having thus described the invention, what we claim as new, and desire to secure by Letters Patent, is—

In a machine of the type described, the
 90 combination with the framework, bearings attached to one end thereof, a shaft journaled therein and having sprocket-wheels, a second shaft at the other end of the framework lo-
 95 cated normally higher than the first-mentioned shaft and having sprocket-wheels, bearings for this shaft having depending angle-arms sliding vertically in brackets on the framework, screws engaging said angle-arms and having gears, and a cross-shaft having
 100 gears meshing with those on the screws and provided with a crank-handle; of parallel bars having other bearings connected and mounted upon both said shafts, guides on said
 105 bars, a conveyer comprising chains traveling around said sprocket-wheels and cross-slats moving over the guides; and upper rollers mounted on the framework above the conveyer, as and for the purpose set forth.

In testimony whereof we affix our signatures in the presence of two witnesses.

JAMES McCLEAN.
 LESLIE E. PHIPPS.

Witnesses:

T. O. CUNNINGHAM,
 F. G. FISCHER.