

No. 882,295.

PATENTED MAR. 17, 1908.

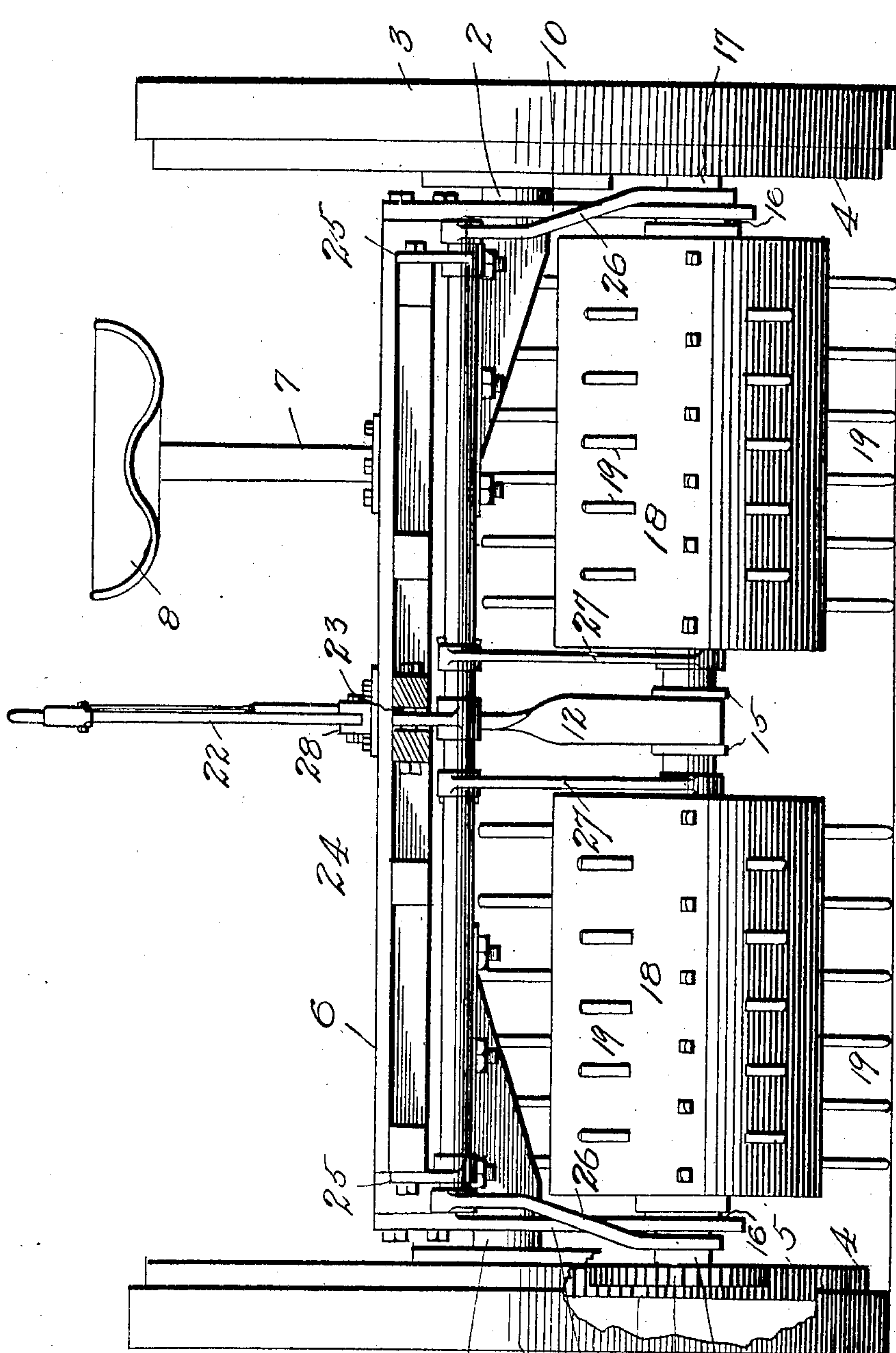
H. H. BUTLER & R. DECKER.

CLOD CRUSHER.

APPLICATION FILED NOV. 28, 1906.

2 SHEETS—SHEET 1.

Fig. 1



Witnesses  
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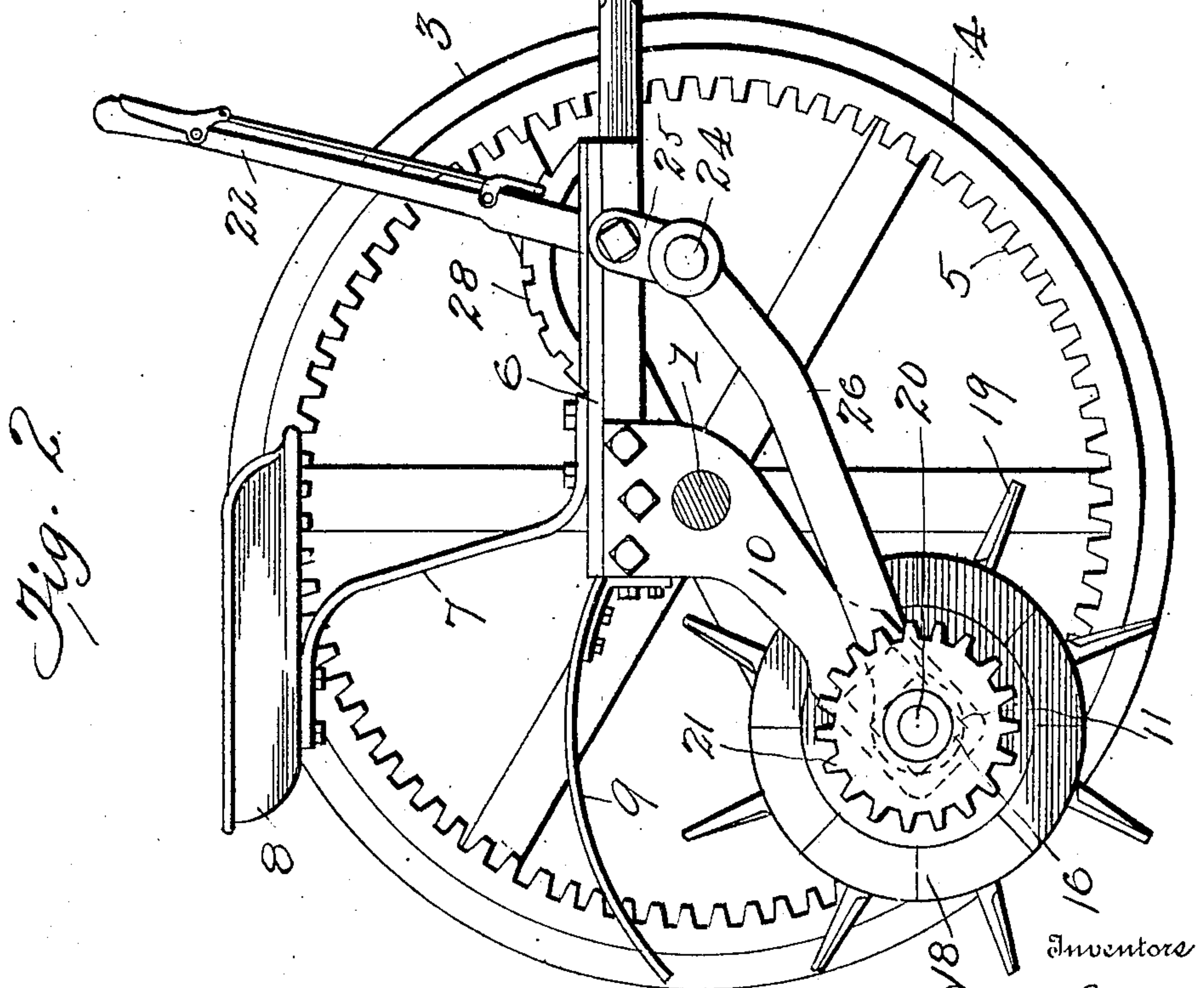
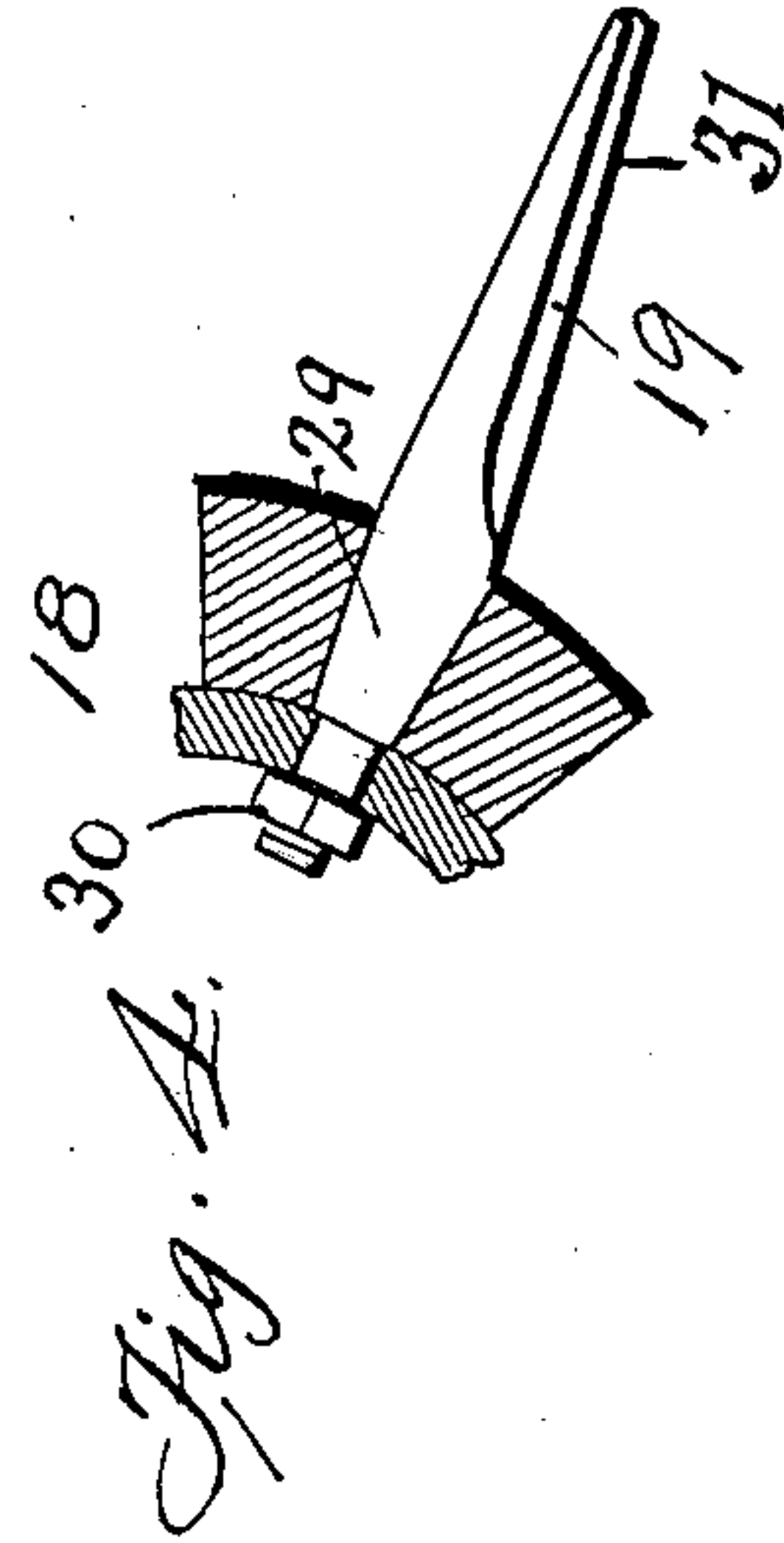
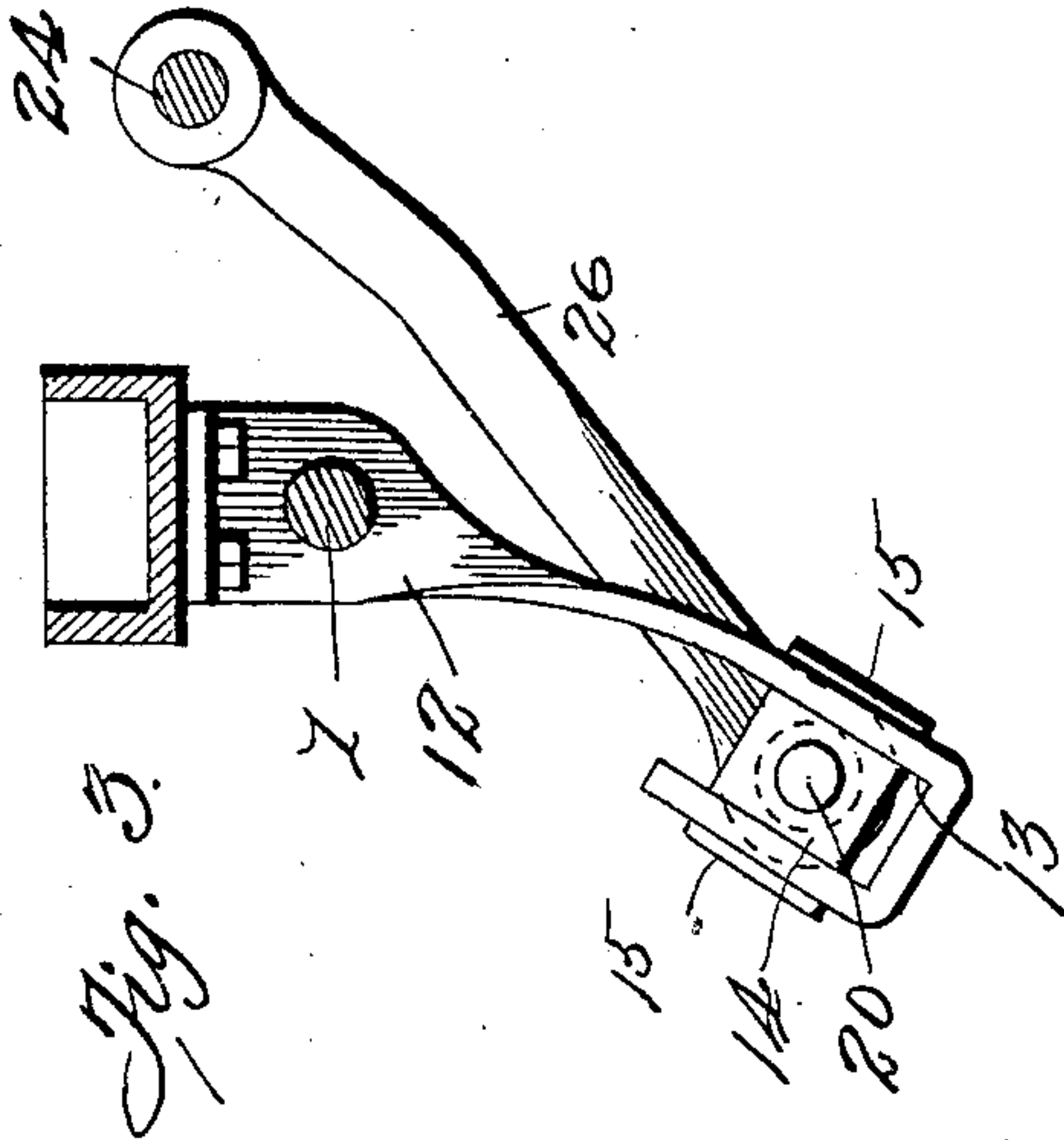
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2 SHEETS—SHEET 2.



Witnesses

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# UNITED STATES PATENT OFFICE.

HARRISON H. BUTLER AND RUDOLPH DECKER, OF MARINE CITY, MICHIGAN.

## CLOD-CRUSHER.

No. 882,295.

Specification of Letters Patent.

Patented March 17, 1908.

Application filed November 28, 1906. Serial No. 345,568.

*To all whom it may concern:*

Be it known that we, HARRISON H. BUTLER, and RUDOLPH DECKER, citizens of United States, residing at Marine City, in the county of St Clair and State of Michigan, have invented certain new and useful Improvements in Clod-Crushers, of which the following is a specification.

Our invention relates to improvements in clod crushers, and has for its object, the provision of a machine which will pulverize the soil in a thorough manner, and will be of simple and substantial construction.

Another object of our invention is the provision of simple and effective means for throwing the mechanism into and out of gear, and to provide crusher drums which will harrow and pulverize the ground with a minimum expenditure of energy.

To attain the desired objects, our invention comprises a clod crusher of the type known as a revolving harrow in which two independent crusher drums are driven from the wheels of the running gear, and in providing suitable lever connections for shifting the drums and throwing them into and out of operation.

The invention consists further in certain other novel features of construction, combination and arrangement of parts substantially as herein set forth, attention being invited to the accompanying drawings, in which:

Figure 1, is a front end elevation of our improved clod crusher. Fig. 2, is a side elevation of the machine, the near wheel being removed to more clearly show the crusher drums and connections. Fig. 3, is a detail broken view of the hanger and connections for supporting the inner ends of the crusher rolls. Fig. 4, is a detail view of one of the crusher teeth, the roll being shown in section.

Referring to the drawings in detail: the numeral 1, designates the axle which forms the main support to the running gear of the machine, and is provided at each end with journals 2, upon which are mounted the supporting wheels 3. These wheels are preferably formed with a broad outer tread, and on the inner face of the wheels is provided an annular flange 4, which on its inner periphery is formed with the cogs or gear teeth 5. A frame or platform 6, is supported upon the axle, and a seat post 7, rises from the platform, which carries the

seat 8. A curved fender 9, is also carried by the frame and extends rearward.

Depending from the axle near each end thereof are the supporting brackets or hangers 10, which incline rearwardly at an angle and are formed near their lower ends with an angular slot 11, therein. A similar bracket or hanger 12, depends centrally from the axle and is provided with a complementary slot 13, in alinement with the slots in the end hangers. Slidably engaged in the slot 13 of the central hanger, is a bearing block 14, provided on its longitudinal edges with the guiding flanges 15, which serve to retain it within the slot of the hanger.

Included within the slotted portion of the end hangers, are the bearing blocks 16, each formed with a collar extension or hub 17, on their outward ends. The crusher drums or cylinders 18, are preferably of hollow construction and are provided with teeth or spikes 19 for engagement with the ground. Each of the drums is mounted upon a shaft 20, the said shaft being journaled in one end (the outer end) in the bearing block carried in the end hanger, the inner end of the shaft being journaled in the central bearing block 14. Upon the outer end of each of the drum shafts, are secured the gear pinions 21, adapted to intermesh with the cogs on the supporting wheels.

The crusher cylinders are thrown into and out of gear in the following manner: An operating lever 22, is pivoted in the frame at 23, and at its lower end is connected with the shaft 24, which shaft is supported beneath the frame upon swinging links 25. Connecting rods 26, are engaged upon the ends of the shaft 24, and their lower ends are engaged upon the hubs 17, of the end bearing blocks. Similar connecting rods 27, extend downward from the central portion of the shaft 24, and engage the hub extensions on the bearing block 14. A segment plate 28, serves to hold the operating lever in any desired position. To throw the drums into operation, the operating lever is pushed forward, which swings the shaft 24, and through the connecting rods, depresses the bearing blocks in the slotted hangers until the pinions mesh with the driving gears, and a reverse movement of the lever lifts the crushing drums out of operative engagement.

The crusher teeth used on the crusher rolls are of novel form, comprising the tapering or wedge-shaped shank portion 29, adapted



to pass through the wall of the crusher roll, the teeth being secured in position by means of the securing nuts 30, which are mounted upon the inner threaded end of the teeth in engagement with the inner wall of the roll. The outstanding or cutting portion of the tooth is substantially rectangular in cross section, and is provided on one edge with the longitudinal sharpened cutting edge 31.

From the foregoing description taken in connection with the drawings, the many uses and advantages of our invention will be readily appreciated, and it will be evident that we have provided a crusher or soil pulverizer which accomplishes all the objects herein set forth.

We claim:

1. A clod crusher comprising a frame and supporting wheels having internal gear teeth, hangers depending from the frame, journal boxes slidably engaged in said hangers, crusher rolls journaled in said boxes and provided with gear pinions to mesh with the internal gear teeth on the wheels, a swinging shaft depending from the frame, links connected between the swinging shaft and journal

boxes and a handle for operating the swinging shaft for engaging or disengaging the rolls from the wheels.

2. A clod crusher comprising a supporting axle and wheels, a platform supported by the axle, the wheels having internal gear teeth, angular rearwardly extending hangers depending from the platform and forming guideways, journal boxes slidably engaged in the guideways of the hangers, crusher rolls having their axles journaled in the journal boxes, pinions on said axles meshing with the gear teeth on the supporting wheels, swinging links depending from the platform, a swinging shaft supported thereby, rods connected between said shaft and the journal boxes, a lever fulcrumed to shift the swinging shaft laterally, and a fender depending from the platform and overhanging the rolls.

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

HARRISON H. BUTLER.  
RUDOLPH DECKER.

Witnesses:

HALE P. SAPH,  
ROSCOE R. SAPH.