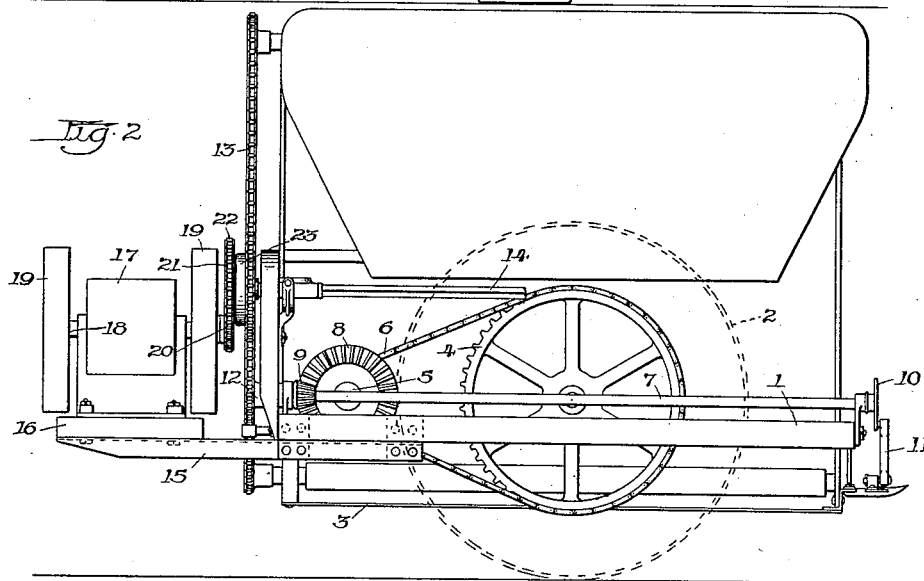
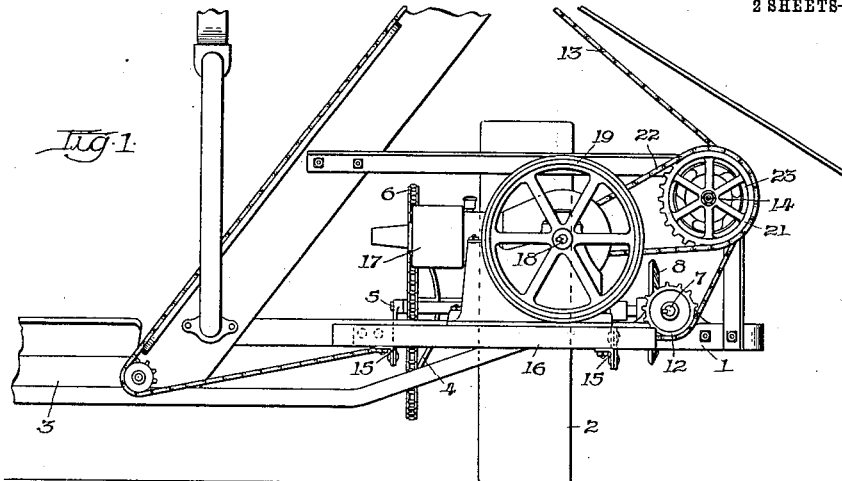


J. A. SHARP.
MOTOR ATTACHMENT FOR HARVESTERS.
APPLICATION FILED FEB. 28, 1910.

1,007,246.

Patented Oct. 31, 1911.

2 SHEETS—SHEET 1.



Witnesses:

F. W. Hoffmeister.

A. V. Schmitt.

Inventor:
James A. Sharp.

By E. W. Burgess
Attorney.

J. A. SHARP.
MOTOR ATTACHMENT FOR HARVESTERS.
APPLICATION FILED FEB. 28, 1910.

1,007,246.

Patented Oct. 31, 1911.

2 SHEETS—SHEET 2.

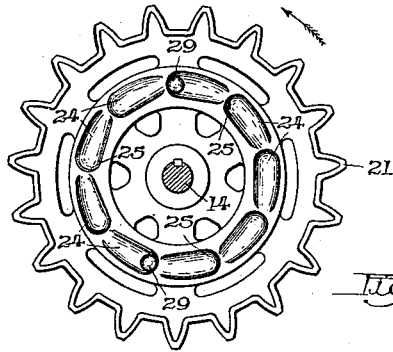


Fig. 3.

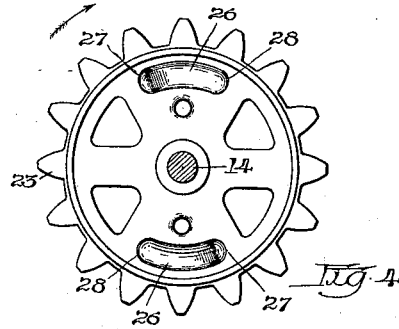


Fig. 4.

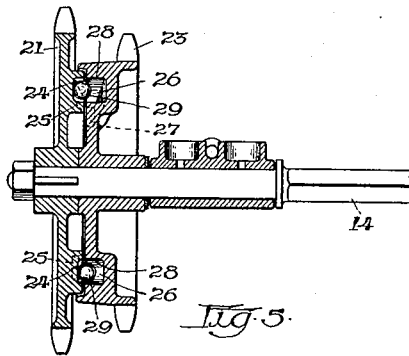


Fig. 5.

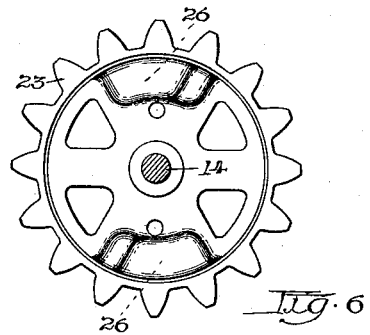


Fig. 6.

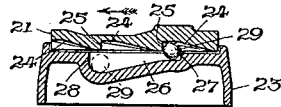


Fig. 7.

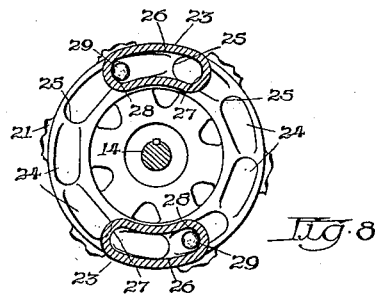


Fig. 8.

Witnesses:

F. W. Hoffmeister.

A. V. Smith.

Inventor.
James A. Sharp.

By E. W. Burgess
Attorney

UNITED STATES PATENT OFFICE.

JAMES A. SHARP, OF SPRINGFIELD, OHIO, ASSIGNOR TO INTERNATIONAL HARVESTER COMPANY, A CORPORATION OF NEW JERSEY.

MOTOR ATTACHMENT FOR HARVESTERS.

1,007,246.

Specification of Letters Patent.

Patented Oct. 31, 1911.

Application filed February 28, 1910. Serial No. 546,275.

To all whom it may concern:

Be it known that I, JAMES A. SHARP, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Motor Attachments for Harvesters, of which the following is a specification.

My invention relates to harvesters in the operation of which a motor, usually an explosive engine, is mounted in connection therewith in a manner to assist the power of the traction wheel in transmitting motion to the operative parts of the machine, the object of my invention being to provide a connection between the motor and one of the power transmitting shafts, preferably the binder driving shaft, whereby the normal power of the engine is utilized in driving the operative parts of the binding attachment independent of the power transmitted by the traction wheel within certain limits of speed of the motor and the draft animals. When the machine is drawn forward at a predetermined rate of speed by the draft animals, and the motor is running at its normal rate of speed, the power of the traction wheel is transmitted to all operative parts of the machine except those of the binding attachment, the latter being driven through their connection with the motor. If the machine be drawn forward at a high rate of speed, or the work to be performed by the binding attachment be sufficient to reduce the speed of the motor below its normal rate, the power of the traction wheel will then become available in assisting the motor to drive the operative parts of the binding attachment, the motor being adapted to drive the operative parts of the binding attachment either independent of the power derived from the traction wheel or jointly therewith.

These objects are attained by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a rear elevation of part of a harvester having my invention forming a part thereof; Fig. 2 is a side elevation of Fig. 1; Fig. 3 is a detail of part of the clutch mechanism connecting the two sources of power; Fig. 4 represents another detail of the clutch devices; Fig. 5 is a sectional elevation of the clutch mechanism designed to show the manner of connecting

it with the main driving shaft of the binder mechanism; Fig. 6 is a side elevation, partly in section, of part of Fig. 5; Fig. 7 is a cross section of the complementary members of the clutch devices; and Fig. 8 is a side view, partly in section, of one of the clutch members shown in Fig. 3.

The same reference characters designate like parts throughout the several views.

1 represents a wheel frame of a grain harvester supported by traction wheel 2, and 3 the grain platform, a part only being shown.

4 represents a main sprocket wheel mounted upon the traction wheel and rotating therewith, 5 the transversely arranged power transmitting shaft mounted upon the wheel frame in rear of the axle and having one end connected with the main sprocket wheel by means of chain 6, and its opposite end with a longitudinally arranged shaft 7 by means of the usual bevel gear 8 and pinion 9.

10 represents a crank wheel secured to the forward end of shaft 7, and 11 the pitman connecting the crank wheel with the cutting apparatus.

12 represents a sprocket wheel secured to the rear end of the shaft, from which motion is transmitted to the operative parts of the harvester by means of a chain 13.

14 represents the binder driving shaft of a common form, the binder mounted in the usual way upon the harvester frame.

All of the above noted parts are common in this class of machines and form no part of my invention.

15 represents supplemental frame bars secured to the wheel frame members and extending rearward of the machine have secured thereto a transverse member 16, upon which is mounted a common form of explosive engine 17, having a crank shaft 18, having secured thereto fly wheels 19 at opposite ends thereof, and 20 represents a sprocket wheel secured thereto adjacent one of the fly wheels.

21 represents a sprocket wheel secured to the rear end of the binder driving shaft 14 and connected with wheel 20 by means of a power transmitting chain 22.

23 represents a sprocket wheel journaled upon the binder driving shaft adjacent the wheel 21 and deriving motion from the traction wheels of the machine by means of the chain 13 and the other intermediate

power transmitting means, as before described. Sprocket wheels 21 and 23 are provided with clutch mechanism adapted to operatively connect the two under certain conditions, the mechanism including a series of cavities 24, annularly arranged upon the inner face of the wheel 21 and gradually increasing in depth in the direction of rotation thereof and terminating in shoulders 25 forming ratchet-like teeth at the ends of the cavities. Wheel 23 is provided with two diametrically arranged cavities 26 similar in form upon its inner face and terminating in shoulders 27 of little depth at that end opposite the direction of rotation of the wheel, and in shoulders 28 at their opposite ends that have a greater depth, forming annularly arranged pockets having greater increasing depth in the direction of rotation of the wheel that are adapted to receive balls 29 that cooperate with the cavities in a manner to clutch the wheels in operative relation under certain conditions as follows:

The engine, through its positive driving connection with the binder drive shaft and the clutch mechanism in position as shown by full lines in Fig. 7, will drive sprocket wheel 21, independent of the power transmitted from the traction wheel, at a speed controlled by the governor mechanism forming part of the engine construction when the forward rate of speed of the draft animals does not exceed a predetermined limit. If the speed of the draft animals exceed that limit or the load upon the engine, due to increase of labor of the binding attachment, operates to reduce the speed of the engine below its normal rate, sprocket wheel 23 will be caused to rotate faster than wheel 21 in a manner to cause the balls of the clutch mechanism to assume the position relative to the clutch cavities as shown in Fig. 7, whereby the power transmitted from the traction wheel cooperates with that of the motor in driving the operative parts of the binding attachment until the speed of the engine again reaches its normal rate or the advanced speed of the draft animals is checked, whereby wheel 21 is permitted to rotate faster than wheel 23, causing the clutch mechanism to be disengaged and thus allow the motor to operate independent of the traction wheel in transmitting its power to a portion of the operative parts of the machine.

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

1. A harvester including, in combination, a traction wheel, a wheel frame, power transmitting means connecting said traction wheel with all of the operative mechanism of said harvester, said operative mechanism including a grain binding attachment, said power transmitting means including a main

sprocket wheel secured to said traction wheel, a transversely arranged shaft mounted upon said wheel frame and operatively connected with said main sprocket wheel, a longitudinally arranged shaft mounted upon said wheel frame and operatively connected with said transverse shaft and provided with a sprocket wheel whereby motion is transmitted to the other operative parts of said harvester, a motor connected with said harvester, power transmitting mechanism including an automatically operative clutch mechanism connecting said motor with said binding attachment in a manner to transmit motion to less than all of the operative parts of said harvester by means of said clutch mechanism, said motor connection being adapted to drive said binding attachment independent of or jointly with said traction wheel.

2. A harvester including, in combination, a traction wheel, power transmitting means connecting said wheel with operative parts of the machine, a motor connected with said harvester, power transmitting mechanism connecting said motor with operative parts of the machine, including a clutch mechanism adapted to automatically connect or disconnect the two sources of power, controlled by the rate of speed of the engine relative to that of the draft animals.

3. A harvester including, in combination, a traction wheel, power transmitting means connecting said wheel with operative parts of the machine, a motor connected with said harvester, including a speed controlling mechanism, a binder attachment, power transmitting means connecting said motor with the operative parts of said binder attachment independent of said traction wheel when the engine is running at its normal rate of speed and jointly therewith when the speed of the engine is below its normal rate.

4. A harvester including, in combination, a traction wheel, power transmitting means connecting said wheel with the operative parts of the machine, a motor mounted upon said harvester, a binder driving shaft, power transmitting means connecting said motor with said binder driving shaft, including a sprocket wheel secured to said shaft, a sprocket wheel journaled upon said shaft adjacent the said first mentioned sprocket wheel and having power transmitting means connecting it with other operative parts of the harvester, including said traction wheel and a clutch mechanism operatively connecting the two sprocket wheels in a manner whereby said motor may transmit motion to the operative parts of the binding attachment independent of said traction wheel.

5. A harvester including, in combination, a traction wheel, power transmitting means connecting said wheel with operative parts of the machine, a motor mounted upon said

harvester, a binder driving shaft, power transmitting means connecting said motor with said binder shaft, including a sprocket wheel secured to said shaft, a sprocket wheel
5 journaled upon said shaft adjacent said first mentioned sprocket wheel and having power transmitting means connecting it with the operative parts of the harvester, including said traction wheel and a clutch mechanism
10 operatively connecting the two sprocket wheels whereby said traction wheel may transmit motion to all of the operative parts of the harvester, or to all of said parts excepting said binder driving shaft, dependent upon the relative forward speed of the draft 15 animals to the speed of said motor.

JAMES A. SHARP.

Witnesses:

M. B. KENDIG,

G. W. RUSSELL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."