

one quick revolution by the teeth on the disc, and in doing so a roller working along a cam has raised and closed the top of the gripper, tightly gripping the double strand and holding it while the twine is cut, and as the stripping hook removes the loop from the gripper, the ends are held and are drawn through the loop, thus completing the knot. The delivery arms attached to the revolving shaft now discharge the bundle and the needle returns to its place. While the bundle is being bound and delivered the grain brought up by the elevators is held back by the long curved needle-arm to prevent its becoming mixed with the knotter, and to permit of a clean separation of the bundles.

The bundles, or sheaves, may be delivered on to the ground or a sheaf carrier. The carrier is attached to the frame and is operated by a foot lever under control of the driver. It will carry as many as six sheaves, which are laid down at one place, thus saving much labour in gathering and stacking.

On all the binders, with the exception of the Frost and Wood, Fig. 13, the knotter driving-shaft is in the centre of the driving-wheel. On this, however, an eccentric lever wheel is used. When the bundle is being compressed and tied the chain draws on the long spokes, and when being delivered, it draws on the short spokes. The object of this arrangement is to obtain a greater power for compression, making a tight bundle, and for tying, thus making a more uniform draught by relieving the horses of the sudden and intermittent strains caused by the binding operation, and to give a quicker delivery of the bundle and return of the needle.

Adjustments.—A number of parts are capable of adjustment to meet the varying conditions of crops, land and weather, nearly all the adjustments being made by levers within convenient reach of the operator, and while the machine is in motion. The reel has a wide range of adjustment up and down, forward and back, by means of a hand and a foot lever, to enable it to pick up long, short, or tangled grain, and lay it evenly against the knife and on the platform canvas. It is balanced by a spring, making it easy to operate and permitting it to pass an obstruction without breakage. The tilt of the machine

is
of
do
bu
bi
sli
ad
cf
the
she
wo

wh
cor
cli
str
rea
the
rai
the
Ca
tha
wh
kee
con
aga
wo
in
are
thr
tra
red

agr
dra