

and deposit it on an elevating screen whose driving roller is the revolving cylinder. It is then carried to the top of the loader whence it falls on the waggon, where it is put in position by hand labour. The angle of elevation is automatically adjusted as the height of the load on the waggon increases. An upright frame supports several long wood slats which rest on the ascending hay to prevent its being carried away by wind or falling over the sides.

Grain Harvesting.—For harvesting grain only two operations are necessary—the cutting, and the tying of the bundles. There are two machines for cutting grain—the reaper and the self-binding harvester, or binder, as it is more generally called. The reaper simply cuts the grain, delivering it in gavels, which must afterwards be tied by hand. Of the reaper there are two varieties—the manual delivery and the automatic self-delivery. The binder both cuts the grain and ties it in sheaves. In the early days, when machines were first produced to take the labour of tying off the hands of the farmer, wire was used, but this had many disadvantages and gave much trouble to users. Experiment finally produced the twine-binding harvester of to-day, which ranks high, not only as a great time and labour saving machine, but as one of the greatest inventions of the nineteenth century.

Binders, Figs. 8, 9 and 10, Plate 3.—This is essentially a place-changing machine; it cuts the grain, binds it in compact sheaves and delivers the sheaves, but it in no way alters the form or condition of the grain itself. To do this there are six distinct operations, namely, reeling, cutting, elevating, packing, tying and discharging. The mechanism for each of the first four operations forms a complete machine in itself which can be worked independently, and those in which adjustment is necessary for varying conditions, are separately controlled by the operator, while the last two operations are worked together. The reel holds the grain against the knife until it is cut, then lays it on the moving platform canvas which carries it to the foot of the elevators. Here it is carried upward between two canvases to the

top
wor
req
a c
nee
com
the
bun
ope

stee
thro
On
and
driv
com
whe
driv
out
divi
divi
sup
It is
bey
whe

beve
com
is tl
over
elev
upp
Thi
low
The
driv