

Engines and Cutters for Silo Filling

We are agents for and carry in stock the Papec Pneumatic Ensilage Cutter

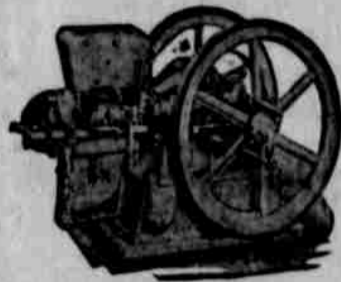
guaranteed to throw and blow ensilage to the top of any silo. Guaranteed also to elevate more ensilage with the same power than any other blower cutter. It is also guaranteed against defects and any part found defective will be replaced. Over 20,000 silo owners have found the Papec a highly profitable investment.

It's easy to set up or take down

The feed table does not have to be removed or propped up. It is ready for business as soon as the pipe is set up.

More Associated Engines

are sold today than any other kind. They combine reasonableness of price with superior quality to a remarkable degree. Nine sizes



from the Johnny Boy, with one and a half horse power to the Eighteen Mule Team engine with eighteen horse power. Every Associated engine is guaranteed to develop its full rated horse power and do its work in a satisfactory manner when operated according to printed instructions and given ordinary care and attention.

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WINEGAR & LORENCE, Monmouth

tween shots to make it hard for the Germans to locate us from the flash of the guns. Our engines, with the mufflers open to give us all possible speed, are roaring almost as loudly as the cannon it seems.

The Boches must be confused. They haven't fired on us yet. Searchlights are darting everywhere across the water and in the sky. Their one object is to find and destroy us, but they cannot figure out what to look for. They of course think we have come in through the channel, and their powerful rays sweep the entrance to the harbor and the waters just inside, while others play over the surface from whence we fired our first shots. They don't expect craft of our size to attempt such a daring raid.

How much damage we have done we do not know, but we cease firing

and double back, waiting until we are out of the zone from which we started to fight.

I do not suppose any of the Huns ever thought of the little motor launches. They seem jumpy in their nerves, judging by the way they handle the searchlights. Probably they think some new engine of warfare is attacking them, like the tanks which so surprised them in the trenches one fine day.

Umph! Suddenly I am blinded. I think for a hundredth of a second that I am shot, and my head is splitting. It is a searchlight, the rays full and square in my eyes. The gunner fires into the source of the light. It seems

to be coming from a gunboat. If he hits her he will be lucky, for it is impossible for us to see anything.

We can hear the "woomph-woomph" of shells dropping into the water around us. We have made up our minds that it is all over, but two of the other boats, not being blinded by the searchlights, turn their fire on our tormentor. If the Germans hold on us we are gone, but they seem to be in a frenzy, and while they sweep round, trying to pick up the other craft, we change our course, and they do not seem able to find us again. They fire on every stick of driftage and spar that darkens the surface of the illuminated water.

Out Over the Dangers of the Mines.

When the rising sun began to streak the sky we were safe. Way off to port lay the monitor we had passed the night before, and the Brass Hat, in command of the expedition, signaled us to run over to her and take account.

The monitor was one of a type much in evidence during the first years of the war, mounting heavy guns forward

in an armored turret. The guns were made in America, and most of the monitors were named after American generals.

They were used on work that took them constantly into the mine fields, and for that reason they must have special protection against mines and torpedoes. Just how this is accomplished I do not feel at liberty to tell, but because of it an amusing incident occurred. The first motor launch was running at rather low speed in toward the monitor, so as to come alongside. All of a sudden we saw her sort of climb out of the water, bow first, heel over and lie there as though she had run up on a bar.

A couple of "matloes" (sailors) on the deck of the monitor began swearing at the crew, and every man in the M. L. was thrown off his feet by the shock which stopped the boat. The swearing was not confined to the monitor's men. The M. L. had run high and dry on to the shelf which forms a part of the more or less intricate protection against torpedoes and mines that modern monitors carry. They had to use a crane to get her off.

Well, we had roll call and found only one man slightly hurt. A bit of shell had struck him in the shoulder. A piece the size of a man's palm was imbedded in the side of one of the M. L.'s. We had got off mighty lucky.

I might say here that later six other boats made the experiment again, and only one got back to England, so it isn't such a soft assignment. In that single craft were all the men from the five launches who had survived the hell they ran into. And there was plenty of room, for those who had been lost were many.

Under orders the survivors of that raid refrained from telling what actually happened, but in general it is true that the Germans must have realized what occurred on the first expedition, and they were ready. The element of surprise, which saved us all from going to kingdom come, was absent.

The officer in command of the one which was not destroyed cruised around in the glare of the searchlights until he had gathered in every living thing that still struggled in the water—a man's job in that searching glare of light and hail of shells.

The Hero.

"The sky was red over his head," said one of the men he picked up, "because of the vast number of illuminating bombs and rockets the Huns were using, besides the searchlights and the shells that were bursting. There was light enough to take a moving picture of the scene.

"Any human being would have run, but that chap's a devil or a god. He shouted orders to his men as though he were at maneuvers and fished us out of the water with a boat hook as coolly as if he were merely picking up a buoy and couldn't understand what all the racket was about.

"After he got me on board I saw him fall with the blood spurting from his leg. He grabbed a bit of rope, made a tourniquet himself, using the barrel of his revolver to twist it tight, and directed the work until he had all of us on board.

"How we ever penetrated that barrier of fire and lead and steel I don't know, but we came through and limped into port under our own power."

As I say, I was not on this expedition, and what few details other than those I heard I am not at liberty to tell.

Well, to go back to the monitor. We all went aboard and were given breakfast. In the ward room one of the officers told us some interesting things about their work.

"These tubs," he explained, referring to the monitors, "are not armored. We carry heavy guns forward, and the barbettes is the only part of the craft that is protected by armor plate.

"All along the coast we have buoys anchored to mark fire positions. We cruise along, pick up one of the buoys and let go a few shots. Of course we know the range and where the German forts and batteries are, although we can't see them. Sometimes we have hydroplanes observing for us, so that we can tell whether we're on the target, but we have been doing it so long and we have the coast so well plotted and the buoys so carefully planted that it's mostly a matter of mathematics.

"It's all very impersonal. We drop a few shells into a harbor or fort, then move on to a new position and drop a few more.

"The Germans don't seem to have any planes along the coast here, and they aren't able to reply with any accuracy whatever, for they can't see us, as we always fly day with a slight mist or haze and at night.

"But the other day we dropped down the coast for a little party, when all of a sudden, after our first shot, a shell plumped into the water just beyond us. We let go another, and the second German shell fell just a little short. Both were in line.

"We thought it was luck, so we moved to a new position. The same thing happened, only this time one shell came on board and did some damage and hurt some of our crew. Of course we thought the Huns must have some planes up giving the batteries our

range, but we couldn't spot one anywhere. This sort of thing kept up all morning until it became positively uncanny. The day was heavy with fog, making aerial observation difficult.

How the Germans Got the Range.

"Then an officer who had been an observer in the Russo-Japanese war explained it. The Japanese had used a system at Port Arthur to locate some hidden Russian batteries that this chap said the Germans must be employing, and I guess he was right. In fact, we know now that he was. How we confirmed our original opinion I cannot tell.

"Every one familiar with the principles of artillery fire knows that a shell does not travel in a straight line. It travels in a curve called the trajectory. Elevate a gun of a given caliber to a certain angle and fire it and the trajectory will always be practically the



After Our First Shot a Shell Plumped into the Water Just Beyond Us.

same. The curve varies constantly, becoming steeper as the velocity of the shell decreases and it begins to be affected more and more by gravity.

The Mathematics of It.

"Now, what the Germans had done was this. They erected a series of gauze screens—at least three—between us and a battery which we were accustomed to shell. To hit the target our shells must pass through these

screens. Electrical timing devices indicated the length of time the projectile required to travel between the screens, and of course the distance was already known.

"This gave the Germans the velocity of the shell when it reached the screen. The holes it made in the screens gave them three or more points in the curve. This enabled them to plot a section of the curve. They could tell from the explosion the size of the shell approximately. This would enable them to know the velocity with which the shell would leave the gun.

"With these elements—a section of the trajectory, the velocity of the shell when it reached the screens and a knowledge of the initial velocity of a certain sized shell—they had more than enough data to figure out exactly where the projectile came from.

"In fact, they could check themselves on it, because they could plot the whole curve from the section they had with their knowledge of the velocity, and they could figure the straight distance from the velocity of the shell when it reached the screens and the velocity they knew it must have when it left the muzzle of the cannon on board the monitor.

"The best proof that the system worked was the fact that, no matter where we moved to, their shots straddled us, and besides the one which came on board us one of our other ships got a shell in the boiler room."

Well, somebody's always taking the joy out of life, as we say in America.

After mess we left the monitor, the little damage which had been done the M. L. that ran up on the shelf having been repaired. Before we went down over the rim of the horizon we saw our friend the monitor steaming as fast as she could go toward some vessels flying the Dutch flag.

"D— all neutrals anyway," said the Brass Hat. He didn't mean that there was anything particularly reprehensible in being neutral, but if there were no neutrals we'd always know who to fire on and who not to. The trouble is that a lot of ships are cruising around under neutral flags and scattering mines in their wake.

"We're always nervous when we're in waters a neutral has just traversed. Down at Dover— But I'm getting ahead of myself. I will tell about what happened at Dover in my next article.

The fourth and concluding article of this series will appear soon. It is entitled

No. 4.—The Dangers of Dover.

Aeroplanes bombard the barracks and town. German submarines laying mines in the harbor channel. What happened on a destroyer the day after I had dinner on her with the officers whom later I saw crushed and torn to death.