

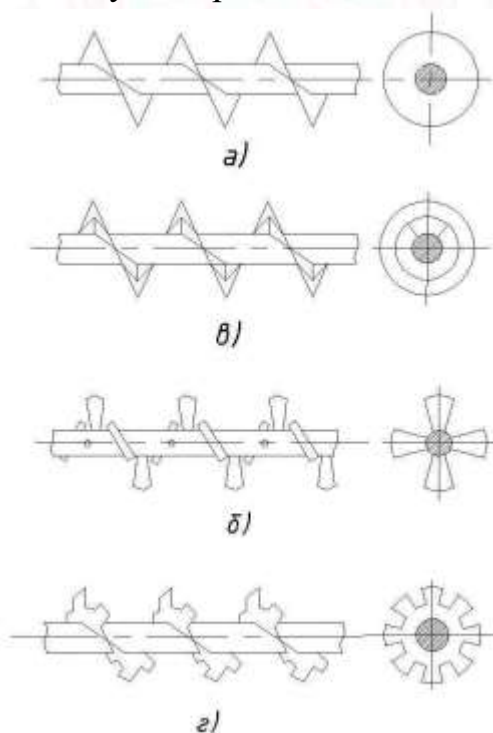
TAKOMILLASHGAN YO'L QURILISHI MATERIALLARINI YOYIB ZICHLOVCHI MASHINA UCHUN SHNEKLI ISH JIHOZINI TANLASH

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O'zbekiston Respublikasi Prezidenti Sh.M.Mirziyoyevning 2018 yil 27 noyabrdagi PQ – 4035 – son qarorida “Mamlakatning yo'l-transport infratuzilmasini jadal rivojlantirish, ilg'or texnologiyalar va eng yaxshi xorijiy tajribalarni joriy etish asosida loyiha va yo'l qurish ishlari sifatini yanada oshirish, shuningdek, 2017 — 2021-yillarda O'zbekiston Respublikasini rivojlantirishning beshta ustuvor yo'nalishi bo'yicha [Harakatlar strategiyasi](#) bilan uzviy bog'liqlikda yo'l qurish sohasida davlat boshqaruvi tizimini kompleks takomillashtirish maqsadida bir qancha fikrlar aytib o'tdi.

Shu maqsadda bugungi kunda yangi mashinalarni yaratish va mavjudlarini takomillashtirish bugungi kunning muammosidir. Oldingi tadqiqotlarimizda yo'l qurilishi materiallarini yoyib zichlovchi takomillashgan mashinaning tuzilishi haqida gapirib o'tganmiz. Olib borilayotgan tadqiqotlarimiz shuni ko'rsatadiki takomillashgan mashina uchun shneklarni tanlash va maqbulini amaliyotga joriy etish maqsadida bir qancha tadqiqotlar olib bormoqdamiz.

Shneklar tuzilishiga ko'ra yaxlit, parrakli va fasonli turlarga bo'linadi (1-rasm).



a) yaxlit; b) lentali; v) parrakli; g) fasonli

1-rasm. Shneklarning turlari

Shneklarning yaxlit turi sochiluvchan, donador va kukunsimon materiallarini, shu jumladan tuproqni harakatlanishida, lentali shneklar katta qattiq materiallar (yirik shag'al, qumtosh, ohaktosh va boshqalar) ni harakatlantirishda, parrakli va fasonli shneklar esa xamirsimon va loysimon hamda yopishqoq (sementli va qumli aralashmalar, beton qorishmasi) va materiallarni harakatlantirishda qo'llaniladi.

Yuqoridagi tavsiyalardan kelib chiqib yaxlit shnek turini tanlash maqsadga muvofiqdir.

Ilgari olib borilgan tadqiqotlar natijalari gorizontal o'q atrofida aylanayotgan shnek ta'siri ostida yo'l qurilishi materiallari bo'laklari uning o'qi bo'ylab harakatlanishini quyidagi differensial tenglamalar orqali ifodalash mumkinligini ko'rsatmoqda.

$$N_{uu} \cos \alpha_R - f_{uu} N_{uu} \sin \alpha_R - mR \left(\frac{d^2 \varphi}{dt^2} \right) - f_T N_T \cos \beta_R = 0; \quad (1)$$

$$mg \sin \varepsilon - f_T N_T \sin \beta_R - f_{uu} N_{uu} \sin \alpha_R - N_{uu} \sin \alpha_R - mR \left(\frac{d^2 \varphi}{dt^2} \right) = 0; \quad (2)$$

$$mg \cos \varepsilon - mR \omega_0^2 + mR \left(\frac{d\varphi}{dt} \right)^2 - N_T - 2mR \omega_0 \frac{d\varphi}{dt} = 0, \quad (3)$$

bunda N_{uu} – tuproq bo'lagiga shnek vinti ko'targan normal reaksiya kuchi;

f_{uu} – tuproqning shnek vintiga ishqalanish koeffisienti;

$\alpha_R = \arctg \frac{l_{uu}}{2\pi R}$ – shnekning tashqi radiusi bo'yicha vint chizig'ining ko'tarilish

burchagi;

$l_{uu} = 2\pi R t g \alpha_R$ – shnek qadami;

R – shnek vintining radiusi;

m – tuproq bo'lagining massasi;

g – erkin tushish tezlanishi;

N_T – tuproqning normal reaksiya kuchi;

f_T – tuproqning tuproqqa ishqalanish koeffisienti;

β_R – tuproq bo'lagining absolyut tezlik vektori bilan shnek o'qi orasidagi burchak;

$\varphi = \varphi(t)$ – shnekning doimiy burchak tezligi ω_0 bilan aylanishida tuproq bo'lagining orqaga qolish burchagi;

t – joriy vaqt;

$\frac{d\varphi}{dt} = \omega_T$ – tuproq bo'lagining harakatlanishidagi burchak tezligi;

ε – tuproq bo'lagining tik tekislikka nisbatan holatini aniqlovchi burchak, gradus;

$\psi = \omega_0 t$ – t vaqt ichida shnekning burilish burchagi;

$mR \frac{d^2\varphi}{dt^2}$ – urunma inersiya kuchi;

$m\omega_0^2 R$ – ko'chirma harakatdagi markazdan qochma inersiya kuchi;

$mR \left(\frac{d\varphi}{dt} \right)^2$ – nisbiy harakatdagi markazdan qochma inersiya kuchi;

$2m\omega_0 R \frac{d\varphi}{dt}$ – Koriolis kuchi;

$ma_R \frac{d^2\phi}{dt^2}$ – aksial inersiya kuchi.

Demak olib borilgan tadqiqotlarimizdan shuni ayta olamizki yo'l qurilishi materiallarini yoyib zichlovchi takomillashgan mashina uchun shnekli ish jihoz sifatida yaxlit shnek ishlatish maqsadga muvofiqdir.

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