

!"##\$%&' () *+*!' , \$(

(19) **RU** (11) **2 509 388** (13) **C2**



(51) 63&
H01G 7/00 (2006.01)

) *+*!' - . / ' (#- 012'
3" \$/4*- - *&40' - . / " % # " 2#45* / / " #4\$

(12) " 3\$# ' / \$* \$7" 2! *4* / \$ (& 3' 4* / 40

(21)(22) 78N<@8: 2012119251/07, 12.05.2012

(24) +8A8 ; 8C8MB 9A:CDA8 :E9@8 I DF:A<=N >8AD; A8:
12.05.2012

3E=9E=ADA(T):

(22) +8A8 >9I8C= 08N<@=: 12.05.2012

(43) +8A8 >?LM=@8K== 08N<@=: 20.11.2013 2PM Y 32

(45) " >?LM=@9<8; 9: 10.03.2014 2PM Y 7

(56) #>=:9@ I9@?UD; A9<, K=A=E9<8; ; TQ < 9ACDAD 9
>9=:@D: RU 2107385 C1, 20.03.1998. RU 2335820 C1,
10.10.2008. RU 2010123771 A, 20.12.2011. RU
2046429 C1, 20.10.1995. US 2003041427 A1,
06.03.2003.

' IED: IMN >DED>=:@=:

109456, 69:@<8, 1 5DS; N@9<: @=F >E-I, 2,
G/O 5\$ \ # ^ ! 9: : DMBQ908@8I DU==,
>8AD; A; TF 9AIDM, " .5. G9M?LD<9F

(72) ' <A9E(T):

#AEDL@9< +U=AE=F #DUD; 9<=C (RU),

59M@ SJ9EB 3DAE9<=C (RU),

39I9: =; ; =@9< ' MD@:8; IE ' ; 8A9MBD<=C
(RU),

39I9: =; ; =@9< ' ; 8A9M=F ' ; 8A9MBD<=C (RU)

(73) 38AD; A99LMBI 8ADMB(=):

G9: ?I8E: A<D; ; 9D ; 8?C; 9D ?CEDHI D; =D

5: DE9: : =F: @=F ; 8?C; 9-=: : MDI 9<8ADMB: @=F

=; : A=A?A WMD@AE=X=@8K== : DMB: @9J9

Q9ONF: A<8 (G/O 5\$ \ # ^

!" ##* - . ^ " 7' &' + * 6 \$ \$ \$) (RU).

#AEDL@9< +U=AE=F #DUD; 9<=C (RU),

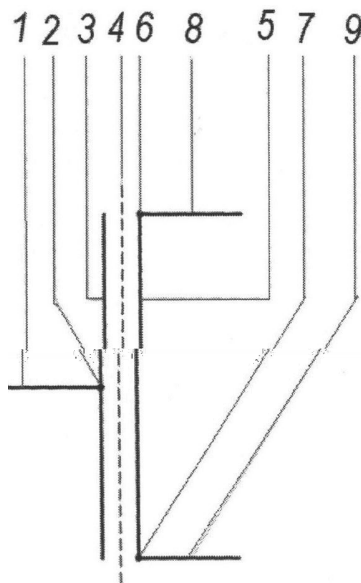
39I9: =; ; =@9< ' MD@:8; IE ' ; 8A9MBD<=C (RU)

(54) ! *7" / ' / # /] % \ - * & 4! \$ f * # & \$ % & " / + * / # ' 4" ! # 4! * 2 & " 5' - 3" + " # \$ / / \$ & " 5'
(5' ! \$ ' / 4])

(57) ! DXDE8A:

S09LEDAD; =D 9A; 9:=A: N @ 9LMB: A=
WMD@AE9ADQ; =@=, < C8: A; 9: A= @ 9LMB: A=
ED09; 8; ; ; TQ < T: 9@9C8: A9A; TQ WMD@AE=CD: @=Q
@9; ID; : 8A9E9< IMN >ED9LE809<8; =N = >DEDI 8C=
WMD@AE=CD: @9F W; DEJ==. 4DQ; =CD: @=F EDO?MBA8A
08@MPC8DA: N < ; ; =HD; == W; DEJDA=CD: @=Q 08AE8A
; 8 JD; DE=E9<8; =D WMD@AE9U8J; =A; TQ < 9M; =
>9ADEB >E= >DEDI 8CD WMD@AE=CD: @9F W; DEJ==.
4DQ; =CD: @=F EDO?MBA8A I 9: A=J8DA: N ADU, CA9 <
WMD@AE=CD: @9U @9; ID; : 8A9ED, : 9IDEH8RDU
9L@MBI@= < <=ID MD; A =0 >E9<9INRDJ9
U8ADE=8MB, : M@F >MD; 9C; 9J9 I=WMD@AE=@8,
E8: >9M@HD; ; 9J9 UDHI? 9L@MBI@8U=, =
WMD@AE9IT, : 9DI=; D; ; TD : 9L@MBI@8U= =
< ; DS; =U= < T< 9I8U= @9; ID; : 8A9E8,
WMD@AE=CD: @=F @9; ID; : 8A9E : 9IDEH=A I<D
9L@MBI@= : AEDUN WMD@AE9I8U=, >E=CDU >DE<TF
WMD@AE9I >E=: 9DI=; D; @ : DEDI=; D >DE<9F
9L@MBI@=, 8 <A9E8N 9L@MBI@8 =UDDA I<8

WMD@AE9I8, >E=: 9DI=; D; ; TQ @ @9; K8U
9L@MBI@= . 4 ; . = 7 0 . > . X-MT, 8 = M



Фиг. 1



FEDERAL SERVICE
FOR INTELLECTUAL PROPERTY

(12) ABSTRACT OF INVENTION(21)(22) Application: **2012119251/07, 12.05.2012**(24) Effective date for property rights:
12.05.2012

Priority:

(22) Date of filing: **12.05.2012**(43) Application published: **20.11.2013 Bull. 32**(45) Date of publication: **10.03.2014 Bull. 7**

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(54) RESONANT ELECTRIC CAPACITOR BY STREBKOV-PODOSINNIKOV (VERSIONS)

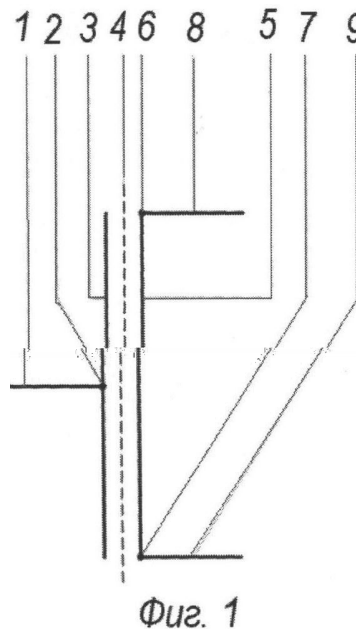
(57) Abstract:

FIELD: electricity.

SUBSTANCE: in an electric capacitor comprising plates in the form of tapes from conducting material, a layer of a film dielectric arranged between plates, and electrodes connected to plates and external leads of the capacitor, the electric capacitor comprises two plates with three electrodes. The first electrode is connected to the middle of the first plate, and the second plate has two electrodes connected to the ends of the plate.

EFFECT: reduced energy costs for generation of electromagnetic waves and losses during transfer of electric energy.

11 cl, 4 dwg



S09LEDAD; =D 9A; 9: =A: N @ 9LMB: A= WMD@AE9ADQ; =@=, < C8: A; 9: A= @ 9LMB: A= ED09; 8; ; TQ <T: 9@9C8: A9A; TQ WMD@AE=CD: @=Q @9; ID; : 8A9E9< I MN >ED9LE809<8; =N = >DEDI 8C= WMD@AE=CD: @9F W DEJ==. S0<D: AD; WMD@AE=CD: @=F @9; ID; : 8A9E, : 9: A9NR=F =0 I<?Q E80; 9=UD; ; 9 08ENHD; ; TQ >E9<9I; =@9<, >E= WA9U 08ENI, @9A9ETF ; 8I9 >DED; D: A= : 9I; 9J9 >E9<9I; =@8 ; 8 IE?J9F, CA9LT 08ENI=AB 9I=; =0 ; =Q 9AE=K8ADMB; 9, 8 IE?J9F >9M9H=ADMB; 9, ; 80T<8DA: N 08ENI 9U @9; ID; : 8A9E8. ! 80; 9: AB >9AD; K=8M9< U UDHI? 9L@MBI@8U= @9; ID; : 8A9E8 >ENU9 >E9>9EK=9; 8MB; 8 <DM=C=; D 08ENI 8 Q, ; 8Q9INRDU9: N ; 8 @8HI 9F =0 ; =Q: Q=CU.

38E8UDAET, @9; : AE?@K=N = 9LMB: AB >E=UD; D; =N WMD@AE=CD: @=Q @9; ID; : 8A9E9< 9>EDIDMNP: A: N I=WMD@AE=@9U, E80IDMNP: R=U DJ9 9L@MBI@=, >9WA9U? 9: ; 9<; 8N @MB: : =X=@8K=N WMD@AE=CD: @=Q @9; ID; : 8A9E9< >E9<9I=A: N >9 A=>? I=WMD@AE=@8. 5 08<=: =U9: A= 9A A=>8 =: >9MB0?DU9J9 I=WMD@AE=@8 WMD@AE=CD: @=D @9; ID; : 8A9ET U9J?A LTAB <90I?S; TD, L?U8H; TD, : MPIN; TD, @DE8U=CD: @=D, WMD@AE9M=A=CD: @=D = IE.

39 DU@9: A= E80M=C8PA WMD@AE=CD: @=D @9; ID; : 8A9ET >9: A9N; ; 9F DU@9: A= = @9; ID; : 8A9ET >DEDUD; ; 9F DU@9: A= . &9; ID; : 8A9ET >DEDUD; ; 9F DU@9: A= = >9M?>DEDUD; ; TD =0J9A9<MNP: A: N : UDQ8; =CD: @= = WMD@AE=CD: @= ?>E8<MNDU9F DU@9: ABP. S0UD; D; =D DU@9: A= < WMD@AE=CD: @9U @9; ID; : 8A9ED: UDQ8; =CD: @=U ?>E8<MD; =DU I9: A=J8DA: N C8RD <: DJ9 =0UD; D; =DU >M9R8I= DJ9 9L@MBI 9@ =M= =0UD; D; =DU 0809E8 UDHI? 9L@MBI@8U=. 3E9: ADFS=F <90I?S; TF @9; ID; : 8A9E >DEDUD; ; 9F DU@9: A= : 9: A9=A =0 I<?Q =09M=E9<8; ; TQ : =: ADU UDA8MM=CD: @=Q >MB: A=; , @9A9ETD <Q9INA IE?J < IE?J8 >E= <E8RD; == E?@9NA@=: 9I; 8 JE?>>8 (E9A9E) U9HDA >DEDUDR8AB: N A8@, CA9 DD >MB: A=; T 08Q9INA < 0809ET UDHI? >MB: A=; 8U= IE?J9F JE?>>T (: A8A9E8). 5I<=J8N = <TI<=J8N 9I; ? : =: ADU? >MB: A=; < IE?J?P, U9H; 9 =0UD; =AB DU@9: AB @9; ID; : 8A9E8. \MD@AE=CD: @=D @9; ID; : 8A9ET >DEDUD; ; 9F DU@9: A= : A<DEITU I=WMD@AE=@9U (@DE8U=CD: @=D, : MPIN; TD, : AD@MN; ; TD, >MD; 9C; TD) < 9: ; 9<; 9U =: >9MB0?PA: N @8@ >9M?>DEDUD; ; TD (>9I: AE9C; TD) : 9A; 9: =ADMB; 9 ; DL9MBS=U =0UD; D; =DU DU@9: A= . (- =A.: ! D; ; D 5.4. \MD@AE=CD: @=D @9; ID; : 8A9ET, 3 =0I., - ., 1969).

\MD@AE=CD: @=F @9; ID; : 8A9E =: >9MB0?PA < @8CD: A<D >8: : =<; 9J9 WMD@AE9; ; 9J9 @9U>9; D; A8 ; 8 C8: A9A8Q f<f_p; ; 8 @9A9ETQ DJ9 : 9>E9A=<MD; =D ; 9: =A DU@9: A; TF Q8E8@ADE, JID f_p - ED09; 8; ; 8N C8: A9A8.

" LTC; 9 U8@=: U8MB; 8N E8L9C8N C8: A9A8 WMD@AE=CD: @9J9 @9; ID; : 8A9E8 ; 9: =A DU@9: A; TF Q8E8@ADE <http://m.wikipedia.org/wiki/@9; ID; : 8A9E>.

/ DI 9: A8A@9U =0<D: A; TQ WMD@AE=CD: @=Q @9; ID; : 8A9E9< N<MND: A: N E8<D; : A<9 ; 8>ENHD; =F ; 8 9L@MBI@8Q = ; D<90U9H; 9: AB =0UD; D; =N ; 8>ENHD; =N ; 8 WMD@AE9I 8Q < ED09; 8; ; TQ 9I; 9>E9<9I; TQ M=; =NQ.

+E?J=U ; DI 9: A8A@9U =0<D: A; TQ WMD@AE=CD: @=Q @9; ID; : 8A9E9< N<MND: A: N ; D<90U9H; 9: AB =: >9MB09<8; =N =Q < ED09; 8; ; TQ <T: 9@9<9MBA; TQ <T: 9@9C8: A9A; TQ <9M; 9<9I; TQ M=; =NQ < @8CD: A<D >E=DU; =@8, >DEDI 8AC=@8 =M= >ED9LE809<8ADMN DU@9: A; TQ ED8@A=<; TQ A9@9< = A9@9< : UDRD; =N < 9I; 9>E9<9I; 9F M=; == =M= 9I; 9M=; DF; 9U >E9<9INRDU @8; 8MD < EDH=UD ED09; 8; : 8 ; 8>ENHD; =F =M= ED09; 8; : 8 A9@9<.

78I8CDF >EDIMBJ8DU9J9 =09LEDAD; =N N<MND: A: N : 90I8; =D U; 9J9WMD@AE9I; TQ WMD@AE=CD: @=Q @9; ID; : 8A9E9< I MN E8L9AT < >DEDI 8PR=Q, >ED9LE80?PR=Q = >E=DU; TQ @9; A?E8Q = < 9I; 9>E9<9I; TQ M=; =NQ. 4DQ; =CD: @=F ED0?MBA8A 08@MPC8DA: N < : ; =HD; == W DEJDA=CD: @=Q 08AE8A ; 8 JD; DE=E9<8; =D WMD@AE9U8J; =A; TQ <9M; = >9ADEB >E= >DEDI 8CD WMD@AE=CD: @9F W DEJ==.

4DQ; =CD: @=F ED0?MBA8A I 9: A=J8DA: N ADU, CA9 < WMD@AE=CD: @9U @9; ID; : 8A9ED #AEDL@9<8-39I 9: =; ; =@9<8, : 9I DEH8RDU 9L@MBI@= < <=ID MD; A=0 >E9<9INRDU9

U8ADE=8MB, :M9F >MD; 9C; 9J9 I=WMD@AE=@8, E8:>9M9HD; ; 9J9 UDHI? 9L@MBI@8U=, =
WMD@AE9IT, :9DI=; D; ; TD: 9L@MBI@8U= <= <DS; =U= <T<9I8U= @9; ID; :8A9E8,
WMD@AE=CD:@=F @9; ID; :8A9E:9IDEH=A I<D 9L@MBI@=: AEDUN WMD@AE9I8U=, >E=CDU
>DE<TF WMD@AE9I >E=:9DI=; D; @:DEDI=; D>DE<9F 9L@MBI@=, 8 <A9E8N 9L@MBI@8 =UDDA
5 I<8 WMD@AE9I8, >E=:9DI=; D; ; TQ @ @9; K8U 9L@MBI@=.

5 <8E=8; AD @9; :AE?@K== WMD@AE=CD:@9J9 @9; ID; :8A9E8 #AEDL@9<8-39I9=:; ; =@9<8
>DE<8N = <A9E8N 9L@MBI@=: 9 :M9DU I=WMD@AE=@8 08@MPCD; T < W@E8; =E?PR=F @9E>?:
=0 >E9<9INRDJ9 U8ADE=8MB : AEDUN 9A<DE:A=NU= IMN <; DS; =Q <T<9I9< AEDQ

10 WMD@AE9I9<, 08@MPCD; ; TQ < I=WMD@AE=CD:@=D L9LTS@=.

5 IE?J9U <8E=8; AD @9; :AE?@K== WMD@AE=CD:@9J9 @9; ID; :8A9E8 #AEDL@9<8-
39I9=:; ; =@9<8, :9IDEH8RDJ9 9L@MBI@= < <=ID MD; A =0 >E9<9INRDJ9 U8ADE=8MB,
=09M=E9<8; ; TD>MD; 9C; TU I=WMD@AE=@9U, = WMD@AE9IT, :9DI=; D; ; TD: 9L@MBI@8U= = :
<; DS; =U= <T<9I8U= @9; ID; :8A9E8, WMD@AE=CD:@=F @9; ID; :8A9E #AEDL@9<8-
15 39I9=:; ; =@9<8 :9IDEH=A CDATED 9I=; 8@9<9F >M9R8I= = E8OUDE9< 9L@MBI@=,
; 8U9A8; ; TD; 8 I=WMD@AE=CD:@?P @8A?S@?, >DE<8N = <A9E8N 9L@MBI@= =UDPA >9
9I; 9U? WMD@AE9I?, WMD@AE9I >DE<9F 9L@MBI@= E8:>9M9HD; <9 <; ?AED; ; DU
>E9:AE8; :A<D @8A?S@=, 8 WMD@AE9I <A9E9F 9L@MBI@=?:A8; 9<MD; <9 <; DS; DU
>E9:AE8; :A<D @8A?S@=, 8 AEDABN = CDA<DEA8N 9L@MBI@= =UDPA >9 I<8 WMD@AE9I8,
20 <A9E8N, AEDABN = CDA<DEA8N 9L@MBI@=: @9UU?A=E9<8; T >9:MDI9<8ADM; 9 A8@=U
9LE809U, CA9 WMD@AE9I <A9E9F 9L@MBI@=, E8:>9M9HD; ; TF <9 <; DS; DU >E9:AE8; :A<D
@8A?S@=, >E=:9DI=; D; @ <; ?AED; ; DU? WMD@AE9I? AEDABDF 9L@MBI@=: I<?UN
WMD@AE9I8U=, ? @9A9E9F <; DS; =F WMD@AE9I :9DI=; D; : <; ?AED; ; =U WMD@AE9I9U
25 CDA<DEA9F I<?QWMD@AE9I; 9F 9L@MBI@=, 8 <; ?AED; ; =F WMD@AE9I CDA<DEA9F
I<?QWMD@AE9I; 9F 9L@MBI@= = WMD@AE9I >DE<9F 9L@MBI@= >E=:9DI=; D; T @ <; DS; =U
<T<9I8U IMN @9UU?A8K== < 9I; 9>E9<9I; 9F M=; ==.

5 <8E=8; AD @9; :AE?@K== WMD@AE=CD:@9J9 @9; ID; :8A9E8 #AEDL@9<8-39I9=:; ; =@9<8
30 <:D CDATED 9L@MBI@=: >MD; 9C; TU I=WMD@AE=@9U >9UDRD; T < W@E8; =E9<8; ; TF @9E>?:
=0 >E9<9INRDJ9 U8ADE=8MB.

5 <8E=8; AD @9; :AE?@K== WMD@AE=CD:@9J9 @9; ID; :8A9E8 #AEDL@9<8-39I9=:; ; =@9<8
W@E8; =E9<8; ; TF @9E>?: =UDDA SD:AB 9A<DE:A=F IMN <; DS; =Q <T<9I9< SD:A=
WMD@AE9I9<, 08@MPCD; ; TQ < I=WMD@AE=CD:@=D L9LTS@=.

5 IE?J9U <8E=8; AD @9; :AE?@K== WMD@AE=CD:@9J9 ED09; 8; ; 9J9 @9; ID; :8A9E8
#AEDL@9<8-39I9=:; ; =@9<8, :9IDEH8RDJ9 9L@MBI@= < <=ID MD; A =0 >E9<9INRDJ9
U8ADE=8MB, =09M=E9<8; ; TD>MD; 9C; TU I=WMD@AE=@9U, = WMD@AE9IT, :9DI=; D; ; TD:
9L@MBI@8U= = : <; DS; =U= <T<9I8U= @9; ID; :8A9E8, WMD@AE=CD:@=F @9; ID; :8A9E
40 #AEDL@9<8-39I9=:; ; =@9<8 :9IDEH=A CDATED 9I=; 8@9<9F >M9R8I= = E8OUDE9<
9L@MBI@=, ; 8U9A8; ; TD; 8 I=WMD@AE=CD:@?P @8A?S@?, >DE<8N, <A9E8N = CDA<DEA8N
9L@MBI@= =UDPA >9 9I; 9U? WMD@AE9I?, 8 AEDABN 9L@MBI@8 :9IDEH=A I<8 WMD@AE9I8,
9I=; =0 @9A9ETQ :9DI=; D; : WMD@AE9I9U <A9E9F 9L@MBI@=, 8 IE?J9F WMD@AE9I <A9E9F
9L@MBI@= = WMD@AE9I >DE<9F 9L@MBI@= >E=:9DI=; D; T @ <; DS; =U <T<9I8U
45 @9; ID; :8A9E8 IMN @9UU?A8K== < I<?Q>E9<9I; 9F KD>=, 8 WMD@AE9I CDA<DEA9F 9L@MBI@=
>E=:9DI=; D; @:DEDI=; D CDA<DEA9F 9L@MBI@= :9DI=; D; : <; DS; =U <T<9I9U
@9; ID; :8A9E8 IMN @9UU?A8K== < 9I; 9>E9<9I; 9F M=; ==.

5 <8E=8; AD @9; :AE?@K== WMD@AE=CD:@9J9 @9; ID; :8A9E8 #AEDL@9<8-39I9=:; ; =@9<8
50 <:D CDATED 9L@MBI@=: >MD; 9C; TU I=WMD@AE=@9U >9UDRD; T < W@E8; =E9<8; ; TF @9E>?:
=0 >E9<9INRDJ9 U8ADE=8MB.

* RD < 9I; 9U <8E=8; AD @9; :AE?@K== WMD@AE=CD:@9J9 @9; ID; :8A9E8 #AEDL@9<8-
39I9=:; ; =@9<8 W@E8; =E9<8; ; TF @9E>?: =UDDA >NAB >E9Q9I; TQ =09MNA9E9< IMN

<; DS; =Q <T<9I 9< >NA= WMD@AE9I 9< 9A CDATEDQ 9L@MBI 9@ @9; ID; : 8A9E8.

5 <8E=8; AD@9; :AE?@K== WMD@AE=CD:@9J9 @9; ID; : 8A9E8 #AEDL@9<8-39I 9: =; ; =@9<8, : 9IDEH8RDJ9 9L@MBI @ = < <=ID MD; A =0>E9<9INRDJ9 U8ADE=8MB, =09M=E9<8; ; TD >MD; 9C; TU I=WMD@AE=@9U, = WMD@AE9I T, : 9DI =; D; ; TD : 9L@MBI @8U=, WMD@AE=CD:@=F @9; ID; : 8A9E #AEDL@9<8-39I 9: =; ; =@9<8 : 9IDEH=A CDATED =09M=E9<8; ; TD IE?J 9A IE?J8 9L@MBI @ = 9I =; 8@9<9F >M9R8I = = E80UDE9<; ; 8U9A8; ; TD; 8 I=WMD@AE=CD:@?P @8A?S@?, <; D CDATED 9L@MBI @ = : 9IDEH8A >9 9I; 9U? WMD@AE9I?, WMD@AE9I T >DE<9F = AEDABDF 9L@MBI @ = = WMD@AE9I T <A9E9F = CDA<DEA9F 9L@MBI @ = >E=: 9DI =; D; T @ <; DS; =U <T<9I 8U @9; ID; : 8A9E8 IMN @9UU?A8K== < I<?Q>E9<9I; 9F KD>=.

5 <8E=8; AD@9; :AE?@K== X=J.1 <; D CDATED 9L@MBI @ = : >MD; 9C; TU I=WMD@AE=@9U >9UDRD; T < W@E8; =E9<8; ; TF @9E>?: =0>E9<9INRDJ9 U8ADE=8MB.

5 <8E=8; AD@9; :AE?@K== WMD@AE=CD:@9J9 ED09; 8; ; 9J9 @9; ID; : 8A9E8 #AEDL@9<8-39I 9: =; ; =@9<8 W@E8; =E9<8; ; TF @9E>?: =UDDA CDATED <; DS; =Q <T<9I 8 : >E9Q9I; TU= =09MNA9E8U=, >E=: 9DI =; D; ; TU= @ CDATEDU WMD@AE9I 8U 9A CDATEDQ 9L@MBI 9@ @9; ID; : 8A9E8.

#?R; 9: AB >EDIMBJ8DU9J9 ? : AE9F: A<8 >9N: ; NDA: N X=J.1 - 8, JID; 8 X=J.1 >EDI: A8<MD; 8 9LR8N : QDU8 WMD@AE=CD:@9J9 ED09; 8; ; 9J9 AEDQWMD@AE9I; 9J9 @9; ID; : 8A9E8 #AEDL@9<8-39I 9: =; ; =@9<8 : =:>9MB09<8; =DU I<?Q =09M=E9<8; ; TQ I=WMD@AE=@9U 9L@MBI 9@, 9I; 8 =0 @9A9ETQ =UDDA I<8 WMD@AE9I 8 IMN >9I @MPCD; =N @ 08U@; ?A9F WMD@AE=CD:@9F KD>=, ; 8 X=J.2 >EDI: A8<MD; U8@DA =:>9M; D; =N ED09; 8; ; 9J9 AEDQWMD@AE9I; 9J9 @9; ID; : 8A9E8 < <=ID I<?Q UDI; TQ MD; A = >MD; 9C; 9J9 I=WMD@AE=@8, ; 8U9A8; ; 9J9 ; 8 @8A?S@?, ; 8 X=J.3 >EDI: A8<MD; U8@DA ED09; 8; ; 9J9 AEDQWMD@AE9I; 9J9 @9; ID; : 8A9E8, 08@MPCD; ; 9J9 < UDA8MM=CD:@=F W@E8; IMN W@E8; =E9<8; =N >8E80=A; TQ WMD@AE9U8J; =A; TQ S?U9<; ; 8 X=J.4 >EDI: A8<MD; 8 LM9@-: QDU8 WMD@AE=CD:@9J9 ED09; 8; ; 9J9 @9; ID; : 8A9E8 #AEDL@9<8-39I 9: =; ; =@9<8 : =:>9MB09<8; =DU CDATEDQ =09M=E9<8; ; TQ I=WMD@AE=@9U 9L@MBI 9@ : SD: ABP WMD@AE9I 8U=, ; 8 X=J.5 - @9; : AE?@K=N ED09; 8; ; 9J9 WMD@AE=CD:@9J9 @9; ID; : 8A9E8 #AEDL@9<8-39I 9: =; ; =@9<8 : CDATEBUN 9L@MBI @8U= = SD: ABP WMD@AE9I 8U=, ; 8 X=J.6 - LM9@-: QDU8 WMD@AE=CD:@9J9 ED09; 8; ; 9J9 @9; ID; : 8A9E8 #AEDL@9<8-39I 9: =; ; =@9<8 : CDATEBUN 9L@MBI @8U= = >NABP WMD@AE9I 8U=, ; 8 X=J.7 - : QDU8 <@MPCD; =N WMD@AE=CD:@9J9 ED09; 8; ; 9J9 @9; ID; : 8A9E8 : CDATEBUN WMD@AE=CD:@=U= 9L@MBI @8U= = >NABP WMD@AE9I 8U= < WMD@AE=CD:@?P : DAB, ; 8 X=J.8 - LM9@-: QDU8 WMD@AE=CD:@9J9 ED09; 8; ; 9J9 @9; ID; : 8A9E8 #AEDL@9<8-39I 9: =; ; =@9<8 : CDATEBUN 9L@MBI @8U= = CDATEBUN WMD@AE9I 8U=.

\MD@AE=CD:@=F ED09; 8; ; TF AEDQWMD@AE9I; TF @9; ID; : 8A9E #AEDL@9<8-39I 9: =; ; =@9<8 ; 8 LM9@-: QDUD X=J.1 : 9IDEH=A WMD@AE9I 1, : =UUDAE=C; 9 : 9DI =; D; ; TF < A9C@D 2 < : DEDI =; D 9L@MBI @ = 3, @9A9E8N =09M=E9<8; 8 : M9DU >MD; 9C; 9J9 I=WMD@AE=@8 4 9A 9L@MBI @ = 5, @ @9; K8U @9A9E9F 6 = 7 >E=: 9DI =; D; T I<8 WMD@AE9I 8 8 = 9.

/ 8 X=J.2 >EDI: A8<MD; 8 @9; : AE?@K=N AEDQWMD@AE9I; 9J9 ED09; 8; ; 9J9 WMD@AE=CD:@9J9 @9; ID; : 8A9E8 #AEDL@9<8-39I 9: =; ; =@9<8. / 8 @8A?S@? 10, <T>9M; D; ; ?P =0 I=WMD@AE=CD:@9J9 U8ADE=8MB, : 9: D<TU 9A<DE: A=DU 11 IMN <T<9I 8 WMD@AE9I 8 8, >E=: 9DI =; D; ; 9J9 @ ; 8C8M? 6 I<?QWMD@AE9I; 9F 9L@MBI @ = 5, ; 8U8AT<8PA 9L@MBI @ = 5 = 3 < <=ID MD; A =0>E9<9INRDJ9 U8ADE=8MB, E80IDMD; ; TQ UDHI? : 9L9F >MD; 9C; TU I=WMD@AE=@9U 4 : >E=: 9DI =; D; ; TU= @ @9; K8U 9L@MBI @ = 5 WMD@AE9I 8U= 8 = 9 = @ : DEDI =; D 9L@MBI @ = 3 WMD@AE9I 8 1.

/ 8 X=J.3 >EDI: A8<MD; 8 @9; : AE?@K=N AEDQWMD@AE9I; 9J9 WMD@AE=CD:@9J9 ED09; 8; ; 9J9 @9; ID; : 8A9E8 #AEDL@9<8-39I 9: =; ; =@9<8 < W@E8; =E?PRDU @9E>?: D 17 =0 >E9<9INRDJ9 U8ADE=8MB, JID < <DEQ; DF @ETS@D 13 08@ED>MD; T I=WMD@AE=CD:@=D L9LTS@= 14 : <T<DI D; ; TU= CDEDO 9A<DE: A=N < ; =Q @9; K8U= A9@9>E9<9INR=Q

WMD@AE9I 9< 1, 8, 9 9L@MBI 9@ ED09; 8; ; 9J9 @9; ID; :8A9E8, 08@MPCD; ; 9J9 <
W@E8; =E?PR=F @9E>?: IMN ?UD; BSD; =N >8E80=A; TQ WMD@AE9U8J; =A; TQ S ?U9<.

2M9@-: QDU8 ED09; 8; ; 9J9 WMD@AE=CD: @9J9 @9; ID; :8A9E8 #AEDL@9<8-39I9; =; ; =@9<8
; 8 X=J.4 :9I DEH=A CDATED 9L@MBI @= 15, 16, 17 = 18, =09M=E9<8; ; TD IE?J 9A IE?J8

5 :M9NU= >MD; 9C; 9J9 I=WMD@AE=@8 4. 3DE<8N 9L@MBI @8 15 =UDDA 9I=; WMD@AE9I 19,
>E=: 9DI=; D; ; TF @: DEDI=; D 9L@MBI @= 15. 5A9E8N 9L@MBI @8 16 A8@HD =UDDA 9I=;

WMD@AE9I 20, >E=: 9DI=; D; ; TF @ @9; K? 9L@MBI @= 16. 4EDABN 9L@MBI @8 17 =UDDA I<8
WMD@AE9I 8 21 = 22, >E=: 9DI=; D; ; TD @ @9; K8U 9L@MBI @=. f DA<DEA8N 9L@MBI @8 18 =UDDA

10 A8@HD I<8 WMD@AE9I 8 23 = 24, >E=: 9DI=; D; ; TD @ @9; K? = @: DEDI=; D 9L@MBI @= 18.

5A9E8N 9L@MBI @8 16 : 9DI=; D; 8 : AEDABDF 9L@MBI @9F 17 : >9U9RBP >DEDUTC@= 25, 8
AEDABN 9L@MBI @8 17 : 9DI=; D; 8 : CDA<DEA9F 9L@MBI @9F 18 : >9U9RBP >DEDUTC@= 26.

&9; :AE?@K=N ED09; 8; ; 9J9 WMD@AE=CD: @9J9 @9; ID; :8A9E8 #AEDL@9<8-

39I9; =; ; =@9<8 ; 8 X=J.5 :9I DEH=A I=WMD@AE=CD: @?P @8A?S @? 27, < @9A9E9F <

15 RDMD<=I; TQ 9A<DE: A=NQ 28 08@ED>MD; T; ; 8C8MB CDATEDQ 9L@MBI 9@ 15, 16, 17 = 18 <=ID
MD; A =0 UDI; 9F X9MBJ= : =09MNK=DF UDHI? 9L@MBI @8U= : M9DU I=WMD@AE=@8 4 =0 MD; A

>9M=>E9>=MD; 8. \MD@AE9I 29 >DE<9F 9I; 9WMD@AE9I; 9F 9L@MBI @= 15 E8: >9M9HD; <9
<; ?AED; ; DU >E9: AE8; : A<D WMD@AE=CD: @9F @8A?S @= 27. 5A9E8N 9I; 9WMD@AE9I; 8N

20 9L@MBI @8 16 =UDDA WMD@AE9I 20, E8: >9M9HD; ; TF <9 <; DS; DU >E9: AE8; : A<D @8A?S @= 27,
@9A9ETF @9UU?A=E?DA: N >DEDUTC@9F 25 : WMD@AE9I 9U 21 AEDABDF I<?QWMD@AE9I; 9F

9L@MBI @= 17, <A9E9F WMD@AE9I 22 @9UU?A=E?DA: N >DEDUTC@9F 26 : WMD@AE9I 9U 23
CDA<DEA9F I<?QWMD@AE9I; 9F 9L@MBI @= 18, <TQ9I; 9F WMD@AE9I 24 >E=: 9DI=; NDA: N @

: DEDI=; D 9L@MBI @= 18.

25 5 LM9@-: QDUD ED09; 8; ; 9J9 WMD@AE=CD: @9J9 @9; ID; :8A9E8 #AEDL@9<8-

39I9; =; ; =@9<8 ; 8 X=J.6 >DE<8N, <A9E8N = CDA<DEA8N 9L@MBI @= 28, 29, 30 :9I DEH8A >9
9I; 9U? WMD@AE9I? 31, 32 = 33, 8 AEDABN 9L@MBI @8 34 :9I DEH=A I<8 WMD@AE9I 8 35 = 36,

WMD@AE9I 35 9L@MBI @= 34 : 9DI=; D; : WMD@AE9I 9U 32 <A9E9F 9L@MBI @= 29. 5A9E9F

30 WMD@AE9I 36 9L@MBI @= 34 : 9DI=; D; : <; DS; =U <T<9I 9U 37 @9; ID; :8A9E8, WMD@AE9I 31
>DE<9F 9L@MBI @= 28 : 9DI=; D; : <; DS; =U <T<9I 9U 38 @9; ID; :8A9E8. 5; DS; =D

<T<9I T 37 = 38 >EDI; 80; 8CD; T IMN >E=: 9DI=; D; =N @ <; DS; DF I<?Q>E9<9I; 9F : DA= 39.
\MD@AE9I 33 CDA<DEA9F 9L@MBI @= >E=: 9DI=; D; @ <; DS; DU? <T<9I? 40 9I; >E9<9I; 9F

M=; == 41 (X=J.7).

35 / 8 X=J.7 < @8CD: A<D >E=UDE8 >E=UD; D; =N >9@808; 8 LM9@-: QDU8 <@MPCD; =N I<?Q

ED09; 8; ; TQ WMD@AE=CD: @=Q @9; ID; :8A9E9< 42 = 43 < : QDUD : 9DI=; D; =N I<?Q

I<?Q>E9<9I; TQ M=; =F 39 = 44 : <T: 9@9C8: A9A; TU JD; DE8A9E9U 45 = WMD@AE=CD: @9F
; 8JE?0@9F 46, : 9DI=; D; ; TQ 9I; 9>E9<9I; 9F M=; =DF 41.

40 2M9@-: QDU8 WMD@AE=CD: @9J9 ED09; 8; ; 9J9 @9; ID; :8A9E8 ; 8 X=J.8 :9I DEH=A CDATED

9L@MBI @= 47, 48, 49, 50 9I=; 8@9<9F >M9R8I = = E8OUDE9<, =09M=E9<8; ; TD A9; @=U=

: M9NU= I=WMD@AE=@8 4 = :9I DEH8R=D >9 9I; 9U? WMD@AE9I? 51, 52, 53, 54. \MD@AE9I 51

>DE<9F 9L@MBI @= 47 = WMD@AE9I 53 AEDABDF 9L@MBI @= 49 >E=: 9DI=; D; T @ <; DS; =U

<T<9I 8U 55 = 56, 8 WMD@AE9I 52 <A9E9F 9L@MBI @= 48 = WMD@AE9I 54 CDA<DEA9F

45 9L@MBI @= 50 >E=: 9DI=; D; T @ <; DS; =U <T<9I 8U 57 = 58 IMN @9UU?A8K== <

I<?Q>E9<9I; 9F <T: 9@9C8: A9A; 9F M=; == 59, < ; 8C8MD @9A9E9F ? : A8; 9<MD;

<T: 9@9C8: A9A; TF JD; DE8A9E 60, 8 < @9; KD M=; == 59 - WMD@AE=CD: @8N ; 8JE?0@8 61.

3E=UDE 1 <T>9M; D; =N ED09; 8; ; 9J9 WMD@AE=CD: @9J9 @9; ID; :8A9E8 #AEDL@9<8-

39I9; =; ; =@9<8

50 / 8 I=WMD@AE=CD: @?P @8A?S @? 10 I=8UDAE9U (X=J.2) D=100 UU, <T: 9A9F 150 UU, :

9: D<TU 9A<DE: A=DU 11 3,5 UU IMN <T<9I 8 WMD@AE9I 8 9 ; 8U9A8; T CDEDO >MD; 9C; TF

>9M=>E9>=MD; 9<TF I=WMD@AE=@ 4 A9MR=; 9F 25 U=@E9; 9L@MBI @= 3 = 5 ED09; 8; ; 9J9

WMD@AE=CD:@9J9 AEDQWMD@AE9I; 9J9 @9; ID; :8A9E8 #AEDL@9<8-39I9:=; ; =@9<8 < <=ID
MD; A A9MR=; 9F 50 U=@E9; , <T:9A9F 120 UU = IM=; 9F 600 U =0 >E9<9INRDJ9 U8ADE=8MB
(UDI; 8N X9MBJ8), >E=CDU 9I; 8 9L@MBI@8 =UDDA I<8 WMD@AE9I 8 8 = 9, >E=>8N; ; TQ @
; 8C8M? =@9; K? WA9F MD; AT, 8 <A9E8N 9L@MBI@8 =UDDA < :DEDI=; D 9I=; A9@9>E9<9INR=F
WMD@AE9I 1.

3E=UDE 2 <T>9M; D; =N ED09; 8; ; ; 9J9 WMD@AE=CD:@9J9 @9; ID; :8A9E8 #AEDL@9<8-
39I9:=; ; =@9<8

/ 8 @8A?S@? 27 =0 I=WMD@AE=@8 ; 8U9A8; T CDATED MD; AT 15, 16, 17, 18 IM=; 9F 800 U,
<T:9A9F 0,1 U = A9MR=; 9F 50 U=@E9; , <T>9M; D; ; TD=0 UDI; 9F X9MBJ= =
=09M=E9<8; ; TD IE?J 9A IE?J8 >MD; 9C; TU >E9>=MD; 9<TU I=WMD@AE=@9U 4 A9MR=; 9F 50
U=@E9; . &9; :AE?@K== WMD@AE=CD:@=Q ED09; 8; ; ; TQ @9; ID; :8A9E9< >9IE9L; 9 >9@808; T
; 8 X=J.3 = 5.

\MD@AE=CD:@=F ED09; 8; ; ; TF <T:9@9C8:A9A; TF U; 9J9WMD@AE9I; TF @9; ID; :8A9E
#AEDL@9<8-39I9:=; ; =@9<8 E8L9A8DA :MDI?PR=U 9LE809U. \MD@AE=CD:@=F 08ENI 9A
9I; 9>E9<9I; 9F M=; == =M= 9I; 9M=; DF; 9J9 >E9<9INRDJ9 @8; 8MB < EDH=UD ED09; 8; ; 8
; 8>ENHD; =F =M= ED09; 8; ; 8 A9@9< CDEDO <Q9I; 9F WMD@AE9I (X=J.4) ; 8@8>M=<8DA:N ; 8
9L@MBI@D 15 = CDEDO >MD; 9C; TF I=WMD@AE=@ 4 JD; DE=E?DA 08ENI >E9A=<9>9M9H; 9J9
0; 8@8 ; 8 9L@MBI@8Q 16, 17, 18, :9DI=; D; ; TQ 9>EDI DMD; ; TU 9LE809U >E= >9U9R=
>DEDUTCD@ 25, 26. 4E8; :X9EU=E?DUTF >9 0; 8@? = ; 8>ENHD; =P 08ENI ; ; =U8DA:N :
WMD@AE9I 8 24.

39 :?RD:A<? ED09; 8; ; ; TF @9; ID; :8A9E >EDI:A8<MND A:9L9F?:AE9F:A<9, :9CDA8PRDD
< :DLD CDEAT AE8; :X9EU8A9E8 =@9; ID; :8A9E8, E8L9A8PRDD< ED09; 8; ; ; TQ
E809U@; ?ATQ @9; A?E8Q. !D09; 8; ; ; TF WMD@AE=CD:@=F @9; ID; :8A9E #AEDL@9<8-
39I9:=; ; =@9<8 >EDI:A8<MND A:8M9J ED09; 8; ; ; 9J9 <T:9@9C8:A9A; 9J9
AE8; :X9EU8A9E8 /.4D:MB = < 9AM=C=D 9A AE8; :X9EU8A9E8 /. 4D:MB =UDDA L9MBS?P
E8:>EDI DMD; ; ?P DU@9:AB = <08=U; ?P =; I?@A=<; 9:AB 9L@MBI 9@, >9WA9U? =UDDA L9MDD
; =0@?P ED09; 8; ; ; ?P C8:A9A?.

\MD@AE=CD:@=D ED09; 8; ; ; TD @9; ID; :8A9ET #AEDL@9<8-39I9:=; ; =@9<8
>EDI; 80; 8CD; T IMN E8L9AT < 9I; 9>E9<9I; TQ <T:9@9C8:A9A; TQ M=; =NQ (X=J.4 = 5), <
I<?Q>E9<9I; TQ <T:9@9C8:A9A; TQ M=; =NQ (X=J.7) = IMN :9JMB:9<8; =N = :<N0=
9I; 9>E9<9I; TQ = I<?Q>E9<9I; TQ <T:9@9C8:A9A; TQ M=; =F (X=J.1,3, 6 = 7).
&9; ID; :8A9E ; 8 X=J.4 = 5 9LD:>DC=<8DA @9WXX=K=D; A >9<TSD; =N <Q9I; 9J9
; 8>ENHD; =N < AE= E808 08 :CDA AEDQ@E8A; 9J9 ?<DM=CD; =N @9M=CD:A<8 = >M9R8I=
9L@MBI 9@ <9 <Q9I; TQ = <TQ9I; TQ KD>NQ. 3E= <@MPCD; == @9; ID; :8A9E8 < 9LE8A; 9U
; 8>E8<MD; ==, D:M= <Q9I; TD = <TQ9I; TD @MDUUT >9UD; NAB UD:A8U=; ; 8>ENHD; =D ; 8
<TQ9ID L?IDA < AE= E808 UD; BSD >9 :E8<; D; =P : ; 8>ENHD; =DU ; 8 <Q9ID. &9; ID; :8A9E
; 8 X=J.6 = 7 =UDDA <; ?AED; ; PP DU@9:A; ?P :<NOB UDHI? 9L@MBI@8U= 28, 29 = 34.
&9; ID; :8A9E ; 8 X=J.8 >EDI:A8<MND A:8M9J DU@9:A; 9J9 AE8; :X9EU8A9E8 IMN
J8MB<8; =CD:@9F E80<N0@= I<?Q>E9<9I; TQ <T:9@9C8:A9A; TQ M=; =F.

) 9EU?MB =09LEDAD; =N

1. \MD@AE=CD:@=F @9; ID; :8A9E, :9IDEH8R=F 9L@MBI@= < <=ID MD; A =0 >E9<9INRDJ9
U8ADE=8MB, :M9F >MD; 9C; 9J9 I=WMD@AE=@8, E8:>9M9HD; ; 9J9 UDHI? 9L@MBI@8U=, =
WMD@AE9IT, :9DI=; D; ; TD : 9L@MBI@8U=, 9AM=C8PR=F:N ADU, CA9 WMD@AE=CD:@=F
@9; ID; :8A9E :9IDEH=A I<D 9L@MBI@= : AEDUN WMD@AE9I 8U=, >E=CDU >DE<TF WMD@AE9I
>E=: 9DI=; D; @ :DEDI=; D >DE<9F 9L@MBI@=, 8 <A9E8N 9L@MBI@8 =UDDA I<8 WMD@AE9I 8,
>E=: 9DI=; D; ; TD @ @9; K8U 9L@MBI@=.

2. \MD@AE=CD:@=F @9; ID; :8A9E >9 >.1, 9AM=C8PR=F:N ADU, CA9 >DE<8N = <A9E8N

9L@MBI@=: 9 : M9DU I=WMD@AE=@8 08@MPCD; T < W@E8; =E?PR=F @9E>?: =0 >E9<9INRDJ9
U8ADE=8MB : AEDUN 9A<DE: A=NU= IMN <T<9I 8 AEDQ WMD@AE9I 9<, 08@MPCD; ; TQ <
I=WMD@AE=CD: @=D L9LTS@=.

3. \MD@AE=CD: @=F @9; ID; : 8A9E, : 9IDEH8R=F 9L@MBI@= < <=ID MD; A =0 >E9<9INRDJ9
5 U8ADE=8MB, =09M=E9<8; ; TD >MD; 9C; TU I=WMD@AE=@9U, = WMD@AE9IT, : 9DI=; D; ; TD :
9L@MBI@8U= : : <; DS; ; U= <T<9I 8U= @9; ID; : 8A9E8, 9AM=C8PR=F: N ADU, CA9
WMD@AE=CD: @=F @9; ID; : 8A9E : 9IDEH=A CDATED 9I=; 8@9<9F >M9R8I= = E8OUDE9<
9L@MBI@=, ; 8U9A8; ; TD; 8 I=WMD@AE=CD: @?P @8A?S@?, >DE<8N = <A9E8N 9L@MBI@= =UDPA
10 >9 9I; 9U? WMD@AE9I?, WMD@AE9I >DE<9F 9L@MBI@= E8: >9M9HD; <9 <; ?AED; ; DU
>E9: AE8; : A<D @8A?S@=, 8 WMD@AE9I <A9E9F 9L@MBI@= ? : A8; 9<MD; <9 <; DS; DU
>E9: AE8; : A<D @8A?S@=, 8 AEDABN = CDA<DEA8N 9L@MBI@= =UDPA >9 I<8 WMD@AE9I 8,
<A9E8N, AEDABN = CDA<DEA8N 9L@MBI@= : @9UU?A=E9<8; T >9: MDI 9<8ADM; 9 A8@=U
9LE809U, CA9 WMD@AE9I <A9E9F 9L@MBI@=, E8: >9M9HD; ; TF <9 <; DS; DU >E9: AE8; : A<D
15 @8A?S@=, >E=: 9DI=; D; @ <; ?AED; ; DU? WMD@AE9I? AEDABDF 9L@MBI@= : I<?UN
WMD@AE9I 8U=, ? @9A9E9F <; DS; ; =F WMD@AE9I : 9DI=; D; : <; ?AED; ; =U WMD@AE9I 9U
CDA<DEA9F I<?QWMD@AE9I; 9F 9L@MBI@=, 8 <; ?AED; ; =F WMD@AE9I CDA<DEA9F
I<?QWMD@AE9I; 9F 9L@MBI@= = WMD@AE9I >DE<9F 9L@MBI@= >E=: 9DI=; D; T @ <; DS; ; =U
20 <T<9I 8U @9; ID; : 8A9E8 IMN @9UU?A8K== < 9I; 9>E9<9I; 9F M=; ==.

4. \MD@AE=CD: @=F @9; ID; : 8A9E >9 >.3, 9AM=C8PR=F: N ADU, CA9 <: D CDATED 9L@MBI@= :
>MD; 9C; TU I=WMD@AE=@9U >9UDRD; T < W@E8; =E9<8; ; TF @9E>?: =0 >E9<9INRDJ9
U8ADE=8MB.

5. \MD@AE=CD: @=F @9; ID; : 8A9E >9 >.4, 9AM=C8PR=F: N ADU, CA9 W@E8; =E9<8; ; TF
25 @9E>?: =UDDA S D: AB 9A<DE: A=F IMN <; DS; ; =Q <T<9I 9< S D: A= WMD@AE9I 9<, 08@MPCD; ; TQ
< I=WMD@AE=CD: @=D L9LTS@=.

6. \MD@AE=CD: @=F ED09; 8; ; TF @9; ID; : 8A9E, : 9IDEH8R=F 9L@MBI@= < <=ID MD; A =0
>E9<9INRDJ9 U8ADE=8MB, =09M=E9<8; ; TD >MD; 9C; TU I=WMD@AE=@9U, = WMD@AE9IT,
30 : 9DI=; D; ; TD : 9L@MBI@8U= : : <; DS; ; U= <T<9I 8U= @9; ID; : 8A9E8, 9AM=C8PR=F: N ADU,
CA9 WMD@AE=CD: @=F @9; ID; : 8A9E : 9IDEH=A CDATED 9I=; 8@9<9F >M9R8I= = E8OUDE9<
9L@MBI@=, ; 8U9A8; ; TD; 8 I=WMD@AE=CD: @?P @8A?S@?, >DE<8N, <A9E8N = CDA<DEA8N
9L@MBI@= =UDPA >9 9I; 9U? WMD@AE9I?, 8 AEDABN 9L@MBI@8 : 9IDEH=A I<8 WMD@AE9I 8,
9I=; =0 @9A9ETQ : 9DI=; D; : WMD@AE9I 9U <A9E9F 9L@MBI@=, 8 IE?J9F WMD@AE9I <A9E9F
35 9L@MBI@= = WMD@AE9I >DE<9F 9L@MBI@= >E=: 9DI=; D; T @ <; DS; ; =U <T<9I 8U
@9; ID; : 8A9E8 IMN @9UU?A8K== < I<?Q>E9<9I; 9F KD>=, 8 WMD@AE9I CDA<DEA9F 9L@MBI@=
>E=: 9DI=; D; @ : DEDI=; D CDA<DEA9F 9L@MBI@= : 9DI=; D; : <; DS; ; =U <T<9I 9U
@9; ID; : 8A9E8 IMN @9UU?A8K== < 9I; 9>E9<9I; 9F M=; ==.

7. \MD@AE=CD: @=F @9; ID; : 8A9E >9 >.6, 9AM=C8PR=F: N ADU, CA9 <: D CDATED 9L@MBI@= :
40 >MD; 9C; TU I=WMD@AE=@9U >9UDRD; T < W@E8; =E9<8; ; TF @9E>?: =0 >E9<9INRDJ9
U8ADE=8MB.

8. \MD@AE=CD: @=F @9; ID; : 8A9E >9 >.7, 9AM=C8PR=F: N ADU, CA9 W@E8; =E9<8; ; TF
@9E>?: =UDDA >NAB >E9Q9I; TQ =09MNA9E9< IMN <; DS; ; =Q <T<9I 9< >NA= WMD@AE9I 9< 9A
45 CDATEDQ 9L@MBI 9@ @9; ID; : 8A9E8.

9. \MD@AE=CD: @=F @9; ID; : 8A9E, : 9IDEH8R=F 9L@MBI@= < <=ID MD; A =0 >E9<9INRDJ9
U8ADE=8MB, =09M=E9<8; ; TD >MD; 9C; TU I=WMD@AE=@9U, = WMD@AE9IT, : 9DI=; D; ; TD :
9L@MBI@8U=, 9AM=C8PR=F: N ADU, CA9 WMD@AE=CD: @=F @9; ID; : 8A9E : 9IDEH=A CDATED
50 =09M=E9<8; ; TD IE?J 9A IE?J8 9L@MBI@= 9I=; 8@9<9F >M9R8I= = E8OUDE9<, ; 8U9A8; ; TD
; 8 I=WMD@AE=CD: @?P @8A?S@?, <: D CDATED 9L@MBI@= : 9IDEH8A >9 9I; 9U? WMD@AE9I?,
WMD@AE9IT >DE<9F = AEDABDF 9L@MBI@= = WMD@AE9IT <A9E9F = CDA<DEA9F 9L@MBI@=
>E=: 9DI=; D; T @ <; DS; ; =U <T<9I 8U @9; ID; : 8A9E8 IMN @9UU?A8K== < I<?Q>E9<9I; 9F

KD>=.

10. \MD@AE=CD:@=F ED09; 8; ;; TF @9; ID; :8A9E >9 >.9, 9AM=C8PR=F:N ADU, CA9 <: D
CDATED 9L@MBI@=: >MD; 9C; TU I=WMD@AE=@9U >9UDRD; T < W@E8; =E9<8; ; TF @9E>?: =0
>E9<9INRDJ9 U8ADE=8MB.

5

11. \MD@AE=CD:@=F ED09; 8; ;; TF @9; ID; :8A9E >9 >.10, 9AM=C8PR=F:N ADU, CA9
W@E8; =E9<8; ; TF @9E>?: =UDDA CDATED<; DS; =Q <T<9I8 : >E9Q9I; TU= =09MNA9E8U=,
>E=: 9DI=; D; ; TU= @ CDATEDU WMD@AE9I8U 9A CDATEDQ 9L@MBI9@ @9; ID; :8A9E8.

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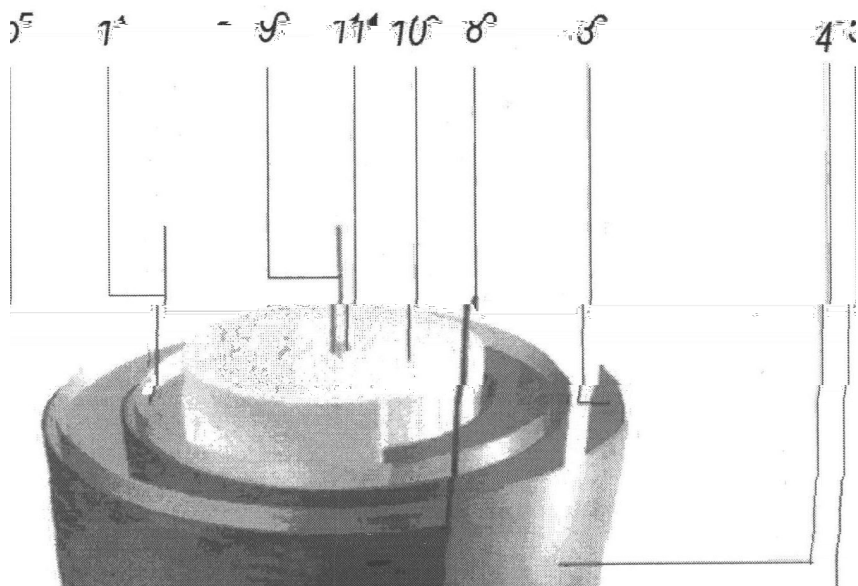
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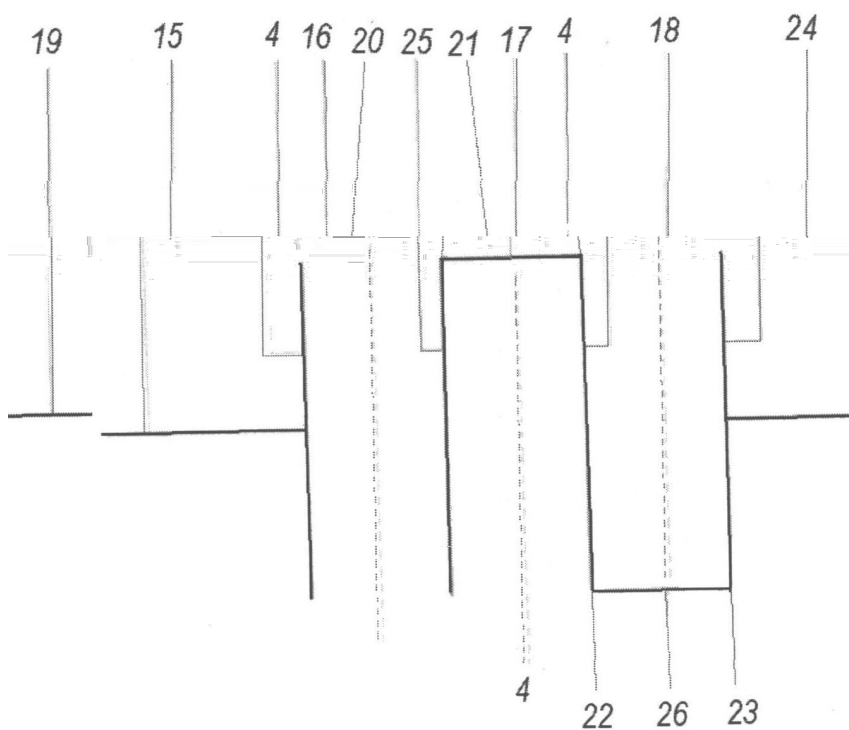
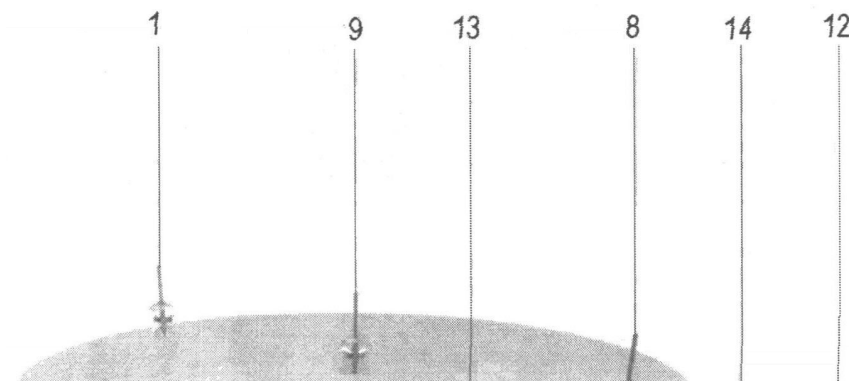
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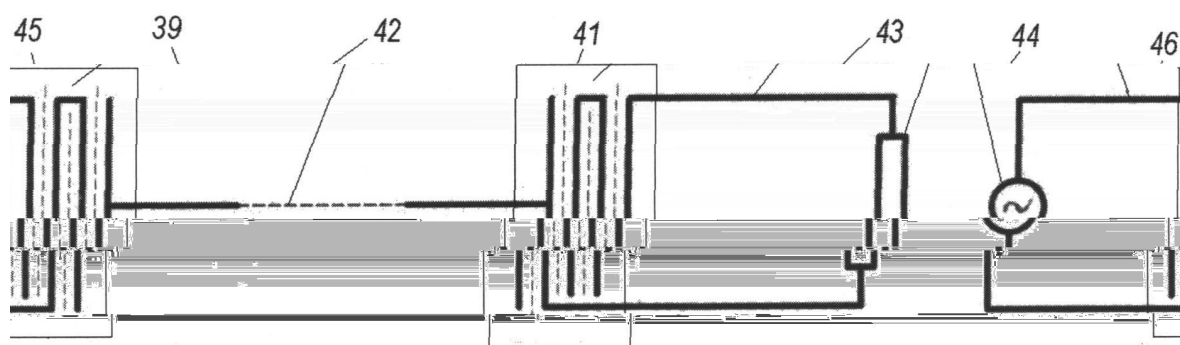




Фиг. 4



28 31 29 32 34 30



Фиг. 7

60 59 55 47 51 48 49 50 57 59 61
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